

The Global Antitrust Institute Report on the Digital Economy



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Acknowledgements

The goal of the Global Antitrust Institute Report on the Digital Economy is to provide a balanced perspective—grounded in economic analysis and empirical evidence—on a wide variety of contemporary issues in antitrust law and economics. To this end, we have relied upon generous intellectual contributions from some of the most influential economists, legal scholars, and practitioners across the global antitrust community.

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The Global Antitrust Institute encouraged contributors to use the Report as a platform to participate in the marketplace of ideas that is critical to contemporary competition policy debates. Given the diversity of viewpoints presented, not everyone involved with this Report will agree with every position presented; readers should not

infer such agreement or endorsement by any contributor. We are pleased to provide a platform for a variety of viewpoints and we believe it will prove a successful new entrant in the ongoing debate about the role of antitrust in the digital age. We hope you enjoy our Report on the Digital Economy.

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Introduction and Executive Summary

Judge Douglas H. Ginsburg & Joshua D. Wright

Antitrust institutions in the United States and around the world are at a crossroads. Until now, antitrust has been based upon the consumer welfare standard, which has served as the lodestar of modern antitrust for the past 40 years. The hallmark of modern antitrust enforcement has been a case-by-case approach, driven by economic analysis and an evaluation of conduct on the merits. Courts and competition agencies have generally rejected invitations to jettison this successful approach in favor of presumptions of illegality and other shortcuts. The reason is simple: Relying upon presumptions instead of evidence risks rendering unlawful business behavior that in fact benefits consumers.

But there is increasingly talk of a revolution that would overthrow the antitrust regime in the United States and, indeed, around the world. The drumbeat for this revolution appears to be strong and growing, with a broad range of enthusiastic participants and followers, including legal academics and economists, public intellectuals, think tankers, prominent members of Congress, and some foreign competition authorities. The would-be revolution has already had some success—at least as measured by the increasing discussion in academia, the popular press, and social media, and having embedded some of its central ideas in the platforms of both major U.S. political parties. Signs of the gathering revolution can also be seen in the various reports on antitrust and the digital economy emanating from around the world, such as those of the Stigler Center at the University of Chicago, the Australian Competition and Consumer Commission, The United Kingdom’s Competition and Markets Authority, the European Commission’s Directorate-General for Competition, the House Judiciary Committee’s Subcommittee on Antitrust, Commercial, and Administrative Law, and other think tanks and governmental bodies.

The more radical revolutionaries want an antitrust regime to address a myriad of perceived socio-political problems, including, but not limited to, income inequality, relative wage depression, and the concentration of political power. Some call for incorporating other forms of regulation—particularly regulation of data and privacy—into the antitrust laws and putting them in the hands of the antitrust regulators. Their revolutionary zeal is aimed generally at the digital economy and in particular at large tech firms. Their proposed “fixes” targeting the largest tech firms run the gamut from the reinvigoration of competition rulemaking at the Federal Trade Commission, to shifting the burden of proof from plaintiffs to defendants in antitrust litigation, to extending the reach of antitrust to content moderation decisions, to size-based presumptions akin to the antitrust approach of the 1960s, to creating a new agency with unlimited regulatory power. These proposals have been refined to the point that they are now ripe, in our view, for rigorous examination from an evidence-based perspective.

The GAI is well suited to participate in that examination. Our fundamental mission is to promote the application of sound economic analysis to competition enforcement around the world through economic education programs, competition advocacy, and research. It is our sincere hope that the GAI Report on the Digital Economy furthers the healthy debate now under way in the marketplace of ideas. With that hope in mind, we have brought together in the Report a stellar group of contributors, including former government officials, academic lawyers and economists, and practitioners. These authors, with a diversity of views, advance a plethora of ideas to improve the performance of antitrust institutions, as well as criticisms of many more radical proposals. And while the authors represent a consensus around a few key points—for example, support for the existing consumer welfare orientation of antitrust institutions—readers should not impute to contributors agreement or endorsement of the Report as a whole. Our primary goals are to offer (1) a collection of views that share an evidence-based approach to the economics of antitrust enforcement in digital markets and beyond,

(2) an assessment of the state of competition in those markets, and (3) an evaluation of the more significant policy proposals that have been offered in this area. The Report is structured with those goals in mind.

In Section I the authors explain the foundational economic concepts and legal principles that apply to the digital economy. This serves two functions: It is a primer for the reader less familiar with the key topics in competition policy as applied to the digital economy, and it prepares the reader for the application of those principles and concepts in the discussions to come in Sections II and III. Chapter 1 begins with John Yun discussing the basics of network effects and platform markets. In Chapter 2, Geoffrey Manne explains the error cost framework and emphasizes its importance in assessing conduct in innovative markets. In Chapter 3, Elyse Dorsey puts the consumer welfare standard in historical perspective and reasserts its continuing importance as the lodestar of competition law. Christopher Yoo then returns to the topic of network effects, digging more deeply into their theoretical underpinnings and their competitive significance in Chapter 4. In Chapter 5 Luke Froeb, Greg Werden, Bernhard Ganglmair, and Steven Tschantz explore the economics of innovation, focusing on the economic underpinnings of intellectual property law. In Chapter 6, John Yun details the antitrust implications of a firm having “big data,” and in Chapter 7 he discusses vertical integration and the generally procompetitive outcomes of vertical mergers. Relatedly, in Chapter 8 Dan O’Brien covers the welfare implications of various forms of vertical arrangements. Michael Salinger uses Chapter 9 to build on the two preceding chapters to explicate the effects of self-preferencing. Chapter 10 provides Richard Epstein’s analysis of the increasingly important intersection of the patent and antitrust laws.

Section II provides an overview of the state of competition law in digital markets, current antitrust enforcement efforts, competition, concentration, and the role of government in the competitive process. Chapter 11 begins this section with Jonathan Klick addressing one of the most frequently asked questions: Is the digital economy too

concentrated? In Chapter 12, Jan Rybníček looks at various metrics related to innovation, and uses them to compare innovation levels in the United States and Europe. Avinash Collis then reviews the macroeconomic effects that big tech has had on the global economy and in Chapter 13 proposes a new measure of the benefits of technology. In Chapter 14, Thom Lambert uses public choice theory to explore rent-seeking strategies used by firms in the digital economy. Kristian Stout and Aurelien Portuese, in Chapters 15 and 16, provide a review of antitrust enforcement efforts to date in the digital economy in the U.S. and the EU. In Chapter 17 John Yun then turns to the analysis of “killer acquisitions,” asking whether current laws are capable of addressing mergers involving nascent or potential competitors. In Chapter 18, Catherine Tucker examines the state of competition in digital advertising markets. Chapter 19 closes out this section with Bruce H. Kobayashi considering the effects of non-compete and no-poach agreements in digital markets, and their treatment under both state and federal antitrust law.

Finally, Section III analyzes contemporary proposals to overhaul the antitrust laws and offers evidence-based proposals for how to improve antitrust institutions in order to promote competition in the digital economy. In Chapter 20, Neil Chilson opens this section with the question: Do we need a new regulatory scheme just for big tech? Then in Chapter 21 Tad Lipsky reviews the essential facilities doctrine through its surprisingly elusive history in the Supreme Court to its controversial implications for the digital economy. In Chapter 22, Joanna Tsai discusses the role of standards and standards development organizations and their contributions to innovation in the digital economy. Chapter 23, by Babette Boliek, highlights the relationship between competition policy and the future of 5G innovation. Chapter 24 discusses the trade-offs between *ex ante* sector-specific regulation and *ex post* antitrust enforcement; along the way authors Bruce H. Kobayashi and Joshua D. Wright debunk the claim that modern antitrust is based solely upon *ex post* antitrust litigation and analyze the tradeoffs among available ways to approach the regulation of digital markets. Chapter 25 builds upon the previous chapter,

with Giuseppe Colangelo reviewing and weighing some of the recent proposals to regulate tech firms. In Chapter 26, Ai Deng delves into the next frontier of Sherman Act Section 1 issues—algorithmic collusion—and offers insights into how the use of algorithms will affect the future of competition. Justin “Gus” Hurwitz, in Chapter 27, walks through the history of duties to deal as both remedies and regulatory mandates, and explains why a duty to deal should not be favored as an antitrust remedy. In Chapter 28, Berin Szóka and Ashkhen Kazaryan provide background on the hotly debated merits of Section 230 of the Communications Decency Act, and discuss some recent proposals for reform. In Chapter 29, Bruce H. Kobayashi and Joshua D. Wright broadly cover antitrust exemptions and immunities, and explain why both should be treated with skepticism. In Chapter 30, Maureen Ohlhausen highlights the anticompetitive effects of occupational licensing and discusses recent enforcement efforts in this area. James Cooper, in Chapter 31, explores the ever-increasing overlap between privacy concerns and the antitrust laws. In Chapter 32, Daniel Crane engages in the ongoing debate regarding the design of public enforcement in the U.S., focusing on the tensions between the FTC, the DOJ, and the states’ attorneys general. In Chapter 33, Michael Baye and Jeffrey Prince provide regulators with an economic toolkit to use when considering certain conduct in digital markets. And finally, Chapter 34 closes with Tim Muris and Joseph Coniglio’s evaluation of the continued importance of both the price-cost test and the likelihood of recoupment when considering predation in digital markets.

We hope readers learn from, engage with, and enjoy reading the Report on the Digital Economy as much as we have enjoyed producing it and engaging in the ongoing debate about the role of antitrust in the digital economy.

Section I: Foundations

Overview of Network Effects & Platforms in Digital Markets

John M. Yun*

INTRODUCTION

Multi-sided platforms, also known as “two-sided markets,” are synonymous with the digital economy.¹ Common examples include Google Search, Facebook, Amazon Marketplace, Windows, Android, and Uber. Yet platforms are not new. Newspapers, broadcast television, and the yellow pages are platforms that predate the digital age. In this chapter, we address a number of foundational questions.² What exactly are platforms? How do platforms relate to the various types of network effects? Importantly, do we need different tools to assess potential anticompetitive conduct that involves platforms?

Specifically, we begin with a discussion of the various types of network effects, as these effects are integral to understanding the nature of platforms. Next, we consider platforms more from the perspective of incentives rather than an overt focus on a standardized definition. We also discuss how platforms compete, including discussions of “zero-price” markets and the associated idea of “attention” markets. Finally, we offer some guidance on some relevant economic issues to consider when assessing platform markets in the context of antitrust cases.

* I thank Scalia Law student Timothy Swartz for excellent research assistance.

¹ There are various reasons to avoid using the term “two-sided markets” in the context of antitrust matters, including the fact that a platform can have more than two sides and the loose use of the word “markets.”

² This chapter is focused more on pedagogy and is not intended as a comprehensive, technical overview of the economics of network effects, platforms, and the related literature. Excellent summaries are available that serve such a purpose. See, e.g., Oz Shy, *A Short Survey of Network Economics*, 38 REV. INDUS. ORG. 119 (2011); Marc Rysman, *The Economics of Two-Sided Markets*, 23 J. ECON. PERSP. 125 (2009). See also Avi Goldfarb & Catherine Tucker, *Digital Economics*, 57 J. ECON. LITERATURE 3 (2019). Additionally, for a treatment of network effects “in action,” see Christopher Yoo, *Network Effects in Action*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

I. NETWORK EFFECTS

In discussing network effects, Professors Michael Katz and Carl Shapiro explain that “[t]here are many products for which the utility that a user derives from consumption of the good increases with the number of other agents consuming the good.”³ Commonly cited examples of products with these “direct” network effects include email, telephones, and fax machines.⁴ The idea is that, as more individuals adopt these products, the benefits to existing users (that is, the “network” of users) increases. Specifically, joining a network creates both a private gain to the individual and a social benefit to others on the network.⁵ This dual benefit creates a positive feedback loop; having more users makes the network more valuable and desirable to each additional user. It is no coincidence that the examples listed above all involve mechanisms of communication. These types of mechanisms tend naturally to cause network effects because of the benefits arising from the ability and option to communicate with more

³ Michael L. Katz & Carl Shapiro, *Network Effects, Competition, and Compatibility*, 75 AM. ECON. REV. 424, 424 (1985). While our primary focus is on positive network effects, in the sense that a user’s utility increases with more users on the same network or standard, network effects can also be negative. See, e.g., Shy, *supra* note 2, at 119–20 (“Negative network effects are generated by congestion or interference, and also are the result of snobbism or vanity, in that a consumer loses the sense of belonging to an elite group when a product is adopted more widely.”).

⁴ Some of the earliest economic literature on network effects began with models assessing potential equilibria in the telephone system. See Ronald Artle & Christian Averous, *The Telephone System as a Public Good: Static and Dynamic Aspects*, 4 BELL J. ECON. & MGMT. SCI. 84 (1973); Jeffrey Rohlfs, *A Theory of Interdependent Demand for a Communications Service*, 5 BELL J. ECON. & MGMT. SCI. 16 (1974).

⁵ Alternatively, the value that consumers receive from using a networked product can be divided into what Liebowitz & Margolis call (a) the “autarky value,” which is the value of the product even if no one else uses the same product, and (b) the “synchronization value,” which is the additional value from being able to interact with others on the network. See S. J. Liebowitz & Stephen E. Margolis, *Network Externalities (Effects)*, <https://wwwpub.utdallas.edu/~liebowit/palgrave/network.html>. This can be an important distinction because even a relatively “small” network can survive if the autarky value is sufficiently high and/or the synchronization value is sufficiently high even with a smaller network. To put a finer point on this, Liebowitz & Margolis note that “[a]s this article was being written, commentators are speculating on whether Apple computer will survive, since its network (base of users) is shrinking, some think, below a minimum acceptable level.” *Id.* As the subsequent growth and success of Apple affirms, an undue emphasis on the perceived level of network effects can lead to poor predictions.

people as the network grows.⁶ Such effects are akin to “demand-side economies of scale,” *i.e.*, the benefits of consumption increase as the network expands.⁷

In contrast, “indirect” network effects, or cross-group effects, arise when the increased participation by one group creates a greater incentive and corresponding benefit for another, related group to participate.⁸ For example, as more consumers purchase mobile devices running the Android operating system, the incentive for app developers to write software for Android increases. Similarly, as more passengers use a ride sharing app such as Lyft, drivers experience greater incentives to join the Lyft network, or platform. Both Android and Lyft are examples of multi-sided platforms, which we discuss in greater depth in the following section. While the distinction between direct and indirect network effects is important and certainly worth making, particularly in the context of digital platforms, they both ultimately come down to providing users greater value the more that others participate on the same network.⁹

Given the presence of network effects, both direct and indirect, do first-mover advantages create lock-in and a path dependency¹⁰ where markets can tip and create

⁶ See Shy, *supra* note 2, at 121 (“Consumers’ sensitivity to the size of telecommunication networks can be explained as follows: The number of potential direct connections (or links) among n subscribers is given by $L(n) = n(n - 1)/2$. If, for example, the number of subscribers increases from 10 to 11, the number of possible connections increases by $L(11) - L(10) = 55 - 45 = 10$. Hence, the addition of the 11th subscriber makes 10 additional connections possible[.]”).

⁷ See Hal Varian, *Use and Abuse of Network Effects*, in TOWARDS A JUST SOCIETY: JOSEPH STIGLITZ AND TWENTY-FIRST CENTURY ECONOMICS 229, 230 (Martin Guzman ed., 2018).

⁸ See, e.g., Paul Klemperer, *Network Effects and Switching Costs* (Mar. 2005) (manuscript at 2), <https://www.nuff.ox.ac.uk/Economics/papers/2006/w6/New%20Palgrave.pdf>, (“Indirect network effects arise if adoption is complementary because of its effect on a related market” (emphasis in original)).

⁹ See, e.g., Jeffrey Church et al., *Indirect Network Effects and Adoption Externalities*, 7 REV. NETWORK ECON. 337, 339 (2008) (“Network externalities that arise in settings with indirect network effects have the same microfoundations, in part, as network externalities that rise in settings with direct network effects.”).

¹⁰ In this context, “path dependence” describes a situation wherein “a minor or fleeting advantage or a seemingly inconsequential lead for some technology, product, or standard can have important and irreversible influences on the ultimate market allocation of resources, even in a world characterized by voluntary decisions and individually maximizing behavior.” S.J. Liebowitz & Stephen E. Margolis, *Path Dependence, Lock-In, and History*, 11 J.L. ECON. & ORG. 205, 205 (1995).

“winner takes all” (or “winner takes most”) outcomes? Might this also entail markets tipping in favor of inferior products or standards? These and related issues were the subject of early economic research on network effects.¹¹ The idea is that, even if a better, superior product or standard were to emerge, customers may stick with the inferior product because its network is larger and the market has already tipped in its favor.¹² This effect is compounded in the presence of switching costs; but even with nominal switching costs, there could still be a path dependency if there is a coordination problem that inhibits migration.¹³ A particular user might prefer a competing product or standard for various reasons, including an objectively superior set of features; however, without the ability to bring over a large proportion of other users in a collective switch, the theory is that the competing network will stall. Moreover, difficulties in overcoming incumbency are further exacerbated to the extent that there are economies of scale on the production side as well.¹⁴

The strength of this tendency to stay on a given path depends, however, on a number of factors. First, it will depend on the strength of the network effect and/or

¹¹ For some of the earlier and pioneering work on potential market inefficiencies from network effects, see, e.g., Joseph Farrell & Garth Saloner, *Standardization, Compatibility, and Innovation*, 16 RAND J. ECON. 70 (1985); W. Brian Arthur, *Competing Technologies, Increasing Returns, and Lock-In by Historical Events*, 99 ECON. J. 116, 127 (1989) (“But in the increasing returns case laissez-faire gives no guarantee that the ‘superior’ technology (in the long-run sense) will be the one that survives.”).

¹² See, e.g., Stan J. Liebowitz & Stephen E. Margolis, *The Fable of the Keys*, 30 J.L. & ECON. 1, 1 (1990) (“The economic literature on standards has focused recently on the possibility of market failure with respect to the choice of a standard. In its strongest form, the argument is essentially this: An established standard can persist over a challenger, even where all users prefer a world dominated by the challenger, if users are unable to coordinate their choices.”).

¹³ In this context, “path dependence” describes a situation wherein “a minor or fleeting advantage or a seemingly inconsequential lead for some technology, product, or standard can have important and irreversible influences on the ultimate market allocation of resources, even in a world characterized by voluntary decisions and individually maximizing behavior.” S.J. Liebowitz & Stephen E. Margolis, *Path Dependence, Lock-In, and History*, 11 J.L. ECON. & ORG. 205, 205 (1995).

¹⁴ Economies of scale, a.k.a., increasing returns to scale, occur when the average total cost of production falls as output increases.

whether the network effect is primarily responsible for the success of a product. Users could adopt a product for reasons other than a desire for a relatively large network. For example, while subscribers to an online version of a newspaper might value reading other user comments to the various stories posted, these comments likely represent only a small fraction of the total value that they derive from their subscription. On the other hand, the presence of other users will be significantly more important to users of business review sites like TripAdvisor and Foursquare. While these sites have useful basic information about local businesses, such as hours of operation and location(s), it is likely the breadth and depth of user reviews which represent the overwhelming value from visiting these sites. Thus, the relative importance of the size and quality of the network will depend on the particular market. Even in markets where network effects are important, there remains the question of when, and the degree to which, the network hits diminishing returns.

The importance of considering the strength and scope of network effects is undoubtedly important for assessing social media, where there is not a “one size fits all” approach.¹⁵ Like the canonic examples of email and telephones, social media has direct network effects that can be quite powerful. There is little doubt that the success of platforms such as Facebook, YouTube, LinkedIn, and TikTok involves not only the user- and platform-supplied content but also the social interactions. Again, the question is the nature and extent to which a particular social media platform relies on network effects.

Professor Catherine Tucker’s research reveals that network effects on social media can be quite “local,” in that what primarily affects a platform’s utility to users is not a large network per se but rather the participation of specific sets of users such as friends, relatives, co-workers, and classmates.¹⁶ Fundamentally, products can be still be useful as

¹⁵ This chapter uses the terms “social media” and “social networks” interchangeably.

¹⁶ See Catherine Tucker, *Online Advertising and Antitrust: Network Effects, Switching Costs, and Data as an Essential Facility*, CPI ANTITRUST CHRON. 2-3 (Apr. 2019) (“In the few forums where there are same-sided

long as there are two people who want to communicate with each other.¹⁷ For instance, even for products with strong direct network effects such as fax machines, it can be a viable method of communication at various network sizes.¹⁸ Thus, coordinating migration to a new or alternative network is not necessarily a significant hinderance if the primary value from joining a network is derived from a relatively small group of people. This point is not universal, however: It could be that the success of certain types of networks are dependent on having a large group of people rather than just a subset.¹⁹ A potential example, for some users at least, is Twitter, where the characteristics of the network correspond to type of public forum.²⁰

network effects, such as social media websites, my research suggests that these type of network effects are quite local. This means that they depend only on the user's smaller friend-group and do not depend on the user base of the entire platform.""); Catherine Tucker, *Network Stability, Network Externalities, and Technology Adoption*, in 37 ENTREPRENEURSHIP, INNOVATION, AND PLATFORMS: ADVANCES IN STRATEGIC MANAGEMENT (2017). Although, it is important to acknowledge that increases in the sheer number of users—analogous to the income effect in economics—also bring more users into each subgroup.

¹⁷ This point is acknowledged by the STIGLER COMM. ON DIG. PLATFORMS, STIGLER CTR., CHICAGO BOOTH SCH. OF BUS., FINAL REPORT 38 n.51 (2019) [hereinafter "Stigler Report"], <https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf> ("To send a message to someone, a user only needs that single person to be on a particular messaging app, rather than everyone they would want to send a message to. This explains why many messaging apps can live alongside one another—WhatsApp, Snapchat, SMS, and Facebook Messenger all have significant customer bases.").

¹⁸ Fax machines have a long history, but it was the introduction of Xerox's Magnafax Telecopier in 1966, which truly jumpstarted the technology. See JONATHAN COOPERSMITH, *FAXED: THE RISE AND FALL OF THE FAX MACHINE* (2016). Its use first grew in scale and viability in newsrooms and the military, rather than as a mass market product. See, e.g., Keith Randall, *The Rise and Fall of the Fax Machine*, TEXAS A&M TODAY (Aug. 6, 2015), <https://today.tamu.edu/2015/08/06/the-rise-and-fall-of-the-fax-machine>. Even today, the fax machine is still frequently used in real estate firms, pharmacies, and the medical industry. See *id.*; Lloyd Minor, *Why Your Doctor's Office Still Depends on a Fax Machine*, WALL ST. J. (Sept. 19, 2019), <https://blogs.wsj.com/experts/2019/09/19/why-your-doctors-office-still-depends-on-a-fax-machine>.

¹⁹ However, a platform's competitive viability might not necessarily depend on replicating the size of the largest social network in the same market.

²⁰ See, e.g., Elizabeth Harper, *Twitter 101: Understanding the Basics*, TECHLICIOUS (May 17, 2013), <https://www.techlicious.com/guide/twitter-101-understanding-the-basics> ("Think of Twitter as a big, open room."). An illustration of Twitter as a public forum is President Donald Trump's use of the platform to reach 80+ million followers. See Donald J. Trump (@realDonaldTrump), <https://twitter.com/realdonaldtrump> (visited June 30, 2020). It is indeed difficult, and costly, to replicate this type of reach through other social media sites and other channels of communication.

A second factor that potentially limits lock-in is product differentiation that caters to a spectrum of consumer preferences.²¹ Again, focusing on social networks, they can be differentiated along a number of dimensions including the format of communication, the type of advertising, the type and quality of complementary features, privacy settings, and demographic appeal.²² Differentiation also matters for platforms such as operating systems that entail both hardware and software components. Clearly, both are important. Depending on the consumer, non-network-based features like processor speed, memory, and camera quality can be a significant part of the decision to adopt a particular system.²³ The point is that equilibria can emerge with more than one network if consumers value product variety.

Relatedly, a third factor is that “tipping is less likely if agents can easily use multiple standards;”²⁴ this practice is often labeled “multi-homing.” There are numerous examples of competing platforms coexisting.²⁵ The ability to multi-home is dependent to

²¹ Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSP. 93, 106 (1994) (“Consumer heterogeneity and product differentiation tend to limit tipping and sustain multiple networks.”). See also Rysman, *supra* note 2, at 134 (“... if standards can differentiate from each other, they may be able to successfully coexist.”).

²² For example, among users aged 12 to 17, Snapchat is the market leader with 16.4 million users, while Instagram and Facebook are second and third, at 12.8 million and 11.5 million, respectively. See, *Facebook is Tops with Everyone but Teens*, EMARKETER (Aug. 28, 2018), <https://www.emarketer.com/content/facebook-is-tops-with-everyone-but-teens>. Even for broader age ranges, from ages 12–34, in just four years (from 2015 to 2019), Snapchat went from 15 percent of Facebook’s usage to virtually equal usage. See *Social Habit 2019*, EDISON RESEARCH 26 (May 30, 2019), <http://www.edisonresearch.com/wp-content/uploads/2019/05/The-Social-Habit-2019-from-Edison-Research.pdf>.

²³ For instance, for mobile devices, studies consistently show the importance of camera quality in consumers’ purchasing decision. See, e.g., Kristina Sruoginis, *Media Influence on Telecom Purchases* 12, INTERACTIVE ADVERTISING BUREAU (Oct. 2017), <https://www.iab.com/wp-content/uploads/2018/01/Digital-Influence-on-Telecom-Purchases.pdf>; Michael Zhang, *The Importance of Cameras in the Smartphone War*, PETAPIXEL (Feb. 12, 2015), <https://petapixel.com/2015/02/12/importance-cameras-smartphone-war>.

²⁴ Rysman, *supra* note 2, at 134.

²⁵ Examples include console video game systems (PlayStation, Xbox, Nintendo Switch), mobile operating systems (Android, Apple), desktop operating systems (Windows, MacOS, Linux), web browsers (Chrome, Safari, Firefox, Brave), travel search engines (Expedia, TripAdvisor, Kayak, Skyscanner), matchmakers (Match.com, eHarmony, OkCupid, Catholic Match), credit cards (Visa, MasterCard, American Express,

a large extent on the level of switching costs and the consumption or production costs incurred from using multiple products.²⁶ All else equal, lower switching costs will mitigate lock-in and facilitate migration to competing platforms or multi-homing. For example, in online advertising, if there are tools available to seamlessly run ad campaigns on more than one platform, then this will encourage the use of multiple systems. In contrast, if there are hinderances and incompatibilities between networks, then this could lead some advertisers to single-home on the leading platform. Even in this latter scenario, which involves higher costs to multi-home, the decision will also depend on the degree of user overlap, that is, consumer multi-homing and switching behavior.²⁷ Even if a particular site or platform has a significantly smaller user base, if that base is highly differentiated and cannot be easily reached on other platforms, then advertisers will have an incentive to multi-home.²⁸

Finally, the welfare implications of markets tipping to a dominant system, network, or platform are not always clear.²⁹ On the one hand, strong efficiencies arise

Discover), and ride sharing apps (Uber, Lyft, Wingz).

²⁶ For an extensive overview of switching costs, see Joseph Farrell & Paul Klemperer, *Coordination and Lock-In: Competition with Switching Costs and Network Effects* (May 2006) (unpublished manuscript), <https://escholarship.org/uc/item/9n26k7v1>.

²⁷ See, e.g., Attila Ambrus et al., *Either or Both Competition: A “Two-Sided” Theory of Advertising with Overlapping Viewerships*, 8 AM. ECON. J. 189, 190 (2016) (“[M]any contend that a distinguishing feature of online consumption is the users’ increased tendency to spread their attention across a wide array of outlets.”).

²⁸ *Id.* at 191 (“This implies in our model that outlets do not only care about the overall consumer demand level, as in existing models, but also about its *composition*, i.e., the fraction of exclusive versus overlapping consumers.” (emphasis in original)).

²⁹ See, e.g., Joseph Farrell & Garth Saloner, *Standardization and Variety*, 20 ECON. LETTERS 71, 71 (1986) (“... there can be multiple equilibria, and it is quite possible that one of them involves too much standardization.”); Angelique Augereau et al., *Coordination Versus Differentiation in a Standards War: 56K Modems*, 37 RAND J. ECON. 887, 888 (2006) (In discussing the 56K modem, the authors find that welfare would have been significantly improved if the various internet service providers (ISPs) had standardized on a single platform rather using multiple 56K modem platforms: “there was a benefit to coordinating ISPs and consumers on a single standard as quickly as possible, but market actors failed to quickly standardize.”); Chien-fu Chou & Oz Shy, *Network Effects Without Network Externalities*, 8 INT’L J. INDUS. ORG. 259, 270 (1990) (“More interestingly, it may happen that all consumers are worse off when the number of

from compatibility and interoperability as well as both demand-side and supply-side economies of scale.³⁰ On the other hand, costs arise from the loss of variety and potentially being locked into an inferior standard or product.³¹ Relatedly, the economics literature has not settled the question regarding which type of market structure leads to greater rates of innovation, *e.g.*, competition versus monopoly;³² it is largely this question that will ultimately determine the welfare consequences of markets where a dominant firm emerges with the benefits of network effects.³³

II. MULTISIDED PLATFORMS

In the previous section, we introduced the idea of multi-sided platforms in the context of defining indirect network effects, which inherently involve the relationship

brands increases since it makes each brand supported by a small variety of services.”); Simon P. Anderson & Stephen Coate, *Market Provision of Broadcasting: A Welfare Analysis*, 72 REV. ECON. STUD. 947, 965 (2005) (asking, in a theoretical examination of broadcast television markets: “What can be said about the normative implications of monopoly ownership? In contrast to standard markets, there is no presumption that monopoly ownership produces lower aggregate welfare.”).

³⁰ An example of these efficiencies is the continued importance of standard setting organizations (SSOs), which play a role in developing, supporting, and setting interoperability and performance standards for industries such as telecommunications, electronics, and the Internet. Fundamentally, SSOs are platforms that balance the interests of multiple groups, including those looking to implement technologies as well as those developing those technologies. See Joanna Tsai & Joshua D. Wright, *Standard Setting, Intellectual Property Rights, and the Role of Antitrust in Regulating Incomplete Contracts*, 80 ANTITRUST L.J. 157, 159–162 (2015). See also *infra* Section II.C.

³¹ Work by Liebowitz & Margolis questions whether standardization results in inferior outcomes, as some believed was true for the QWERTY keyboard and Sony’s Betamax standard for analog video cassettes. See Liebowitz & Margolis, *supra* note 12 (discussing the QWERTY keyboard); STAN J. LIEBOWITZ & STEPHEN E. MARGOLIS, WINNERS, LOSERS & MICROSOFT: COMPETITION AND ANTITRUST IN HIGH TECHNOLOGY 240 (1999) (“[M]arket failure ought to be a very specific and very worldly claim. Policymakers shouldn’t go about correcting markets until they have concrete proof that markets have failed. The abstract possibility of market failure is an inadequate basis for the making of real-world policy.”).

³² See, *e.g.*, Michael L. Katz & Howard A. Shelanski, *Mergers and Innovation*, 74 ANTITRUST L.J. 1, 16–27 (2007).

³³ Cf. Sarit Markovich, *Snowball: A Dynamic Oligopoly Model with Indirect Network Effects*, 32 J. ECON. DYNAMICS & CONTROL 909, 912 (2008) (“Standardization, however, is not necessarily bad for consumers. The high speed of innovation leading to standardization provides fast, quality growth within the industry as well as in related industries that produce substitute goods. Moreover, whenever we see standardization, there are incentives for more than one software firm to produce for the winning platform.”).

between various groups. In this section, we further explore the characteristics of multi-sided platforms and how they differ from single-sided markets.

A. Defining Platforms

What exactly is a multi-sided platform? There are various approaches to this question, and all provide important context. Professors David Evans and Richard Schmalensee offer a fairly comprehensive definition when they state that a platform “has (a) two or more groups of customers; (b) who need each other in some way; (c) but who cannot capture the value from their mutual attraction on their own; and (d) rely on the catalyst to facilitate value creating interactions between them.”³⁴ This definition highlights the role of a platform as catalyst, organizer, and matchmaker bringing together different groups so they can interact or exchange in some manner. Examples include shopping malls, eBay, and Amazon Marketplace. These physical and virtual marketplaces organize sellers in some fashion, whether in an attractive retail space with plentiful parking or online on a uniform network, with the goal of attracting consumers. While sellers could completely forego platforms and sell directly to consumers, the value of platforms is that they create a convenient mechanism for users to purchase goods and services.

In contrast, Professors Andrei Hagiu and Julian Wright offer a somewhat different definition: Platforms “enable direct interactions between” two or more groups where each group is “affiliated with the platform” in some manner (typically through platform-specific investments).³⁵ Their focus is more on the choice that a firm can make to either vertically integrate or use a multi-sided platform model.³⁶ One advantage of the Hagiu

³⁴ Davis S. Evans & Richard Schmalensee, *The Antitrust Analysis of Multi-Sided Platform Businesses* 7 (Nat’l Bureau of Econ. Research, Working Paper No. 18783, 2013), <https://www.nber.org/papers/w18783.pdf>.

³⁵ Andrei Hagiu & Julian Wright, *Multi-Sided Platforms*, 43 INT’L J. INDUS. ORG. 162, 163 (2015).

³⁶ In many respects, this echoes the seminal work of Professor Ronald Coase on central question of what constitutes a “firm” and its boundaries in relation to the larger market. See Ronald H. Coase, *The Nature of*

and Wright approach is the focus on distinguishing platforms based on the “direct” interactions between two or more groups; that is, each side maintains “control over the key terms of the interaction.”³⁷ The goal of their definition is to explicitly de-emphasize indirect network effects, as it could be argued that these network effects exist for single-sided markets such as retailers.³⁸

Finally, Professors Jean-Charles Rochet and Jean Tirole focus on the interrelated price structure between the various sides of a platform.³⁹ Specifically, Rochet and Tirole explain that “[t]he quest for ‘getting both sides on board’ makes no sense in a world in which only the total price for the end user interaction, and not its decomposition, matters.”⁴⁰ This finding, according to Rochet and Tirole, is what actually distinguishes a platform from a conventional single-sided market: “We define a two-sided market as one in which the volume of transactions between end-users depends on the structure and not only on the overall level of the fees charged by the platform.”⁴¹ An advantage of Rochet and Tirole’s definition is that it explicitly incorporates the platform’s incentive to ensure participation on both sides of the platform and their interrelated demands through cross-group effects.

the Firm, 4 *ECONOMICA* 386 (1937). See also Oliver E. Williamson, *The Vertical Integration of Production: Market Failure Considerations*, 61 *AM. ECON. REV.* 112 (1971); Oliver E. Williamson, *Transaction-Cost Economics: The Governance of Contractual Relations*, 22 *J.L. & ECON.* 233 (1979).

³⁷ Hagiwara & Wright, *supra* note 35, at 163.

³⁸ The idea is that, as there are more consumers at a retailer, then this creates a greater incentive for manufacturers to offer their products to a given retailer, such as Walmart—even though the manufacturers do not directly sell to consumers.

³⁹ See Jean-Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets*, 1 *J. EUR. ECON. ASS’N* 990 (2003); Jean-Charles Rochet & Jean Tirole, *Two-Sided Markets: A Progress Report*, 37 *RAND J. ECON.* 645 (2006). See also Mark Armstrong, *Competition in Two-Sided Markets*, 37 *RAND J. ECON.* 668 (2006). One of the earliest works on the importance of the structure of prices for “gatekeepers,” however, is Michael R. Baye & John Morgan, *Information Gatekeepers on the Internet and the Competitiveness of Homogeneous Product Markets*, 91 *AM. ECON. REV.* 454 (2001).

⁴⁰ Rochet & Tirole, *Platform Competition*, *supra* note 39, at 1018.

⁴¹ Rochet & Tirole, *Progress Report*, *supra* note 39, at 645.

Rochet and Tirole’s definition also explicitly acknowledges the importance of looking at both sides of a platform when examining its conduct. Otherwise, for instance, what might appear to be below cost pricing on one side—for example, the audience on ad platforms—is really just profit maximization based on the structure of prices to the various sides (that is, below cost pricing to the audience and above cost pricing to the advertisers).⁴²

While these various definitions emphasize different aspects of platforms, they are complementary and cumulatively inform our current understanding. What emerges is the importance of identifying the strength and direction of the cross-group effect(s) and the nature of the interaction or exchange that is facilitated by the platform. Further, the profit maximization of platforms explicitly involves the need to get two or more sides “on board” through pricing, design, and governance decisions. What also emerges is that these distinctions are not always crystal clear with bright lines distinguishing multi-sided platforms from single-sided markets. For example, Amazon’s business has both single-sided elements (such as when it vertically integrates into the production of various goods like the Kindle e-reader) and multi-sided elements (such as Amazon Marketplace, which is the program that allows third-party sellers to use the Amazon platform).⁴³ We will return to how to reconcile these tensions in *infra* Section II.B.

More than a definition, platforms are business models. Take for instance ride-sharing platforms and taxis. Both Uber and taxis perform the same basic function—transporting passengers—albeit with different features; thus, they are differentiated

⁴² See, e.g., Attila Ambrus & Rossella Argenziano, *Asymmetric Networks in Two-Sided Markets*, 1 AM. ECON. J.: MICROECONOMICS 17, 18 (2009) (“The cheap side of a network, which can even be subsidized and therefore generate loss, is used to create a large enough consumer base that makes it attractive for consumers on the other side of the market to join the network.”).

⁴³ Further, this balance between single-sided and multi-sided aspects of Amazon’s business has changed over time. In 1999, 3% of Amazon sales were from 3rd party sellers; in 2018, it was 58%. See Adam Levy, *Amazon’s Third-Party Sales Are Exploding*, MOTLEY FOOL (Apr. 13, 2019, 9:17 AM), <https://www.fool.com/investing/2019/04/13/amazons-third-party-sales-are-exploding.aspx>.

economic substitutes from the passengers' perspective.⁴⁴ Yet Uber is a multi-sided platform while taxis are vertically integrated single-sided firms. Similarly, credit cards, personal checks, and cash are all methods of payment for goods and services. Each has its advantages and disadvantages, but they all ultimately serve the same purpose even though credit cards are platforms, while banks issuing personal checks are not.⁴⁵

B. Are there Platform Sub-Categories?

As platforms are business models, the monetization strategy can vary depending on the specific type of platform. Contrast, for instance, Ticketmaster, Etsy, and Amazon Marketplace, which all primarily monetize through transaction fees, with Facebook, Google Search, and YouTube, which all primarily monetize through advertising revenue. Even comparable platforms, such as Apple's iOS and Google's Android, monetize differently. Apple has vertically integrated its software with hardware, which represents a significant portion of Apple's revenue from iOS.⁴⁶ For Google, Android represents a key distribution channel for its complementary services including Google Search and YouTube (and, in turn, their advertising revenues).⁴⁷ But both Apple and Google also monetize through fees based on transactions in the App Store and Google Play, respectively.

⁴⁴ See Abel Brodeur & Kerry Nield, *An Empirical Analysis of Taxi, Lyft and Uber Rides: Evidence from Weather Shocks in NYC*, 152 J. ECON. BEHAVIOR & ORG. 1, 2 (2018) ("... we use data for all trips taken in NYC taxi cabs before (January 2010–April 2011) and after (2014–2016) Uber and Lyft's rise in popularity, and show that the number of taxi rides per hour decreased by approximately 25% after Uber entered the New York market in May 2011."); see also *id.* at 14 ("[T]he results are consistent with a substitution from taxi rides to Uber and Lyft rides ...").

⁴⁵ This is not to say they are in the same antitrust relevant market, which is a specific legal and economic construct based on narrowing the field of analysis to capture the most important and relevant competitive interactions that explain the conduct in question.

⁴⁶ See Christina Bonnington, *Apple's Profit Machine*, SLATE (Feb. 01, 2018, 5:52 AM), <https://slate.com/technology/2018/02/apples-app-store-is-becoming-a-major-revenue-source-for-apple.html>.

⁴⁷ Kamil Franek, *How Google Makes Money from Android: Business Model Explained*, KAMIL FRANEK BUS. ANALYTICS (Jan. 14, 2020), <https://www.kamilfrank.com/how-google-makes-money-from-android>.

These distinct methods of monetization beg the question of whether or not there are identifiable platform sub-categories that can help guide antitrust analysis. In an early classification scheme, Professor David Evans proposed three sub-categories: (1) “market-makers,” (2) “audience-makers,” and (3) “demand-coordinators.”⁴⁸ Market-makers “enable members of distinct groups to transact with each other,” such as, shopping malls, eBay, Nasdaq, and dating services.⁴⁹ Audience-makers “match advertisers to audiences,”⁵⁰ such as, newspapers, broadcast television, and magazines. Finally, demand-coordinators “do not strictly sell ‘transactions’ like a market maker or ‘messages’ like an audience-maker; they are a residual category much like irregular verbs.”⁵¹ Examples given include operating systems, credit cards, and video game consoles.

Specifically in the context of antitrust analyses, Filistrucchi et al. propose making a distinction between “non-transaction” and “transaction” platforms.⁵² Citing Filistrucchi et al., the Supreme Court made this same distinction in *Ohio v. American Express*,⁵³ according it more prominence in platform classification discussions. Non-transaction platforms, as the name implies, “are characterized by the absence of a transaction between the two sides of the market.”⁵⁴ This is effectively equivalent to Evans’ “audience-makers.” In contrast, transaction platforms “such as payment cards, are instead characterized by the presence and observability of a transaction between the two groups of platform users.”⁵⁵ In terms of Evans’ classification scheme, a transaction platform is

⁴⁸ David S. Evans, *The Antitrust Economics of Multi-Sided Platform Markets*, 20 YALE J. ON REG. 320, 334–35 (2003).

⁴⁹ *Id.* at 334.

⁵⁰ *Id.* at 335.

⁵¹ *Id.*

⁵² Lapo Filistrucchi et al., *Market Definition in Two-Sided Markets: Theory and Practice*, 10 J. COMPETITION L. & ECON. 293, 297–300 (2014).

⁵³ *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2286–87 (2018).

⁵⁴ Filistrucchi et al., *supra* note 52, at 298.

⁵⁵ *Id.*

something of a mix between “market-makers” and “demand-coordinators.”

While the Evans and Filistrucchi et al. schemes do not perfectly align, we find value in combining the two. The term “transaction” platform is fairly descriptive and encompasses platforms that facilitate an actual market transaction or exchange (and not merely an interaction through advertisements) between buyers and sellers. This would include ride sharing apps (Uber, Lyft), house rental apps (Airbnb, Vrbo), physical marketplaces (shopping malls, auction houses), virtual marketplaces (eBay, Etsy, Amazon Marketplace), and credit cards (Visa, American Express). In all of these examples, the platforms monetize at least in part through fees to join the platform and/or transaction fees. Transaction platforms also involve bi-directional cross-group effects, as the two sides or groups must be explicitly attracted to each other in some manner, or there is nothing to exchange. Further, given that the two sides of the platform are buyers and sellers, their interaction produces a common output through that exchange.

What about operating systems (Windows, MacOS, iOS, Android), gaming consoles (Nintendo Switch, Xbox, PlayStation), and web browsers (Chrome, Safari, Firefox)? The nature of these platforms is somewhat different than transaction platforms—while sharing some similarities. For instance, Windows creates a uniform, standardized system for hardware and software suppliers, which are complements, so they can sell compatible products to end-users. It is only after exercising this role as coordinator that Windows, in a sense, facilitates the exchange between hardware/software sellers and buyers. Notably, platforms can exist within platforms: Android has a uniform standard so that various complementary groups can coordinate, but it also has Google Play, which functions as a transaction platform bringing together app developers and users. In these examples, given the importance of coordination, we find Evans’ “demand-coordinator” label to be particularly fitting.

A somewhat unconventional example of demand coordinating platforms is standard-setting organizations (SSOs). SSOs play a crucial role in developing,

supporting, and setting interoperability and performance standards.⁵⁶ There are hundreds of SSOs across a range of industries including telecommunications, electronics, and the Internet.⁵⁷ Fundamentally, SSOs are economic platforms. They act as a facilitator between innovators and implementers that results in increased levels of exchange, and, ultimately, increased gains from trade and enhanced rates of innovation.⁵⁸ In order to establish a successful platform, an SSO must implement policies and governance that attract both innovators and implementers. SSOs seek this balance due to oft-conflicting incentives between their participating groups.⁵⁹

Finally, we have “non-transaction” platforms, which align with Evans’ “audience-maker” categorization. This basically includes all ad-supported platforms, where the facilitation is not an exchange per se, but rather an interaction. The interaction might be observable, such as when a user clicks on an ad, or unobservable, such as when a user views an ad but does not interact in any measurable way.⁶⁰

We ultimately propose these categories, not as “all or nothing” groupings, but

⁵⁶ See, e.g., U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 33 n.1 (2007), <http://www.ftc.gov/reports/innovation/P040101PromotingInnovationandCompetitionrpt0704.pdf> (citing Gregory Tasse, *Standardization in Technology-Based Markets*, 29 RES. POL’Y 587, 589–90 (2000)).

⁵⁷ See, for example, *Standard Settings Organizations and Standards List*, CONSORTIUMINFO.ORG, <http://www.consortiuminfo.org/links/> (last visited Jul. 27, 2020), for a list of SSOs and standards in a variety of fields. Some prominent examples are the Institute of Electrical and Electronics Engineers (IEEE), which develops standards for telecommunications, information technology, and power generation; the European Telecommunications Standards Institute (ETSI); and the American National Standards Institute (ANSI).

⁵⁸ The terms “innovators” and “implementers” are simply shorthand to highlight the different natures of the two sides that are attracted to an SSO. It is not to suggest that those who seek to have their intellectual property become standardized are not also implementers in other contexts—nor that those who seek to implement the standard are not innovators in their own right.

⁵⁹ Innovators are interested in protecting their intellectual property rights, having their technology widely adopted, and receiving a sufficient return on their investment. Implementers are interested in access to the latest technology, assurance that an adopted technology will be widely implemented (and thus avoiding lock-in with the wrong technology—colloquially, “betting on the wrong horse”), and paying reasonable royalties. SSOs implement policies to balance these interests as they seek to increase the size of both groups.

⁶⁰ The observability of an ad interaction is a technological limitation. For instance, cameras conceivably could follow the eyes of a user and reliably determine whether an ad has been viewed on a website.

more as platform “modules” that a business can stack on top of, or next to, each other. In this sense, we can also include single-sided products as a module. This observation that businesses are more a composite of modules rather than a specific type of platform solves a number of tensions when trying to categorize them. Take for instance credit cards. While in the above exposition, we included them as an example of a transaction platform, credit cards also play a standard-setting-like role in putting merchants and cardholders all on the same network so they can seamlessly transact.⁶¹ Additionally, unlike something like Uber, a credit card does not explicitly match a specific buyer and a specific seller. It is more of a host that enables, and then benefits if and when an exchange occurs—similar to shopping malls and virtual marketplaces. Perhaps this is why Evans originally categorized credit cards as demand-coordinators,⁶² whereas Filistrucchi et al. considers them transaction platforms.⁶³ Similarly, operating systems primarily play a coordinating role, but they subsequently facilitate, and benefit from, exchanges on their platform. For example, Microsoft collects a transaction fee for software sales through its online Microsoft Store.⁶⁴ Again, these complexities might explain why Filistrucchi et al. use operating systems as an example of a transaction platform,⁶⁵ whereas Evans considers them demand-coordinators.⁶⁶ The answer is that operating systems such as Windows are both transaction and demand-coordinating platforms. The same could be said of managed care organizations (MCOs) that create a network of hospital providers and patients, which ultimately results in a market exchange. These are all examples of businesses that “stack” a number of different platform modules rather than conform

⁶¹ The same could be said for stock exchanges such as the Nasdaq and NYSE.

⁶² Evans, *supra* note 48, at 335.

⁶³ Filistrucchi et al., *supra* note 52, at 298–99.

⁶⁴ See, e.g., Codrut Neagu, *8 Ways in Which Microsoft Makes Money From Windows 10*, DIGITAL CITIZEN (Jun. 20, 2019), <https://www.digitalcitizen.life/how-microsoft-makes-money-windows-10>.

⁶⁵ Filistrucchi et al., *supra* note 52, at 298 n 12.

⁶⁶ Evans, *supra* note 48, at 335.

neatly to one category or another.

In the following table, we summarize a classification scheme based on modules and how platforms can be a mix of these modules. The benefit of this modular approach is that it harmonizes two proposed schemes in the literature and highlights the actual complexity of businesses that involve platform services. Otherwise, there is a potential danger in pigeonholing a platform into one category or another. This is particularly relevant in antitrust, where precedents have formed around specific types of platforms.⁶⁷

Table 1: Different Modules that Can Comprise a Business Involving Platform Services

MODULE	FACILITATES	CROSS-GROUP EFFECTS	EXAMPLES
Single-Sided	n/a	n/a	supermarkets, taxi cabs, intermediate goods, insurance, auto repair, streaming video subscriptions, streaming music subscriptions
Multi-Sided - Transaction	Transactional Exchange	Bi-Directional	ride sharing apps, credit cards, app stores, online marketplaces, shopping malls
Multi-Sided - Non-Transaction	Interaction via Advertisement	Uni-Directional	newspapers, yellow pages, broadcast television, search engines, streaming music w/ ads
Multi-Sided - Demand Coordination	Standardization & Coordination on a Network	Bi-Directional	credit cards, operating systems, gaming consoles, SSOs

There is also variation within a module. Consider Google Search and Facebook,

⁶⁷ This is the case in *Ohio v. American Express*, where the Court categorized credit cards as a transaction platform. See 138 S. Ct. at 2279–90. The plethora of commentary on the case, from both sides of the debate, all place the transaction versus non-transaction distinction at the forefront of the discussion. See, e.g., Michael L. Katz, *Ohio v. American Express: Assessing the Threat to Antitrust Enforcement*, CPI ANTITRUST CHRON. (Jun. 2020, at 11); Joshua D. Wright & John M. Yun, *Ohio v. American Express: Implications for Non-Transaction Multisided Platforms*, CPI ANTITRUST CHRON. (Jun. 2019, at 29).

which are generally categorized as prototypical non-transaction platforms. Both offer attractive content to users, offer a zero-price, and monetize through advertisements. Yet, a closer look reveals that Facebook creates direct network effects (on the user side), while Google Search does not.⁶⁸ This tells us that Google is primarily responsible for providing the content that attracts users to its search platform, while Facebook can rely on the presence of users and the content they provide. In the following section, we dig deeper into these non-transaction, zero-price platforms and the incentive effects created by the competition for audience attention.

In sum, while there are important distinctions between platforms that warrant some type of classification scheme, there are also some strong commonalities that should not be overlooked. Regardless of the type of platform, indirect network effects play a central role and the structure of prices across all groups is central to a platform's profit maximization. This recognition should impact considerations of defining the relevant product market and assessing competitive effects, which we further explore in Section IV.⁶⁹

III. ASSESSING PLATFORMS: ZERO-PRICE PLATFORMS & ATTENTION MARKETS⁷⁰

Zero-price platforms, such as Google Search and Facebook, are a particular focus of digital reports and scholarship⁷¹ and, consequently, antitrust scrutiny. In this section,

⁶⁸ For a more in-depth discussion of the differing network effects between Facebook and Google Search, see John M. Yun, *Does Antitrust Have Digital Blind Spots?*, 72 S.C. L. REV. (forthcoming 2020).

⁶⁹ See, e.g., Gunnar Niels, *Transaction Versus Non-Transaction Platforms: A False Dichotomy in Two-Sided Market Definition*, 15 J. COMPETITION L. & ECON. 327, 330 (2019) ("The notion that both sides matter for market definition is correct, but is unduly restricted to transaction platforms. Both sides matter for market definition for non-transaction platforms as well.").

⁷⁰ This section builds on John M. Yun, *Characteristics of "Zero Price" Markets*, THE PRICE POINT, ABA Antitrust Section Price Conduct Committee (forthcoming 2020).

⁷¹ See, e.g., Stigler Report, *supra* note 17, at 61 ("Facebook, Google, and, increasingly, Amazon act as gatekeepers to the online advertising market."); AUSTL. COMPETITION & CONSUMER COMM'N, DIGITAL PLATFORMS INQUIRY, FINAL REPORT 1 (2019), <https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf> ("The ubiquity of the Google and Facebook

we delve deeper into whether or not user access is actually “free” for these platforms and, if not, what exactly is being exchanged. Additionally, we examine the idea of “attention markets,” which has implications for both defining the relevant product market and competitive effects analyses.

A. Are Users Exchanging Data for Platform Access?

One belief is that we are exchanging ourselves, or our data, for access to ad-supported platforms.⁷² In effect, we are giving up some of our privacy. This has led to proclamations that “you are the product” or “when it is free, the product is me.” Holding aside the normative considerations of this exchange, is this the full story? If not, what is the precise exchange between users and platforms?

While there is a superficial appeal to the above characterization, it is sufficiently imprecise that it can lead to poor intuition. Normally, when we assess markets, we consider an exchange involving a positive price, which is the “cost” of purchasing the good or service from the perspective of consumers. In turn, the price that a firm receives, that is, revenue, is used to fund its operations including distributing the product, paying workers, and renting capital. Revenues can also be used to fund innovations and improve future iterations of the product.

For zero-price platforms, the benefit of the exchange originates from two sources—both the users and advertisers. The data collected from users must offer some benefit to platforms; otherwise, they would not bother to incur the costs involved with collecting

platforms has placed them in a privileged position. They act as gateways to reaching Australian consumers”); [UK] DIG. COMPETITION EXPERT PANEL, UNLOCKING DIGITAL COMPETITION 28 (2019), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf [hereinafter “Furman Report”] (“This dominance in digital advertising revenues is linked to the dominance of these two companies in the attention market. In the UK, internet users spend over a third of their time online on sites owned by Google and Facebook.”).

⁷² See, e.g., Furman Report, *supra* note 71, at 22 (“For services funded through advertising, consumers will pay through provision of their data—which has value to advertisers and developers of new services.”).

and storing the data. But what is that benefit? Second, and more straightforward, platforms earn revenue by charging a positive price to advertisers. Thus, the first point is that platforms are obviously not ultimately a zero-price enterprise. They clearly earn revenue from advertisers who value the prospect of interacting with the platform's audience. How do you attract an audience so you can monetize the advertisers? It is through attention-grabbing content, which is the second point. For search engines, this takes the form of relevant search results; for social networks, the value is derived from the ability to connect with others and "consume" the content they provide, whether in the form of messages, public posts, or uploaded videos.

Yet delivering content requires data. For a search engine, this includes data on what you are searching for, what others have searched for, and what you and others have found "relevant" through revealed behavior. In this context, platforms can use data in a very different way than revenue derived from a positive price.⁷³ Specifically, data can be used to improve the quality of the service for the various groups who participate on the platform. For users, it results in a more curated experience.⁷⁴ For advertisers and users, it results in better targeted ads.

Of course, some disutility can arise from having one's data collected. This disutility is a consideration that users make when considering whether or not to be on a platform or how much they wish to interact on the platform.⁷⁵ Yet, it is important to consider privacy—not so much about not wanting to give up data—but as the control of

⁷³ Of course, data could also be sold to third parties for revenue, which would move data closer to a "price" for platform access.

⁷⁴ For example, YouTube's recommendations, Facebook's News Feeds, and Spotify's Discover Weekly are features intended to tailor to specific users' tastes.

⁷⁵ For more on the welfare consequences of the use of data on consumer welfare in the context of online platforms, see, for example, Michael R. Baye & David E.M. Sappington, *Revealing Transactions Data to Third Parties: Implications of Privacy Regimes for Welfare in Online Markets*, 29 J. ECON. MGMT. STRATEGY 260 (2020).

data.⁷⁶ This is where consumer disclosure is part of the assessment of consumer welfare—as well as the associated ability to control what and how the data is used. All else equal, privacy and data collection policies that are transparent, accessible, and easily understood will lead to better outcomes where consumers can make informed choices. On net, consumers are implicitly weighing the utility from more relevant content with the disutility of sharing data.

Thus, if users are not strictly “exchanging” data for access to the platform, then what exactly are they exchanging? For ad-supported platforms, users are exchanging some, but not all, of their attention for access to the content provided.⁷⁷ Particularly for online search, ads can serve as a substitute for non-sponsored content. It stands to reason that there must be some aggregate interaction with the ads, otherwise, there would be no viable attention market as advertisers would have no demand for consumers’ attention.

In sum, zero-price platforms have a positive “shadow price”⁷⁸ in the form of users providing some of their attention while on the platform as well as information about themselves while using the platform.⁷⁹ Yet this shadow price must net out the benefits that users derive from a platform’s use of their data, as a percentage of users—perhaps the majority—are willing to opt-into a platform using at least some of their data if this results in a more personalized and higher quality service.⁸⁰ This netting out process tells

⁷⁶ See, e.g., Alessandro Acquisti et al., *The Economics of Privacy*, 54 J. ECON. LITERATURE 442, 444–48 (2016).

⁷⁷ Inevitably, there will be a distribution of users where some are completely repelled by ads while others are more open to them.

⁷⁸ A shadow price is the true opportunity cost of an activity—particularly where there is no explicit market price. See, e.g., David A. Starrett, *Shadow Pricing in Economics*, 3 ECOSYSTEMS 16, 16 (2000).

⁷⁹ Platforms conceivably could also use data about users gathered outside of the platform. This would be the case for platforms that buy or collect third-party data. The welfare implications of this practice would seem strongly linked to the level of data aggregation, user control or consent, and disclosure policies.

⁸⁰ For an examination of the welfare effects of opt-in or opt-out policies, see, e.g., Baye & Sappington, *supra* note 75, at 268–69; James Campbell et al., *Privacy Regulation and Market Structure*, 24 J. ECON. MGMT. STRATEGY 47, 67–68 (2015); Jian Jia et al., *The Short-Run Effects of GDPR on Technology Venture Investment* (manuscript at 8–23) (May 22, 2020), <https://ssrn.com/abstract=3278912>.

us that wholesale statements such as “paying with data” are wanting, as some users would willingly provide the data; although for more privacy minded users, the characterization is more on point. What is universal across users, however, is that they are the audience for advertisers, which, depending on the circumstance, might or might not be welcome.

B. What are Attention Markets?

In a given year, Americans spend more time consuming ad-supported media than they do working.⁸¹ Given the importance of attention, for both content and advertisements, some scholars have suggested the explicit recognition of “attention markets” in the context of antitrust assessments of various platform conduct.⁸² The idea is that relevant product market considerations should not necessarily be limited to, for instance, questions regarding whether Facebook and YouTube share similar functional attributes. Rather, do consumers consider these two differentiated social networks to be close enough substitutes, based on their fungible attention, to influence these platforms’ competitive incentives? It is the recognition that Facebook and YouTube are competing, at least on some dimensions, for people’s time.⁸³

Taking a step back, what are we trying to accomplish with relevant product markets and competitive effects analyses? The goal is to understand the nature of competition and the incentives a firm faces in terms of pricing, output, quality, and

⁸¹ See David S. Evans, *The Economics of Attention Markets* 2 (Apr. 15, 2020) (unpublished manuscript), <https://ssrn.com/abstract=3044858>, (“In 2019, Americans adults will spend 514 billion hours during which they will engage mainly with content interspersed with ads compared to 325 billion hours working.”).

⁸² See David S. Evans, *Attention Rivalry Among Online Platforms*, 9 J. COMPETITION L. & ECON. 313, 330–38 (2013). See also Tim Wu, *THE ATTENTION MERCHANTS: THE EPIC SCRAMBLE TO GET INSIDE OUR HEADS* (2016) (discussing the longstanding competition among firms for consumer attention).

⁸³ Before the rise of the Internet and associated services, broadcast television was the primary ad-supported platform through which households engaged in leisure. See Kevin M. Murphy & Ignacio Palacios-Huerta, *A Theory of Bundling Advertisements in Media Markets* 2–4 (Nat’l Bureau of Econ. Research, Working Paper No. 22994, 2016), <https://www.nber.org/papers/w22994.pdf>.

innovation. Functional interchangeability might address this question as long as it represents a good proxy for consumer demand. Yet, generally speaking, functional attributes can only take us so far. For instance, is tap water in the same relevant market as spring water? Maybe—it depends on the specific nature of the demand being examined (including the time and place). Are battery-powered toothbrushes in the same relevant market as manual toothbrushes? Both clean teeth. Obviously, the true test is revealed consumer behavior including the diversion between various categories and products when consumers migrate—whether it is due to a price change, new entry/exit, or quality change.

In the same way, focusing solely on functional overlaps can lead to an excessively narrow view of competition for household attention. For instance, does Disney+ compete with Netflix, YouTube, and Facebook? While “compete,” in antitrust, is a technical consideration, these services may possibly be sufficiently close substitutes for some households in some settings. In other settings and contexts, these services could be very distant substitutes. The point is that, if we recognize this competition for attention, then it expands the possible boundaries to consider competitive effects. For instance, whatever one’s view of Facebook’s acquisition of Instagram back in 2012, limiting the analysis to whether Instagram is more about pictures and Facebook is more about words is not a particularly a good approach.

Relatedly, to illustrate the idea of very different functional products exhibiting some degree of substitution for attention, Evans shows how the composition of the top 50 U.S. websites has changed dramatically between 2002, 2007, and 2012.⁸⁴ Holding aside issues of relevant antitrust markets—these results show how very different sites can compete for users’ attention. Similarly, Boik et al. find that “[b]etween 2008 and 2013” —

⁸⁴ See Evans, *supra* note 82, at 319 (Table 1). Relatedly, Evans shows that time spent on discrete website categories has changed as well. See *id.* at 325 (Table 4).

a time of notable growth in online activity—“households substitute online categories such as chat and news for social media and video.”⁸⁵ Further, “even if many households shifted their attention to more sites with video offerings, which tend to demand more time, it appears these shifts are at the expense of attention at other sites, at which the household was already spending significant time.”⁸⁶

Recognizing that platforms are competing for attention also leads to the point that platforms are trying to grab “use” as well as “users.” For instance, it is conceivable that a platform would rather have 10 users using the service for 100 minutes a week rather than 100 users using it for 1 minute a week.⁸⁷ Why does this distinction matter? It gets at the incentives to compete and innovate. Even if a leading platform has saturated the market in terms of its user base, this does not mean the platform’s incentive is then to simply “harvest” their rents and stop innovating or introducing new features. The intensity of use could still be contestable.⁸⁸ If so, then this suggests that platforms, including those with large market shares, have an incentive to continue to compete for attention through the development of new features, improvements, and content.

If we focus solely on the number of users, however, it might lead to the conclusion that very little of a particular market is contestable. Under this paradigm, when we see large platforms such as Google and Facebook introduce complementary products or

⁸⁵ Andre Boik et al., *The Empirical Economics of Online Attention* 3 (Nat’l Bureau of Econ. Research, Working Paper No. 22427, 2016), <https://www.nber.org/papers/w22427.pdf>. See also *id.* at 4 (“Reallocation of online attention comes almost entirely in the form of changes in how households select from a portfolio of different web sites, but not in the form of changes in total time or breadth and depth.”).

⁸⁶ *Id.* at 31.

⁸⁷ For instance, when Google shutdown its Google+ social network, Google detailed that Google+ “has low usage and engagement: 90 percent of Google+ user sessions are less than five seconds.” See Ben Smith, *Project Strobe: Protecting your data, improving our third-party APIs, and sunseting consumer Google+*, GOOGLE BLOG (Oct. 8, 2018), <https://www.blog.google/technology/safety-security/project-strobe>.

⁸⁸ We use “contestable” in the sense that firms must still compete for consumers’ attention even if a market is concentrated. We are not invoking a particular competitive model that assumes zero barriers to entry and exit. See WILLIAM J. BAUMOL ET AL., *CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE* (1982).

features, we might be more inclined to take a skeptical view. Are these platforms trying to leverage their market power into adjacent markets in order to protect their core monopoly products while reducing overall welfare? They might be. Yet, if we consider use, as well as users, then there is at least a recognition that platforms have some procompetitive incentives to continue to compete for attention. Again, this is not to suggest that anticompetitive motives and conduct cannot arise in markets with large ad-supported platforms.

To further illustrate the point, consider credit cards. The average cardholder has four credit cards.⁸⁹ Yet each cardholder also likely has a favorite card for most types of purchases. Thus, credit card networks are still competing for cardholder use even though they are already “in your wallet.” In some ways, the competition is just beginning once a cardholder adopts a card.⁹⁰

IV. PLATFORMS AND ANTITRUST ANALYSIS⁹¹

In this final section, we explicitly explore what impact the presence of multi-sided platforms should play in antitrust analyses. There are questions about defining the relevant product market as well as conducting competitive effects analysis. How do platforms fit into the multi-step rule of reason framework? There are no easy answers. Rather, the answer, as is often the case, is that it depends.

Within this context, the Supreme Court was recently asked to decide on the appropriate antitrust framework to apply to markets involving platforms, including (1)

⁸⁹ See BUREAU OF CONSUMER FINANCIAL PROTECTION, THE CONSUMER CREDIT CARD MARKET 35 (2019), https://files.consumerfinance.gov/f/documents/cfpb_consumer-credit-card-market-report_2019.pdf (Figure 7).

⁹⁰ For more on the competitive interactions between credit card networks, see, e.g., Todd J. Zywicki, *The Economics of Credit Cards*, 3 CHAP. L. REV. 79, 110–45 (2000); Curtis R. Taylor, *Supplier Surfing: Competition and Consumer Behavior in Subscription Markets*, 34 RAND J. ECON. 223, 223–26 (2003); Benjamin Klein et al., *Competition in Two-Sided Markets: The Antitrust Economics of Payment Card Interchange Fees*, 73 ANTITRUST L.J. 571, 571–614 (2006).

⁹¹ This section includes excerpts from Wright & Yun, *supra* note 67.

whether each side of a platform constitutes a separate relevant product market for the purposes of antitrust analysis and (2) what evidence is required to satisfy a plaintiff's *prima facie* burden under the rule of reason in the context of platforms.⁹² Two primary schools of thought have developed around these questions. While each school appears to agree in principle upon the relevant economic considerations in evaluating the competitive effects of conduct in multisided platforms, there are critical differences between the two schools when it comes to how courts and agencies should structure and sequence their analysis.

The first school argues that platforms should be assessed in a manner similar to single-sided markets in that each side should, ultimately, be considered separately—which we can label as the “separate markets” approach.⁹³ Further, harm to a group of consumers on one side of a platform should be sufficient to dispel the plaintiff's *prima facie* burden and, without more, establish an antitrust violation. We can label this as the “separate effects” approach, as it finds that any effect that makes a group worse off somewhere on a platform—for example, a price increase to merchants—is generally sufficient to show antitrust harm.⁹⁴ Thus, countervailing welfare gains for consumers on the other side of a platform would only be considered a “defense,” and defendants would bear the burden of proof to establish that resulting efficiencies outweigh harm to the first group.

⁹² *Am. Express Co.*, 138 S. Ct. at 2285–90.

⁹³ See, e.g., Michael Katz & Jonathan Sallet, *Multisided Platforms and Antitrust Enforcement*, 127 YALE L.J. 2142, 2161–69 (2018); Brief for John M. Conner et al. as Amici Curiae Supporting Petitioners at 5–12, *Ohio v. Am. Express Co.*, 138 S. Ct. 2274 (2018) (No. 16-1454); Brief of 28 Professors of Antitrust Law as Amici Curiae Supporting Petitioners at 17–34, *Ohio v. Am. Express Co.*, 138 S. Ct. 2274 (2018) (No. 16-1454). There is a general recognition, however, that cross-group effects must still be considered, to some degree, even if separate markets are defined. See, e.g., Katz & Sallet at 2150–51, 2157–60. For a detailed overview of the two schools of thought, see Joshua D. Wright & John M. Yun, *Burdens and Balancing in Multisided Markets: The First Principles Approach of Ohio v. American Express*, 54 REV. INDUS. ORG. 717 (2019).

⁹⁴ Cf. Brief of 28 Professors, *supra* note 93, at 14.

In contrast, the second school of thought argues that platforms are inherently defined by the interrelationships between their various sides and thus, product market definitions should generally include all sides of a platform. Thus, courts and agencies must explicitly consider cross-group effects when defining markets.⁹⁵ We can label this as the “integrated market” approach. For instance, American Express would be considered a platform that operates in a single product market.⁹⁶ Given this integrated market definition, it follows that finding harm to one side of a platform is insufficient to meet the *prima facie* burden and a proper competitive effects analysis must jointly consider all sides of a platform—which we can label as the “integrated effects” approach. This approach does not simply treat the other side of a platform as a potential consideration for an efficiencies defense, capable of rebutting a showing of harm, but rather as a fundamental part of determining whether there is competitive harm of the type proscribed by the antitrust laws—that is, the acquisition or exercise of monopoly power—in the first place.

The stakes between the two schools of thought, as it relates to competitive effects and the *prima facie* burden, are high. Central to the issue of liability in rule-of-reason cases is the idea of “harm to competition.” It is well understood that harm to a specific group of consumers does not necessarily establish cognizable antitrust harm. For instance, price discrimination harms some groups of consumers but benefits others—yet, it is generally not the type of conduct that results in a restriction of market output and an increase in market price.⁹⁷ Another example would be an efficient merger that drives out a less-

⁹⁵ See, e.g., James D. Ratliff & Daniel L. Rubinfeld, *Is There a Market for Organic Search Engine Results and Can Their Manipulation Give Rise to Antitrust Liability?*, 10 J. COMPETITION L. & ECON. 517, 534–38 (2014); Patrick R. Ward, *Testing for Multisided Platform Effects in Antitrust Market Definition*, 84 U. CHI. L. REV. 2059 (2017); Brief for Amici Curiae Prof. David S. Evans & Prof. Richard Schmalensee in Support of Respondents at 8–27, *Ohio v. Am. Express Co.* (2018) (No. 16-1454); Brief for Amici Curiae J. Gregory Sidak & Robert D. Willig in Support of Respondents at 14–21, *Ohio v. Am. Express Co.* (2018) (No. 16-1454).

⁹⁶ See Brief for Amici Curiae Sidak & Willig, *supra* note 95, at 14–21.

⁹⁷ See Benjamin Klein, *Market Power in Aftermarkets*, 17 MANAGERIAL & DECISION ECON. 143, 155 (1996)

efficient rival. In this case, consumers who preferred the differentiated product of the rival would be worse-off—although consumers, as a whole, are better off.⁹⁸ Thus, it is not extraordinary that decisions in competitive markets harm some groups of consumers but benefit others. Indeed, product differentiation is a fundamental feature of competition. Consequently, the focus of antitrust laws is to condemn conduct that improperly creates or maintains monopoly power. It is, thus, critical to make a distinction between harm to a group of consumers and “competitive harm” or “anticompetitive effects” cognizable by the antitrust laws. This is particularly relevant for multisided markets where there are two or more distinct group of consumers.

Within this setting, the Supreme Court in *Ohio v. American Express* endorsed the integrated market and integrated effects approach—as it applies to transaction platforms. The Court writes, “[C]redit-card networks are best understood as supplying only one product—the transaction—that is jointly consumed by a cardholder and a merchant. Accordingly, the two-sided market for credit-card transactions should be analyzed as a whole.”⁹⁹ Thus, “[i]n two-sided transaction markets, only one market should be defined.”¹⁰⁰ Moreover, “[e]vidence of a price increase on one side of a two-sided transaction platform cannot, by itself, demonstrate an anticompetitive exercise of market power.”¹⁰¹

However, the Court did not fully address whether the principles underlying its

(“[M]arket power is not necessary for a firm to successfully engage in discriminatory pricing. All that is necessary is that the firm face a negatively sloped demand for its products, as all firms selling unique products do. Although such a negatively sloped demand and ability to price discriminate would not exist under the assumptions of perfect competition, it must be distinguished from the negatively sloped demand and ability to price discriminate that is present because a firm possesses a large share of the market.”).

⁹⁸ See Ken Heyer, *Welfare Standards and Merger Analysis: Why Not the Best?*, 8 COMPETITION POL’Y INT’L 146, 155 (2012).

⁹⁹ *Am. Express Co.*, 138 S. Ct. at 2278.

¹⁰⁰ *Id.* at 2287 (citing to Filistrucchi et al., *supra* note 52, at 302).

¹⁰¹ *Id.* at 2278.

analysis apply—and if so, to what extent—to what it describes as “non-transaction platforms.” This gap in the Court’s decision has not gone unnoticed, with observers offering speculations and conjectures as to the impact of the case on non-transaction platforms, such as Google and Facebook, in the future.¹⁰² Various academic scholarship has begun to emerge on this question.¹⁰³

The point of this discussion is to highlight the current legal and economic debates regarding the treatment of platforms in antitrust. In this context, it is clear that features of platforms, namely its role as an intermediary bringing different groups together, who themselves have very different incentives, can create real questions as to how to administer the rule of reason framework. Are benefits to one side an efficiency defense to harms to the other side or part of the initial assessment of antitrust harm? Further, can we, in certain matters, focus only on one side of a platform—such as on advertisers when the allegation is that platforms are using exclusive contracts in a manner that reduces competition and welfare? These are not easy questions. There are reasonable points made on both sides. Ultimately, what is needed, however, is to start from the premise that we must first understand the incentives that platforms face and go from there.

CONCLUSION

Network effects and platforms are integral to every discussion of digital markets. Economic scholarship has developed important insights into these intertwined topics and

¹⁰² See, e.g., Washington Bytes, *Will the Supreme Court’s Amex Decision Shield Dominant Tech Platforms from Antitrust Scrutiny?*, FORBES (Jul. 18, 2018), <https://www.forbes.com/sites/washingtonbytes/2018/07/18/antitrust-enforcement-of-dominant-tech-platforms-in-the-post-american-express-world> (panel discussion between Hal Singer, Michael Kades, Randy Picker, & Chris Sagers).

¹⁰³ See, e.g., Herbert Hovenkamp, *Platforms and the Rule of Reason: The American Express Case*, 2019 COLUM. BUS. L. REV. 35 (2019) (dubbing the *American Express* decision an “economic misfire”); DAVID S. EVANS & RICHARD SCHMALENSEE, *ANTITRUST ANALYSIS OF PLATFORM MARKETS: WHY THE SUPREME COURT GOT IT RIGHT IN AMERICAN EXPRESS* 67–80 (2019) (discussing *Times-Picayune Publ’g Co. v. United States*, 345 U.S. 594 (1953), as an example of a non-transaction platform); Wright & Yun, *supra* note 67 (arguing that the Court’s distinction does not prohibit the use of the Court’s logic to non-transaction platforms); Niels, *supra* note 69 (arguing that the distinction does not matter for market definition purposes).

are increasingly becoming part of antitrust enforcement and court decisions. While there are benefits in attempting to classify platforms into specific categories, we ultimately find it is more important to treat each platform as a specific business that can operate under very different incentives compared to seemingly similar platforms.

Error Costs in Digital Markets

Geoffrey A. Manne

INTRODUCTION¹

Legal decision-making and enforcement under uncertainty are always difficult and always potentially costly. The risk of error is always present given the limits of knowledge, but it is magnified by the precedential nature of judicial decisions: an erroneous outcome affects not only the parties to a particular case, but also all subsequent economic actors operating in “the shadow of the law.”² The inherent uncertainty in judicial decision-making is further exacerbated in the antitrust context where liability turns on the difficult-to-discern economic effects of challenged conduct. And this difficulty is still further magnified when antitrust decisions are made in innovative, fast-moving, poorly-understood, or novel market settings—attributes that aptly describe today’s digital economy.

Rational decision-makers will undertake enforcement and adjudication decisions with an eye toward maximizing social welfare (or, at the very least, ensuring that nominal benefits outweigh costs).³ But “[i]n many contexts, we simply do not know what the

¹ This chapter builds on a number of prior works including Geoffrey A. Manne & Joshua D. Wright, *Introduction*, in *COMPETITION POLICY AND PATENT LAW UNDER UNCERTAINTY: REGULATING INNOVATION* (Geoffrey A. Manne & Joshua D. Wright, eds. 2009); Geoffrey A. Manne & Joshua D. Wright, *Innovation and the Limits of Antitrust*, 6 J. COMPETITION L. & ECON. 153 (2010); and Geoffrey A. Manne & Kristian Stout, *The Evolution of Antitrust Doctrine After Ohio v. Amex and the Apple v. Pepper Decision That Should Have Been*, 98 NEB. L. REV. 425 (2019). I thank Bruce Kobayashi and Joshua Wright for helpful comments, and Rachel Burke for excellent research assistance.

² Robert H. Mnookin & Lewis Kornhauser, *Bargaining in the Shadow of the Law: The Case of Divorce*, 88 YALE L.J. 950, 968 (1979).

³ See, e.g., Richard A. Posner, *Cost-Benefit Analysis: Definition, Justification, and Comment on Conference Papers*, 29 J. LEG. STUD. 1153, 1153 (2000) (“At the highest level of generality . . . , [cost-benefit analysis] is virtually synonymous with welfare economics, that is, economics used normatively—used, that is, to provide guidance for the formation of policy. . . . At the other end of the scale of generality, the term denotes the use of the Kaldor-Hicks (wealth maximization rather than utility maximization) concept of efficiency to evaluate government projects. . . .”).

consequences of our choices will be. Smart people can make guesses based on the best science, data, and models, but they cannot eliminate the uncertainty.”⁴ Because uncertainty is pervasive, we have developed certain heuristics to help mitigate both the direct and indirect costs of decision-making under uncertainty, in order to increase the likelihood of reaching enforcement and judicial decisions that are on net beneficial for society. One of these is the error-cost framework.

In simple terms, the objective of the error-cost framework is to ensure that regulatory rules, enforcement decisions, and judicial outcomes minimize the expected cost of (1) erroneous condemnation and deterrence of beneficial conduct (“false positives,” or “Type I errors”); (2) erroneous allowance and under-deterrence of harmful conduct (“false negatives,” or “Type II errors”); and (3) the costs of administering the system (including the cost of making and enforcing rules and judicial decisions, the costs of obtaining and evaluating information and evidence relevant to decision-making, and the costs of compliance).

In the antitrust context, a further premise of the error-cost approach is commonly (although not uncontroversially⁵) identified: the assumption that, all else equal, Type I errors are relatively more costly than Type II errors. “Mistaken inferences and the resulting false condemnations ‘are especially costly, because they chill the very conduct the antitrust laws are designed to protect.’”⁶ Thus the error-cost approach in antitrust

⁴ David Weisbach, *Introduction: Legal Decision Making under Deep Uncertainty*, 44 J. LEG. STUD. S319, S321 (2015). See generally Herbert Simon, *Theories of Decision Making in Economics*, 44 AM. ECON. REV. 253, 272 (1959) (“The decision-maker’s model of the world encompasses only a minute fraction of all the relevant characteristics of the real environment, and his inferences extract only a minute fraction of all the information that is present even in his model.”).

⁵ See *infra* Section I.D.2.

⁶ *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 414 (2004) (quoting *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 594 (1986)). This approach is not limited to addressing predation and duty to deal claims, and US courts have employed the error cost framework in a range of cases. See cases collected *infra* note 151.

typically takes on a more normative objective: a heightened concern with avoiding the over-deterrence of procompetitive activity through the erroneous condemnation of beneficial conduct in precedent-setting judicial decisions. Various aspects of antitrust doctrine—ranging from antitrust pleading standards to the market definition exercise to the assignment of evidentiary burdens—have evolved in significant part to constrain the discretion of judges (and thus to limit the incentives of antitrust enforcers) to condemn uncertain, unfamiliar, or nonstandard conduct, lest “uncertain” be erroneously identified as “anticompetitive.”

The concern with avoiding Type I errors is even more significant in the enforcement of antitrust in the digital economy because the “twin problems of likelihood and costs of erroneous antitrust enforcement are magnified in the face of innovation.”⁷ Because erroneous interventions against innovation and the business models used to deploy it threaten to deter subsequent innovation and the deployment of innovation in novel settings, both the likelihood and social cost of false positives are increased in digital and other innovative markets. Thus the avoidance of error costs in these markets also raises the related question of the proper implementation of *dynamic* analysis in antitrust.⁸

I. THE ERROR-COST FRAMEWORK

A. *Uncertainty, Ignorance, and Evolution*

Uncertainty in the context of statistical decision theory⁹ (from which error-cost analysis is derived) implies more than merely *risk*.¹⁰ Risk implies that the potential

⁷ Manne & Wright, *Innovation*, *supra* note 1, at 168.

⁸ See generally, Douglas H. Ginsburg & Joshua D. Wright, *Dynamic Analysis and the Limits of Antitrust Institutions*, 78 ANTITRUST L.J. 1 (2012).

⁹ See generally JOHN PRATT, HOWARD RAIFFA AND ROBERT SCHLAIFER, *INTRODUCTION TO STATISTICAL DECISION THEORY* (1995)

¹⁰ See FRANK H. KNIGHT, *RISK, UNCERTAINTY, AND PROFIT* 19 (1921) (“Uncertainty must be taken in a sense radically distinct from the familiar notion of Risk, from which it has never been properly separated. The term ‘risk,’ as loosely used in everyday speech and in economic discussion, really covers two things which,

outcomes are known, but that they occur only with a certain probability. Maximizing benefits (minimizing error) under these conditions is fairly straightforward, and readily reducible to a mathematical formula.

Under uncertainty, the possible *consequences* (costs) of a decision are known, but not the likelihood of any given outcome. This presents a much more difficult maximization problem for which judgment (flawed as it is) is required. It is also, unfortunately, far more common, as probabilities are rarely known with any degree of precision.

More troublingly, however, a disturbingly large share of the time in judicial decision-making we know *neither* the probabilities nor the consequences of decisions. “In such cases the uncertainty . . . is even more daunting than uncertainty in decision theory’s technical sense; it is in fact a deep form of ignorance.”¹¹

Antitrust decision-making is most commonly undertaken in this state of ignorance. The stark reality for most antitrust adjudication is that the same conduct that could be beneficial in one context could be harmful in another.¹²

functionally at least, in their causal relations to the phenomena of economic organization, are categorically different. . . . The essential fact is that ‘risk’ means in some cases a quantity susceptible of measurement, while at other times it is something distinctly not of this character; and there are far-reaching and crucial differences in the bearings of the phenomenon depending on which of the two is really present and operating. . . . It will appear that a measurable uncertainty, or ‘risk’ proper, as we shall use the term, is so far different from an unmeasurable one that it is not in effect an uncertainty at all. We shall accordingly restrict the term ‘uncertainty’ to cases of the non-quantitative type.”).

¹¹ ADRIAN VERMEULE, JUDGING UNDER UNCERTAINTY: AN INSTITUTIONAL THEORY OF LEGAL INTERPRETATION 176 (2006).

¹² Some scholars attempt to refute this, largely by referring to the advance of economic theory that purports to better discern pro- from anticompetitive conduct. *See, e.g.*, Herbert J. Hovenkamp & Fiona Scott Morton, *Framing the Chicago School of Antitrust Analysis*, 168 U. PENN. L. REV. (forthcoming 2020) (working paper at 6-7) (“[M]ore up-to-date economic analysis revealed anticompetitive conduct and called for greater enforcement. Making the problem worse, about this time (1980s) the economics profession developed applied game theory and there was a spate of sophisticated models of imperfect competition. Now many more patterns of anticompetitive conduct could be explained and understood, particularly those in oligopoly markets.”). But, as I discuss below, that learning is, for the most part, entirely theoretical, constrained to “possibility theorems” divorced from realistic complications and the real institutional settings of decision-making. The proliferation of these theories may actually increase, rather than decrease,

But it is virtually never known what the likelihood of either outcome is in the case of novel business conduct (i.e., the sort that makes its way to litigation).¹³ To make matters worse, the magnitudes of the potential harm (if anticompetitive) and benefits (if procompetitive) are also essentially never knowable: in the best-case scenario the estimation of effects must be cabined to render evaluation remotely tractable, and inevitably static estimates will miss broader (and potentially more significant) dynamic effects.¹⁴

A further complication is the precedential nature of judicial decisions:

[I]n contrast to private decision makers, courts also have concerns about optimal deterrence. That is because a decision by a court will not only bind the litigation parties, but will also serve as precedent by which future conduct will be judged. In antitrust, for example, over-deterrence might involve deterring welfare enhancing cooperation or innovations by firms that fear a finding of liability even when their conduct does not reduce consumer welfare.¹⁵

The consequences of erroneous decision-making are thus considerably more significant than even the already curtailed estimates in any given case. As the *Microsoft* court put it:

Whether any particular act of a monopolist is exclusionary, rather than merely a form of vigorous competition, can be difficult to discern: the means of illicit exclusion, like the means of legitimate competition, are myriad. *The challenge for an antitrust court lies in stating a general rule for distinguishing between exclusionary acts, which reduce social welfare, and competitive acts, which increase it.*¹⁶

uncertainty by further complicating the analysis and asking generalist judges to choose from competing theories without any realistic means of doing so. See *infra* notes 137 to 162 and accompanying text.

¹³ See, e.g., Joshua Wright, Former Comm’r, Fed. Trade Comm’n, Remarks at the Executive Committee Meeting of the New York State Bar Association’s Antitrust Section: Section 5 Recast: Defining the Federal Trade Commission’s Unfair Methods of Competition Authority 24 (June 19, 2013) (transcript available at <https://www.ftc.gov/public-statements/2013/06/section-5-recast-defining-federal-trade-commissions-unfair-methods>) (“Where conduct plausibly produces both costs and benefits for consumers it is fundamentally difficult to identify the net competitive consequences associated with the conduct. This is particularly true if business conduct is novel or is being applied to an emerging or rapidly changing industry. . . .”). See generally Manne & Wright, *Innovation*, *supra* note 1.

¹⁴ See discussion of market definition in digital markets, *infra* Section III.C.

¹⁵ C. Frederick Beckner III & Steven C. Salop, *Decision Theory and Antitrust Rules*, 67 ANTITRUST L.J. 41, 51 (1999).

¹⁶ *United States v. Microsoft Corp.*, 253 F.3d 34, 58 (D.C. Cir. 2001) (emphasis added).

The case-by-case, common-law approach to antitrust is itself a form of error-cost avoidance. It is well known that specification of detailed, ex ante rules will ensure costly, erroneous outcomes where conduct is not clearly harmful, our understanding of its effects is indeterminate, or technological change alters either the effects of certain conduct or our understanding of it: “An important cost of legal regulation by means of rules is thus the cost of altering rules to keep pace with economic and technological change.”¹⁷

By contrast,

[o]bsolescence is not so serious a problem with regulation by standard. Standards are relatively unaffected by changes over time in the circumstances in which they are applied, since a standard does not specify the circumstances relevant to decision or the weight of each circumstance but merely indicates the kinds of circumstance that are relevant.¹⁸

Despite occasional assertions to the contrary, it is clear that the antitrust laws were drafted as imprecise standards, necessarily leaving to the courts the job of more detailed rulemaking. In this it reflects a common and well-understood legislative choice:

The legislature’s choice whether to enact a standard or a set of precise rules is implicitly also a choice between legislative and judicial rulemaking. A general legislative standard creates a demand for specification. This demand is brought to bear on the courts through the litigation process and they respond by creating rules particularizing the legislative standard.¹⁹

The cost of this approach, however, is that deterrence by standard is less effective, and administration more expensive. At the same time, however, the common-law approach is readily amenable to Bayesian updating, and as more information is gleaned (both through experience and the development of economic science), the common law approach incorporates it into the analysis—first through the basic operation of stare decisis, but also through concrete doctrinal changes that can amplify particular circumstances to more general cases. In this way, the process of antitrust adjudication

¹⁷ Isaac Ehrlich & Richard A. Posner, *An Economic Analysis of Legal Rulemaking*, 3 J. LEGAL STUD. 257, 277 (1974). See also Bruce H. Kobayashi & Joshua D. Wright, *Antitrust and Ex-Ante Sector Regulation*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

¹⁸ Ehrlich & Posner, *supra* note 17, at 277.

¹⁹ *Id.* at 261.

develops along with economic learning to reduce the risk of error as more information is available.²⁰

B. The Basics of Error-Cost Analysis

The application of decision theory to judicial decision-making seems to have originated with Ehrlich and Posner's 1974 article, *An Economic Analysis of Legal Rulemaking*:

The model is based on a social loss function having, as its principal components, the social loss from activities that society wants to prevent, the social loss from the (undesired) deterrence of socially desirable activities, and the costs of producing and enforcing statutory and judge-made rules, including litigation costs. Efficiency is maximized by minimizing the social loss function with respect to two choice variables, the number of statutory rules and the number of judge-made rules.²¹

There the particular focus was on the specificity of legal proscriptions and the choice between standards and rules: "a theory of the legal process according to which the desire to minimize costs is a dominant consideration in the choice between precision and generality in the formulation of legal rules and standards."²²

Professors Joskow & Klevorick introduced decision-theoretic analysis to antitrust in their development of a framework for assessing predatory pricing.²³ As they note, uncertainty is inherent in the assessment of predatory pricing (although the same assessment applies to a great deal of antitrust analysis, much of which is similarly forward looking, and all of which is tasked with inferring anticompetitive effect from limited information):

Such an enterprise, no matter how carefully it is done, is inherently uncertain and involves the possibility of error both because the actual effects of any kind of observable short-run behavior on long-run outcomes are themselves uncertain and because our methods of predicting those

²⁰ See generally Manne & Stout, *Evolution*, *supra* note 1.

²¹ Ehrlich & Posner, *supra* note 17, at 272.

²² *Id.* at 280.

²³ Paul L. Joskow & Alvin K. Klevorick, *A Framework for Analyzing Predatory Pricing Policy*, 89 YALE L.J. 213 (1979).

effects are imperfect.²⁴

The decision-theoretic framework employed by Joskow & Klevorick to assess the propriety of a general rule applicable to predatory pricing cases

directs that we choose the policy that would minimize the sum of the expected costs of error and the costs of implementation that would result if the policy were applied to the market we are considering. . . . [O]ur decision-theoretic evaluative mechanism reveals that no single rule will be best for all market situations; if a predatory pricing rule is formulated with one particular market in mind, we cannot be sure that it should be applied to other market situations.²⁵

It was Judge Frank Easterbrook who generalized the approach for antitrust, and offered the clearest exposition of the error-cost approach:²⁶

The legal system should be designed to minimize the total costs of (1) anticompetitive practices that escape condemnation; (2) competitive practices that are condemned or deterred; and (3) the system itself.²⁷

The role of presumptions and other doctrinal elements of the process of antitrust review — “filters” in Easterbrook’s terminology — is central to the effectuation of the error-cost framework:

The third is easiest to understand. Some practices, although anticompetitive, are not worth deterring. We do not hold three-week trials about parking tickets. And when we do seek to deter, we want to do so at the least cost. A shift to the use of presumptions addresses (3)

²⁴ *Id.* at 222.

²⁵ *Id.* at 218.

²⁶ See Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1 (1984). See also Frank H. Easterbrook, *On Identifying Exclusionary Conduct*, 61 NOTRE DAME L. REV. 972 (1986); Frank H. Easterbrook, *Allocating Antitrust Decisionmaking Tasks*, 76 GEO. L.J. 305 (1987). Jonathan Baker asserts that credit for the origination of the error-cost framework in antitrust, usually credited to Easterbrook, properly belongs to Joskow & Klevorick. See Jonathan B. Baker, *Taking the Error Out of “Error Cost” Analysis: What’s Wrong with Antitrust’s Right*, 80 ANTITRUST L.J. 1, 4-5 n. 16 (2015) (“Citing Easterbrook’s ‘pioneer[ing]’ role in using the error cost approach, Commissioner Joshua Wright describes the use of the approach within antitrust as ‘distinctively Chicagoan,’ without noting Joskow and Klevorick’s prior use.”). But Easterbrook himself notes Joskow & Klevorick’s use of the framework (along with that of several others), rightly pointing out that, previous to him, it was applied only to specific areas of antitrust. See Easterbrook, *Limits*, *id.* at 16 n. 34. Importantly, Joskow and Klevorick primarily saw its use as a function of overcoming the uncertainty of time. But Easterbrook applied the problem more generally to the inherent competitive ambiguity of business conduct. Moreover, as discussed below, Easterbrook was also the first to make the fundamental point that antitrust tended toward false positives, and that these are particularly costly relative to the cost of false negative errors. See *infra* Section I.D.3.

²⁷ Easterbrook, *Limits*, *supra* note 26, at 16.

directly, and a change in the content of the legal rules influences all three points. . . .

. . . The task, then, is to create simple rules that will filter the category of probably-beneficial practices out of the legal system, leaving to assessment under the Rule of Reason only those with significant risks of competitive injury.²⁸

Error-cost analysis applies a Bayesian decision-theoretic framework designed to address problems of decision-making under uncertainty. In antitrust, decision-makers are tasked with maximizing consumer welfare.²⁹ The problem, of course, is that it is never clear in any given case—particularly those that make their way to actual litigation—what decision will accomplish this objective.³⁰

Given this uncertainty, we can recharacterize the effort to maximize consumer welfare in antitrust decision-making as an effort to *minimize* the *loss* of consumer welfare from (inevitably) erroneous decisions.³¹ The likelihood of error decreases with additional information, but there is a cost to obtaining new information. So, the error-cost framework seeks to minimize error for a given amount of information as well as to determine what amount (and type) of information is optimal.

In evaluating investment in information, the benefit of additional information is that it may reduce the likelihood of making a costly erroneous decision. In this sense, the decision to consider additional information can be seen as a tradeoff between two types of costs—error costs on the one hand and information costs on the other. A rational decision maker will try to minimize the sum of the two types of costs. This is the second key insight of the decision theoretic approach.³²

²⁸ *Id.* at 16-17.

²⁹ For more on the consumer welfare standard, see Elyse Dorsey, *Antitrust in Retrograde: The Consumer Welfare Standard, Socio-Political Goals, and the Future of Enforcement*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

³⁰ See, e.g., Beckner & Salop, *supra* note 15, at 43 (“A court inevitably must make its decisions on the basis of limited and imperfect information. As a result, a court can never be absolutely certain that its factual findings are correct, the correct litigant prevails, or the remedy it mandates still would be the best outcome if all the facts were known.”).

³¹ *Id.* at 45 (“The decision theory approach can be reformulated in terms of minimizing the cost of error. . . . Whether framed in terms of error analysis or expected net benefit, the answer is the same. This answer represents the first key insight of the economic approach to decision making. Rational decision making is based on weighing the benefits and costs of alternative actions.”).

³² *Id.* at 46.

Crucial to the application of the error-cost framework in the judicial or regulatory context is that the costs (benefits) of an erroneous (correct) decision are not limited to the immediate consequences of the conduct at hand. Because judicial determinations establish precedent, and because regulatory rules are applied broadly, antitrust decision-makers must also consider the risk and cost of over- and under-deterrence resulting from erroneous decisions.³³ These dynamic, long-term consequences of antitrust decision-making are likely the most significant source of cost from erroneous decisions.

Applying this approach, the decision-maker (e.g., regulator, court, or legislator) holds a relatively uninformed prior belief about the likelihood that a particular business practice is anticompetitive. These prior beliefs are updated either with new knowledge as the theoretical and empirical understanding of the practice evolves over time, or with new evidence specific to the case at hand. Knowledge regarding the likely competitive effects of business conduct is never perfect, but each additional piece of information may improve the likelihood of accurately predicting whether the conduct is harmful or not (although obtaining it may be costly, and it also may increase the cost of accurate decision-making). The optimal decision rule is based on the updated likelihood that the practice is anticompetitive by minimizing a loss function measuring the costs of Type I and Type II errors.

The key policy tradeoff is between Type I (“false positive”) and Type II (“false negative”) errors. Table 1 presents a two-by-two matrix laying out the types of errors that occur in antitrust litigation.³⁴

³³ See Steven C. Salop, *An Enquiry Meet for the Case: Decision Theory, Presumptions, and Evidentiary Burdens in Formulating Antitrust Legal Standards* 9 (Geo. L. Ctr. Working Paper, 2017). (“In the case of antitrust judicial standards, the uncertainty is complicated by the fact that the decision will lead to market responses by the parties to the litigation and others. If the judicial decision has precedential effects, it also will lead to market responses by non-parties in the future.”).

³⁴ Table 1 is from Manne & Wright, *Innovation*, *supra* note 1, at 159, itself adapted from David S. Evans & Jorge Padilla, *Designing Antitrust Rules for Assessing Unilateral Practices: A Neo-Chicago Approach*, 72 U. CHI. L. REV. 73 (2005).

Table 1. Possible errors in the antitrust assessment of business practices

Competitive impact	Illegal	Legal
Harmful to competition	Percent of cases correctly condemning anticompetitive practices	Percent of cases falsely absolving anticompetitive practices (“false negatives”)
Not harmful to competition	Percent of cases falsely condemning legitimate practices (“false positives”)	Percent of cases correctly absolving legitimate practices

Easterbrook’s operationalization of the framework entails three key, underlying assumptions:³⁵

1. Both Type I and Type II errors are inevitable in antitrust cases because of the difficulty in distinguishing efficient, procompetitive business conduct from anticompetitive behavior;
2. The social costs associated with Type I errors are generally greater than the social costs of Type II errors because market forces offer at least *some* corrective with respect to Type II errors and none with regard to Type I errors: “the economic system corrects monopoly more readily than it corrects judicial [Type II] errors;”³⁶ and
3. Optimal antitrust rules will minimize the expected sum of error costs subject to the constraint that the rules be relatively simple and reasonably administrable.³⁷

The inevitability of errors in antitrust cases is a function of two related, but distinct, knowledge problems. The first is rooted in the limits of the underlying economic science

³⁵ Adapted from Manne & Wright, *Innovation*, *supra* note 1, at 159.

³⁶ Easterbrook, *Limits*, *supra* note 26, at 15. *See also* Ehrlich & Posner, *supra* note 17.

³⁷ As then-Judge Breyer admonished, antitrust rules “must be administratively workable and therefore cannot always take account of every complex economic circumstance or qualification.” *Town of Concord v. Boston Edison Co.*, 915 F.2d 17, 22 (1st Cir. 1990). Easterbrook makes the same point and proposes several simple rules in this vein. *See* Easterbrook, *Limits*, *supra* note 26, at 14, *ff.*

which provides the guidance by which decisionmakers attempt to identify anticompetitive conduct and specify the rules relating to that conduct. Because economic science is constantly evolving (to say nothing of inherently imperfect) and imperfectly translated into judicial decision-making, rules will always be imperfectly specified.³⁸ Economists, who supply the crucial input of economic science, tend not to advance their analyses in realistic institutional settings (in part a function of the need for simplification in economic models to ensure their tractability) and thus regularly “avoid incorporating the social costs of erroneous enforcement decisions into their analyses and recommendations for legal rules.”³⁹ They also have divergent incentives and ulterior motives that may make them less likely to do a good job.⁴⁰ Meanwhile, lawyers, judges, and enforcers, for their part, are often limited in their ability to apply the relevant economic science to complicated and imperfect facts, and to adduce the optimal legal rules.⁴¹ The net result is that it is a fundamentally difficult task to identify illegal, anticompetitive conduct and distinguish it from legal, procompetitive conduct in any specific case:

The key point is that the task of distinguishing anticompetitive behavior from procompetitive behavior is a herculean one imposed on enforcers and judges, and that even when economists get it right before the practice is litigated, some error is inevitable. The power of the error-cost framework is that it allows regulators, judges, and policymakers to harness the power of economics, and the state-of-the-art theory and evidence, into the formulation of simple and sensible filters and safe-harbors rather than to convert themselves into amateur

³⁸ Easterbrook, *Limits*, *supra* note 26, at 9. See also Frank H. Easterbrook, *Workable Antitrust Policy*, 84 MICH. L. REV.1696 (1986).

³⁹ Manne & Wright, *Innovation*, *supra* note 1, at 157.

⁴⁰ *Id.*

⁴¹ The limited ability of generalist judges and antitrust enforcers to apply economic science to complex facts is not the primary reason for this strain of uncertainty, as some critics sometimes reduce this argument to. But nor is it irrelevant. Indeed, there is evidence that neither courts nor antitrust agencies perform particularly well in antitrust disputes involving sophisticated economics. See Michael R. Baye & Joshua D. Wright, *Is Antitrust Too Complicated for Generalist Judges? The Impact of Economic Complexity & Judicial Training on Appeals*, L. & SOC’Y: COURTS E-JOURNAL 21 (2009); Joshua D. Wright & Angela Diveley, *Do Expert Agencies Outperform Generalist Judges? Some Preliminary Evidence from the Federal Trade Commission*, 1 J. ANTITRUST ENFORCEMENT 82 (2013).

econometricians, game-theorists, or behaviorists.⁴²

The second knowledge problem leading to the inevitability of errors stems from the lack of precision in legal rules generally. As Easterbrook notes, “one cannot have the savings of decision by rule without accepting the costs of mistakes.”⁴³ Because the application of economic science to any given situation is imperfect, comprehensive proscriptions cannot often be specified in advance. At the same time (and for much the same reason), the case-by-case, *ex post* determination of antitrust liability through the rule of reason process is costly and difficult to administer accurately. The result is that there are relatively few simple rules (e.g., safe harbors and *per se* rules) in place: where there aren’t, adjudication is costly and imperfect; where there are, errors are inevitable.

C. The Implementation of the Error-Cost Framework in Antitrust Adjudication

The knowledge problem confronting antitrust decisionmakers is somewhat ameliorated by the imposition of intermediate, simplifying procedures that impose categorization and filters at various stages in the process to improve the efficiency of decision-making given the cost of litigation (including, e.g., time costs, burdens on judicial resources, and discovery costs). Standing rules, for example, are classic error-cost minimization rules. The availability of standing turns on certain indicia that correlate with the expected likelihood that a plaintiff in a given position will have a justiciable case. Where that likelihood is identifiably low, it is more efficient to curtail adjudication before it even begins by denying standing, even though occasionally this will erroneously prevent the adjudication of meritorious cases.

At the overarching, substantive level, the choice between, on the one hand,

⁴² Manne & Wright, *Innovation*, *supra* note 1, at 163.

⁴³ See Easterbrook, *Limits*, *supra* note 26, at 14–15. This underlying issue is explored at length in Ehrlich & Posner, *supra* note 17, at 268 (“The inherent ambiguity of language and the limitations of human foresight and knowledge limit the practical ability of the rulemaker to catalog accurately and exhaustively the circumstances that should activate the general standard. Hence the reduction of a standard to a set of rules must in practice create both overinclusion and underinclusion.”).

engaging in a full-blown rule of reason analysis and, on the other, truncating review under the per se standard is a manifestation of the error cost framework.⁴⁴ In simple terms, truncated review costs less. When it is apparent to a court that challenged conduct is almost certainly anticompetitive, the risk of erroneously condemning that conduct under a truncated analysis is low, and the administrative cost savings comparatively high.

The dividing line between per se and rule of reason turns on information and probabilities: the extent to which the court has knowledge that the type of case presented is always or almost always harmful. Thus the Court has noted that the per se rule should be applied (1) “only after courts have had considerable experience with the type of restraint at issue” and (2) “only if courts can predict with confidence that [the restraint] would be invalidated in all or almost all instances under the rule of reason” because it “lack[s] . . . any redeeming virtue.”⁴⁵

Of course, precisely because certain knowledge about the competitive effects of most conduct is not available, condemnation under the per se standard is rarely appropriate. As a result, the error cost framework leads naturally to a preference for rule of reason analysis for most types of conduct.⁴⁶

Although less often discussed,⁴⁷ but of no less importance, the error-cost

⁴⁴ See Beckner & Salop, *supra* note 15, at 65 (“Thus, the choice between per se rules and the rule of reason has a decision theoretic basis.”). For a more detailed discussion of the choice between per se and rule of reason analysis, particularly in the context of digital markets, see *infra* Section III.A.

⁴⁵ *Leegin Creative Leather Prod., Inc. v. PSKS, Inc.*, 551 U.S. 877, 886-87 (2007) (omission in original; citation omitted).

⁴⁶ See Easterbrook, *Limits*, *supra* note 26, at 10 (“These changes in the structure of antitrust analysis follow ineluctably from changes in our understanding of the economic consequences of the practices involved. If condemnation per se depends on a conclusion that almost all examples of some practice are deleterious, then discoveries of possible benefits lead to new legal rules. We cannot condemn so quickly anymore. What we do not condemn, we must study. The approved method of study is the Rule of Reason.”).

⁴⁷ See Murat C. Mungan & Joshua Wright, *Optimal Standards of Proof in Antitrust* 4 (George Mason Univ. Law & Econ. Research Paper Series No. 19-20, 2019), <https://ssrn.com/abstract=3428771>. (“Quite interestingly, the influence of Easterbrook’s observations concerning error costs has largely been seen in

framework also helps inform procedural as much as substantive liability rules. Many procedural rules serve as filters to eliminate the costly consideration of conduct that is unlikely to lead to consumer harm (costly both in terms of direct, administrative costs, as well as the risk of erroneous condemnation). Thus, antitrust procedure has a number of hurdles a plaintiff must overcome before a case is “proven.” Failure to overcome any of these hurdles could lead to a dismissal of the case, as early as a motion to dismiss before discovery.⁴⁸ Courts also dismiss cases at the summary judgment stage when there is no economic basis for the claims.⁴⁹ Similarly, antitrust assigns burdens of proof and adopts certain evidentiary presumptions within a burden-shifting framework, aimed at putting a thumb on the scale where economic knowledge warrants it.⁵⁰ The combination of procedural rules and burdens of proof helps to assure—in an environment of substantial uncertainty—that conduct harmful to consumers, and only such conduct, is condemned under a rule of reason analysis.

Antitrust injury and standing are among the first procedural hurdles a plaintiff faces.⁵¹ Much like the *per se* standard, the doctrines of antitrust injury and standing serve

the evolution and shaping of antitrust liability rules, and academic discussions of these rules, rather than in specific procedural rules or evidentiary burdens.”).

⁴⁸ See *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 559 (2007) (adjusting pleading standards in order to avoid Type I errors, noting that it is “self-evident that the problem of discovery abuse cannot be solved by careful scrutiny of evidence at the Summary Judgment stage, much less lucid instructions to juries; the threat of discovery expense will push cost-conscious defendants to settle even anemic cases before reaching those proceedings”). See also Keith N. Hylton, *When Should a Case Be Dismissed? The Economics of Pleading and Summary Judgment Standards*, 16 SUP. CT. ECON. REV. 39 (2008).

⁴⁹ See *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574 (1986).

⁵⁰ See Steven C. Salop, *supra* note 33 (“While the plaintiff in civil litigation bears the burden of proof to show that anticompetitive conduct is more likely than not, presumptions are added to decision process. Many antitrust presumptions are based on and represent the court’s view of the likely competitive impact of a category of restraint inferred from market facts. When there is a strong anticompetitive presumption, the evidentiary burden of production to rebut the presumption is placed on the defendant. . . . When there is a procompetitive presumption, the burden of proof allocated to the plaintiff is heightened. Either way, presumptions place a ‘thumb on the scale.’”).

⁵¹ For a more detailed discussion of the error-cost function of standing and injury, see *infra* Section III.B.

as a filter meant to minimize the cost of adjudicating likely meritless claims. Importantly, in order to perform this function effectively, they must also reflect the underlying substantive knowledge of the conduct in question.⁵²

Plaintiffs must also define the relevant market in which to assess the challenged conduct, including both product and geographic markets.⁵³ Particularly where novel conduct or novel markets are involved and thus the relevant economic relationships are poorly understood, market definition is crucial to determine “what the nature of [the relevant] products is, how they are priced and on what terms they are sold, what levers [a firm] can use to increase its profits, and what competitive constraints affect its ability to do so.”⁵⁴ In this way market definition not only helps to economize on administrative costs (by cabining the scope of inquiry), it also helps to improve the understanding of the conduct in question and its consequences.

Evidentiary burdens and standards of proof are particularly important implementations of the error cost framework. As noted, presumptions and burdens place an evidentiary “thumb on the scale” of antitrust adjudication, ideally in a manner reflecting underlying economic knowledge and its application to the specific facts at hand.⁵⁵ A plaintiff need not prove anticompetitive harm with certainty, or “beyond a shadow of doubt”: such a standard would, in most circumstances, not reflect the inherent uncertainty of conduct challenged under the antitrust laws. Under a “preponderance of the evidence” standard, by contrast, a plaintiff need adduce evidence sufficient only to demonstrate that challenged conduct is “more likely than not” to have anticompetitive

⁵² See generally Manne & Stout, *Evolution*, *supra* note 1.

⁵³ For a more detailed discussion of the error-cost function of market definition, particularly in the context of digital markets, see *infra* Section III.C.

⁵⁴ Geoffrey A. Manne, *In Defence of the Supreme Court’s ‘Single Market’ Definition in Ohio v. American Express*, 7 J. ANTITRUST ENFORCEMENT 104, 106 (2019).

⁵⁵ See Salop, *An Enquiry Meet for the Case*, *supra* note 50; Andrew I. Gavil, *Burden of Proof in U.S. Antitrust Law*, 1 ISSUES IN COMP. L. AND POL’Y 125 (2008).

effect. Plaintiffs in most civil litigation in the US, including antitrust litigation, are held to this standard.⁵⁶ Rebuttable presumptions are sometimes employed as a cost-saving substitute for direct evidence when economic theory predicts a relatively high probability of competitive harm.⁵⁷

The choice of evidentiary standard—that is, the amount and kind of information supportive of the plaintiff’s claims she must produce, and the degree of certainty that evidence must engender in the court for it to decide in her favor—is crucial to the error-cost analysis which is, after all, a decision-theoretic device.

[A]ntitrust policy [is] a problem of drawing inferences from evidence and making enforcement decisions based on these inferences. . . . Using Bayes’ rule, we can write the policy maker’s belief about the relative odds that a given practice is anticompetitive as a function of his prior beliefs about the practice, and the relative likelihood that the evidence observed would be produced by anticompetitive conduct.⁵⁸

But in an error-cost framework, it is by no means certain that a preponderance of the evidence—“more likely than not”—standard will generally minimize error costs. “[T]he decision theoretic approach. . . would not apply [the preponderance of the evidence] standard across the board. Instead, it would base decisions on expected error cost, not just the likelihood of prevailing.”⁵⁹ A preponderance of the evidence standard “would treat prospective errors in the direction of excessive enforcement as equally costly as prospective errors in the direction of lenient enforcement.”⁶⁰ Thus such a standard will

⁵⁶ See Beckner & Salop, *supra* note 15, at 61 (“Antitrust and many other areas of civil law apply a standard of proof based on ‘preponderance of the evidence.’ This standard typically is satisfied when the conduct is ‘more likely than not’ to lead to a particular result, or a likelihood in excess of 50 percent.”).

⁵⁷ See, e.g., *Cal. Dental Ass’n v. FTC*, 526 U.S. 756, 770 (1999); *Polygram Holding, Inc. v. FTC*, 416 F.3d 29, 36-37 (D.C. Cir. 2005).

⁵⁸ James C. Cooper, Luke M. Froeb, Dan O’Brien & Michael G. Vita, *Vertical Antitrust Policy as a Problem of Inference*, 23 INT’L J. INDUS. ORG. 639, 641 (2005).

⁵⁹ Beckner & Salop, *supra* note 15, at 61.

⁶⁰ Keith N. Hylton & Wendy Xu, *Error Costs, Ratio Tests, and Patent Antitrust Law*, 56 REV. INDUS. ORG. 563, 567 (2020).

optimize error costs only when the *costs* of Type I and Type II errors are the same.⁶¹ But this will not always be the case.

While some have advocated reducing evidentiary burdens through presumptions of harm in certain situations,⁶² Professors Mungan and Wright have persuasively argued that the preponderance of the evidence standard tends towards too many Type I errors, and should, in fact, be strengthened.⁶³

The intuition behind this result is that while the optimal standard in other contexts is that which maximizes the deterrence of a single, bad conduct, the optimal standard of proof in antitrust must be set to both deter bad conduct and incentivize innovative and procompetitive conduct.⁶⁴

In other words, in addition to uncertainty about what act is committed, there is uncertainty about the social desirability of each act which may have been committed. . . . [T]hese peculiar concerns in the field of antitrust law push the optimal standard of proof towards being stronger than in other contexts when Easterbrook's priors hold, i.e. the beneficial impact of procompetitive behavior exceeds the impact of anticompetitive behavior. This finding suggests that courts which take Easterbrook's priors as given can achieve the goals of antitrust not only by crafting substantive legal rules to impact behavior, but also by using standards of proof which are stronger than preponderance of the evidence.⁶⁵

The Supreme Court has, in fact, adopted heightened evidentiary standards in some antitrust contexts. For instance, in *Matsushita*, after enunciating the summary judgment standard,⁶⁶ the Court went on to apply the error cost framework,⁶⁷ and came to the conclusion that coordinated predatory pricing was extremely unlikely under the facts

⁶¹ See Michelle Burtis, Jonah B. Gelbach, & Bruce H. Kobayashi, *Error Costs, Legal Standards of Proof, and Statistical Significance*, 25 SUP. CT. ECON. REV. 1, 11 (2018) ("Comparing the preponderance standard (9) to the optimal standard derived in (5), it is easy to see that the two will coincide when where the cost of Type I and Type II errors are equal. . . .").

⁶² See, e.g., Jonathan B. Baker, Nancy L. Rose, Steven C. Salop & Fiona Scott Morton, *Five Principles for Vertical Merger Enforcement Policy*, 33 ANTITRUST 12 (2019).

⁶³ See Joshua D. Wright & Murat M. Mungan, *The Easterbrook Theorem and Optimal Standards of Proof: An Application to Digital Markets* (Working Paper, Jul. 15, 2020).

⁶⁴ Mungan & Wright, *Optimal Standards of Proof in Antitrust*, *supra* note 47, at 4.

⁶⁵ *Id.* at 13.

⁶⁶ See *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 585-88 (1986)

⁶⁷ See *id.* at 588-89.

presented.⁶⁸ In such situations, the Court required greater evidence to survive a motion for summary judgment.⁶⁹

D. The Normative Error-Cost Framework: Why False Positives are More Concerning than False Negatives

Crucial to Easterbrook's conception of the error-cost framework are two normative premises: first, both Type I and Type II errors are inevitable in antitrust because distinguishing conduct with procompetitive effect from that with anticompetitive effect is an inherently uncertain and difficult task. Second, Type I errors are more costly than Type II errors, because self-correction mechanisms mitigate the latter far more readily than the former.⁷⁰ As a result, writes Easterbrook, "errors on the side of excusing questionable practices are preferable."⁷¹

This version of the error-cost framework is not supported by all antitrust scholars, however, and there is a concerted effort today to condemn as unsupported, too permissive, and overly ideological the bias against enforcement that Easterbrook's error-cost approach counsels.⁷² As one recent account has it:

Given the Chicago assumption that markets tend to be self-correcting, type two errors—where the court fails to see anticompetitive conduct that actually exists—are not really problematic because the market itself will correct the situation. By contrast, false identification of harmful monopoly tends not to be self-correcting because a court blocks the efficient conduct for a long time. . . .

⁶⁸ *Id.* at 591 ("These economic realities tend to make predatory pricing conspiracies self-detering: unlike most other conduct that violates the antitrust laws, failed predatory pricing schemes are costly to the conspirators.") (citing Easterbrook, *Limits*, *supra* note 26, at 26).

⁶⁹ *Id.* at 587 ("It follows from these settled principles that if the factual context renders respondents' claim implausible—if the claim is one that simply makes no economic sense—respondents must come forward with more persuasive evidence to support their claim than would otherwise be necessary.").

⁷⁰ Easterbrook, *Limits*, *supra* note 26.

⁷¹ *Id.* at 15.

⁷² See, e.g., Baker, *Error Costs*, *supra* note 26, at 2 (arguing that "antitrust conservatives . . . systematically overstate the incidence and significance of false positives [and] understate the incidence and significance of false negatives . . ."); Hovenkamp & Scott Morton, *supra* note 12, at 28-29.

. . . If we reverse the premise and assume that markets tend more naturally to situations of market power, then the opposite presumption is warranted. Economic theory and evidence developed over the last forty years strongly support the reversed premise.⁷³

There are several problems with this assessment, however.

1. The Weakness of the Evidence on Market Power and its Alleged Harms

First, it is surely correct that evidence to support Easterbrook’s presumption is not easy to come by—if it were there would be no need for the decision-theoretic approach in the first place. But the absence of evidence to support the claim is insufficient to condemn it: evidence to the contrary is just as unavailable. Indeed, as I discuss below, the unavailability of that knowledge is precisely one of the factors that *supports* the presumption.

According to Hovenkamp and Scott Morton, the “evidence developed over the last forty years [that] strongly support[s] the reversed premise” consists of the following:

The United States well overshoot the mark in reducing antitrust enforcement after the late 1970s. Markups have risen steadily since the 1980s. The profit share of the economy has risen from 2% to 14% over the last three decades. The economic literature has come down solidly against the key early assumption of the Chicago thinkers that markets will self-correct. To the contrary, the evidence demonstrates that eliminating antitrust enforcement likely results in monopoly prices and monopoly levels of innovation in many markets.⁷⁴

Beyond the studies cited by Hovenkamp and Scott Morton, there is a widely reported literature that has documented increasing national product market

⁷³ Hovenkamp & Scott Morton, *supra* note 12, at 29.

⁷⁴ *Id.* at 10 (collecting references, including: Fiona Scott Morton, *Modern U.S. Antitrust Theory and Evidence amid Rising Concerns of Market Power and Its Effects*, WASH. CTR. FOR EQUITABLE GROWTH (May 29, 2019), <https://perma.cc/879H-9QBK>; Jan De Loecker & Jan Eeckhout, *The Rise of Market Power and the Macroeconomic Implications* 1-2 (Nat’l Bureau of Econ. Research, Working Paper No. 23687, 2017), <https://www.nber.org/papers/w23687.pdf>; Simcha Barkai, *Declining Labor and Capital Shares* 34 fig.3 (Univ. of Chi. Stigler Ctr. for the Study of the Econ. & the State, New Working Paper Series No. 2, 2016), <https://perma.cc/W7TD-PP3R>; Giulio Federico et al., *Antitrust and Innovation: Welcoming and Protecting Disruption* (Nat’l Bureau of Econ. Research, Working Paper No. 26005, 2019); *Modern US Antitrust Theory and Evidence amid Rising Concerns of Market Power and Its Effects*, WASH. CTR. FOR EQUITABLE GROWTH (May 29, 2019), <https://perma.cc/8BFZ-AZBY>).

concentration.⁷⁵ That same literature has also promoted the arguments that increased concentration has had harmful effects, including increased markups and increased market power,⁷⁶ declining labor share,⁷⁷ and declining entry and dynamism.⁷⁸

But there are good reasons to be skeptical of the national concentration and market power data. A number of papers simply do not find that the accepted story—built in significant part around the famous De Loecker and Eeckhout study⁷⁹—regarding the vast size of markups and market power is accurate. Among other things, the claimed markups due to increased concentration are likely not nearly as substantial as commonly assumed.⁸⁰ Another study finds that profits have increased, but are still within their historical range.⁸¹ And still another shows decreased wages in concentrated markets, but also that local concentration has been *decreasing* over the relevant time period.⁸²

But even more important, the narrative that purports to find a causal relationship between these data and the various depredations mentioned above is almost certainly

⁷⁵ See, e.g., Germán Gutiérrez and Thomas Philippon, *Declining Competition and Investment in the U.S.* (NBER Working Paper No. 23583, 2017), <https://www.nber.org/papers/w23583>.

⁷⁶ See Jan De Loecker, Jan Eeckhout & Gabriel Unger, *The Rise of Market Power and the Macroeconomic Implications*, 135 Q. J. ECON. 561 (2020).

⁷⁷ See David Autor, et al., *The Fall of the Labor Share and the Rise of Superstar Firms*, 135 (2) Q. J. ECON. 645, 649 (2020), <https://economics.mit.edu/files/12979>.

⁷⁸ Ryan A. Decker, John Haltiwanger, Ron S. Jarmin & Javier Miranda, *Where Has All the Skewness Gone? The Decline in High-Growth (Young) Firms in the U.S.*, 86 EUR. ECON. R. 4, 5 (2016), <https://www.sciencedirect.com/science/article/pii/S0014292116300125?via%3Dihub>.

⁷⁹ De Loecker, Eeckhout & Unger, *supra* note 76.

⁸⁰ See, e.g., James Traina, *Is Aggregate Market Power Increasing? Production Trends Using Financial Statements* (Stigler Ctr. Working Paper, 2018), <https://pdfs.semanticscholar.org/8059/7e4e80edebed66d3eef57e28d324623ad9ee0.pdf>; see also WORLD ECONOMIC OUTLOOK, APRIL 2019 GROWTH SLOWDOWN, PRECARIOUS RECOVERY, INTERNATIONAL MONETARY FUND (Apr. 2019), <https://www.imf.org/en/Publications/WEO/Issues/2019/03/28/world-economic-outlook-april-2019>.

⁸¹ See Loukas Karabarbounis & Brent Neiman, *Accounting for Factorless Income* (NBER Working Paper No. 24404, 2018), <https://www.nber.org/papers/w24404>.

⁸² See Kevin Rinz, *Labor Market Concentration, Earnings Inequality, and Earnings Mobility*, (U.S. Census Bureau Working Paper 2018-10, 2018), <https://www.census.gov/content/dam/Census/library/working-papers/2018/adrm/carra-wp-2018-10.pdf>.

incorrect.

To begin with, the assumption that “too much” concentration is harmful assumes both that the structure of a market is what determines economic outcomes, and that anyone knows what the “right” amount of concentration is. But, as economists have understood since at least the 1970s (and despite an extremely vigorous, but ultimately futile, effort to show otherwise), market structure is *not* outcome determinative.⁸³

Once perfect knowledge of technology and price is abandoned, [competitive intensity] may increase, decrease, or remain unchanged as the number of firms in the market is increased. . . . [I]t is presumptuous to conclude . . . that markets populated by fewer firms perform less well or offer competition that is less intense.⁸⁴

This view is not an aberration, and it is held by scholars across the political spectrum. Indeed, Professor Scott Morton herself is coauthor of a recent paper surveying the industrial organization literature and finding that presumptions based on measures of concentration are unlikely to provide sound guidance for public policy:

In short, there is no well-defined “causal effect of concentration on price,” but rather a set of hypotheses that can explain observed correlations of the joint outcomes of price, measured markups, market share, and concentration. . . .

Our own view, based on the well-established mainstream wisdom in the field of industrial organization for several decades, is that *regressions of market outcomes on measures of industry structure like the Herfindahl-Hirschman Index should be given little weight in policy debates*.⁸⁵

Furthermore, the national concentration statistics that are used to support these claims are generally derived from available data based on industry classifications and market definitions that have limited relevance to antitrust. As Froeb and Werden note:

[T]he data are apt to mask any actual changes in the concentration of markets, which can remain the same or decline despite increasing concentration for broad aggregations of

⁸³ See Harold Demsetz, *Industry Structure, Market Rivalry, and Public Policy*, 16 J. L. & ECON. 1 (1973).

⁸⁴ Harold Demsetz, *The Intensity and Dimensionality of Competition*, in HAROLD DEMSETZ, *THE ECONOMICS OF THE BUSINESS FIRM: SEVEN CRITICAL COMMENTARIES* 137, 140-41 (1995).

⁸⁵ Steven Berry, Martin Gaynor & Fiona Scott Morton, *Do Increasing Markups Matter? Lessons from Empirical Industrial Organization*, 33 (3) J. OF ECON. PERSPECTIVES 44, 48 (2019). See also Jonathan Baker & Timothy F. Bresnahan, *Economic Evidence in Antitrust: Defining Markets and Measuring Market Power* 24 (Stanford Law and Econ. Olin Working Paper No. 328, 2006) (“The Chicago identification argument has carried the day, and structure-conduct-performance empirical methods have largely been discarded in economics.”).

economic activity. Reliable data on trends in market concentration are available for only a few sectors of the economy, and for several, market concentration has not increased despite substantial merger activity.⁸⁶

Most importantly, however, this assumed relationship between concentration and economic outcomes is refuted by a host of recent empirical research studies.

The absence of a correlation between increased concentration and both anticompetitive causes and deleterious economic effects is demonstrated by a recent, influential empirical paper by Sharat Ganapati. Ganapati finds that the increase in industry concentration in non-manufacturing sectors in the US between 1972 and 2012 is “related to an offsetting and positive force—these oligopolies are likely due to technical innovation or scale economies. [The] data suggests that national oligopolies are strongly correlated with innovations in productivity.”⁸⁷ The result is that increased concentration results from a beneficial growth in firm size in productive industries that “expand[s] real output and hold[s] down prices, raising consumer welfare, while maintaining or reducing [these firms’] workforces.”⁸⁸

A number of other recent papers looking at the data on concentration in detail and attempting to identify the likely cause for the observed data demonstrate clearly that measures of increased national concentration cannot justify a presumption that increased market power has caused economic harm. In fact, as these papers show, the reason for increased concentration in the US in recent years appears to be technological, not anticompetitive, and its effects seem to be beneficial.

In one recent paper,⁸⁹ the authors look at both the national and local concentration

⁸⁶ Gregory J. Werden & Luke M. Froeb, *Don’t Panic: A Guide to Claims of Increasing Concentration*, 33 ANTITRUST 74, 74 (2018).

⁸⁷ Sharat Ganapati, *Growing Oligopolies, Prices, Output, and Productivity* 13 (Census Working Paper CES-WP-18-48, 2018) (forthcoming AM. ECON. J. MICROECONOMICS 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3030966.

⁸⁸ *Id.* at 1.

⁸⁹ Esteban Rossi-Hansberg, Pierre-Daniel Sarte & Nicholas Trachter, *Diverging Trends in National and Local Concentration*, in NBER MACROECONOMICS ANNUAL 2020, VOLUME 35 (Martin Eichenbaum & Erik Hurst,

trends between 1990 and 2014 and find that: (1) overall and for all major sectors, concentration is increasing nationally but decreasing locally; (2) industries with diverging national/local trends are pervasive and account for a large share of employment and sales; (3) among diverging industries, the top firms have increased concentration nationally, but *decreased* it locally; and (4) among diverging industries, opening of a plant from a top firm is associated with a long-lasting decrease in local concentration.⁹⁰ The result, as the authors note, is that

the increase in market concentration observed at the national level over the last 25 years is being shaped by enterprises expanding into new local markets. This expansion into local markets is accompanied by a fall in local concentration as firms open establishments in new locations. *These observations are suggestive of more, rather than less, competitive markets.*⁹¹

A related paper shows that new technology has enabled large firms to scale production over a larger number of establishments across a wider geographic space.⁹² As a result, these large, national firms have grown by increasing the number of local markets they serve, and in which they are actually relatively *smaller* players.⁹³ The net effect is a *decrease* in the power of top firms relative to the economy as a whole, as the largest firms specialize more, and are dominant in fewer industries.⁹⁴

Economists have been studying the relationship between concentration and various potential indicia of anticompetitive effects—price, markup, profits, rate of return, etc.—for decades. There are, in fact, hundreds of empirical studies addressing this topic. Contrary to the claims of Hovenkamp and Scott Morton, however, taken as a whole this

eds., forthcoming 2020), *preliminary draft available at* <https://www.nber.org/chapters/c14475>.

⁹⁰ Rossi-Hansberg, et al., *Presentation: Diverging Trends in National and Local Concentration*, NBER Macro Annual, slide 3 (2020), https://conference.nber.org/conf_papers/f132587/f132587.slides.pdf.

⁹¹ Rossi-Hansberg, et al, *supra* note 89, at 27 (emphasis added).

⁹² Chang-Tai Hsieh & Esteban Rossi-Hansberg, *The Industrial Revolution in Services* (Univ. of Chi., Becker Friedman Inst. for Econ. Working Paper No. 2019-87, 2020), <https://www.princeton.edu/~erossi/IRS.pdf>.

⁹³ *Id.* at 4 (“[R]ising [national] concentration in these sectors is entirely driven by an increase [in] the number of local markets served by the top firms”).

⁹⁴ *Id.* at 17.

literature is singularly unhelpful in resolving our fundamental ignorance about the functional relationship between structure and performance: “Inter-industry research has taught us much about how markets *look*. . . even if it has not shown us exactly how markets *work*.”⁹⁵

Nor do other suggested measures of supracompetitive returns—such as accounting measures of returns on invested capital—seem likely to offer any resolution. As one paper that advocates for the importance of such measures nevertheless makes clear, “[t]he welfare consequences of increasing sunk and fixed costs in an industry are complex, are probably industry specific, and may vary across antitrust and regulatory regimes. . . . It is difficult to see how cross-industry studies can capture the industry-level complexity that results from high fixed and sunk costs.”⁹⁶ Though some studies have plausibly shown that an increase in concentration in a particular case led to higher prices (although this is true in only a minority share of the relevant literature), assuming the same result from an increase in concentration in other industries or other contexts is simply not justified: “The most plausible competitive or efficiency theory of any particular industry’s structure and business practices is as likely to be idiosyncratic to that industry as the most plausible strategic theory with market power.”⁹⁷

2. The Weakness of the Evidence of Under-Enforcement (Type II Errors)

But even assuming the trends showing increased concentration and/or markups are properly identified, it does not appear that the evidence connecting them to lax

⁹⁵ Richard Schmalensee, *Inter-Industry Studies of Structure and Performance*, in 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 951, 1000 (Richard Schmalensee & Robert Willig eds., 1989). *See also* Timothy F. Bresnahan, *Empirical Studies of Industries with Market Power*, in 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 1011, 1053-54 (Richard Schmalensee & Robert Willig eds., 1989) (“[A]lthough the [most advanced empirical literature] has had a great deal to say about measuring market power, it has had very little, as yet, to say about the causes of market power.”); Easterbrook, *Workable Antitrust Policy*, *supra* note 38, at 1698 (“Today it is hard to find an economist who believes the old structure-conduct-performance paradigm.”).

⁹⁶ Berry, et al., *supra* note 85, at 55.

⁹⁷ Baker & Bresnahan, *supra* note 85, at 26.

antitrust enforcement is very strong. Indeed, even proponents of this view express reservations about the state of the evidence.⁹⁸

In their review of the state of antitrust law in 2004 Robert Crandall and Clifford Winston found “little empirical evidence that past interventions have provided much direct benefit to consumers or significantly deterred anticompetitive behavior.”⁹⁹ Theirs is not a condemnation of the overall level of enforcement, but a studied conclusion that the enforcement actions that *were* undertaken did not obviously further the goals of the antitrust laws.

As the FTC’s Michael Vita and David Osinski demonstrate in a thorough review of the critical literature, the claim of lax enforcement is fairly unconvincing on its own terms.¹⁰⁰ Although their study considered only merger enforcement, it is merger enforcement, of course, that is most relevant to claims of increasing concentration. Furthermore, the study’s results offer an important cautionary tale regarding the validity of claims of lax enforcement generally. Thus, Vita & Osinski’s thorough assessment of the evidence offered for the claim that “recent merger control has not been sufficiently aggressive”¹⁰¹ finds, to the contrary, that:

[O]f the seven mergers in the 2000s [offered as evidence for the claim], four exhibited no increase in post-merger (or post-remedy) prices []; one had disputed results []; one represented a successful challenge to a consummated merger []; leaving only one (Whirlpool/ Maytag)

⁹⁸ See, e.g., Berry, et al., *supra* note 85, at 59 (“The decline of antitrust enforcement in recent decades may be a contributor to rising markups, although more research is needed to substantiate this conclusion firmly.”).

⁹⁹ Robert W. Crandall & Clifford Winston, *Does Antitrust Policy Improve Consumer Welfare? Assessing the Evidence*, 17 J. ECON. PERSP. 3, 4 (2003). See also *id.* (“[T]he economics profession should conclude that until it can provide some hard evidence that identifies where the antitrust authorities are significantly improving consumer welfare and can explain why some enforcement actions and remedies are helpful and others are not, those authorities would be well advised to prosecute only the most egregious anticompetitive violations.”).

¹⁰⁰ See Michael Vita & David F. Osinski, *John Kwoka’s Mergers, Merger Control, and Remedies: A Critical Review*, 82 ANTITRUST L.J. 361 (2018). See also Michael Vita, *Kwoka’s Mergers, Merger Control, and Remedies: Rejoinder to Kwoka*, 28 RESEARCH IN L. & ECON. 433 (2018).

¹⁰¹ JOHN KWOKA, *MERGERS, MERGER CONTROL, AND REMEDIES: A RETROSPECTIVE ANALYSIS OF U.S. POLICY* 158 (2015).

indicative of potentially lax enforcement.¹⁰²

Similarly, another recent study looking at FTC and DOJ merger enforcement data between 1979 and 2017 finds that:

[C]ontrary to the popular narrative, regulators have become *more* likely to challenge proposed mergers. . . . Indeed, controlling for the number of merger proposals submitted under HSR, *the likelihood of a merger challenge has more than doubled over this period.*¹⁰³

The number of Sherman Act cases brought by the federal antitrust agencies, meanwhile, has been relatively stable in recent years, but several recent blockbuster cases have been brought by the agencies¹⁰⁴ and private litigants,¹⁰⁵ and there has been no shortage of federal and state investigations. But all of this is beside the point: for reasons discussed below, it is highly misleading to count the number of antitrust cases and, using that number alone, make conclusions about how effective antitrust law is.

The primary evidence adduced to support the claim that under-enforcement (and thus the risk of Type II errors) is more significant than over-enforcement (and thus the risk of Type I errors) is that there are not enough cases brought and won. But, even if superficially true, this is, on its own, just as consistent with a belief that the regime is functioning well as it is with a belief that it is functioning poorly. The antitrust laws have evolved over the course of a century, and in that time have developed a coherent body of

¹⁰² Vita & Osinski, *A Critical Review*, *supra* note 100, at 385.

¹⁰³ Jeffrey T. Macher & John W. Mayo, *The Evolution of Merger Enforcement Intensity: What Do the Data Show?*, GEO. CTR. FOR BUS. & PUB. POL'Y (Nov. 2019) (emphasis added), <https://www.dropbox.com/s/69xqogvda9g5ehj/The%20Evolution%20of%20Merger%20Enforcement%20Intensity%20Nov.%20%2719.pdf>.

¹⁰⁴ Among many others, see, for example, Fed. Trade Comm'n v. Surescripts, LLC, Civil Action No. 19-1080-JDB (D.D.C. filed Apr. 17, 2019); Fed. Trade Comm'n v. Qualcomm Inc., No. 17-CV-00220-LHK (N.D. Cal. June 26, 2017); United States v. American Express Co., 88 F. Supp. 3d 143 (E.D.N.Y.2015); Fed. Trade Comm'n v. Actavis, Inc., 570 U.S. 136 (2013); In the Matter of Intel Corp., Fed. Trade Comm'n Docket No. 9341 (Oct. 29, 2010); United States v. Dentsply International, Inc., 399 F.3d 181 (3d Cir. 2005); U.S. v. Visa U.S.A., Inc., 344 F.3d 229 (2d Cir. 2003); United States v. Microsoft Corp. 253 F.3d 34 (D.C. Cir. 2001).

¹⁰⁵ Private civil actions are too numerous to count. Among significant recent cases, see, for example, Apple, Inc. v. Pepper, 139 S. Ct. 1514 (2019); In re Qualcomm Antitrust Litig., 328 F.R.D. 280 (N.D. Cal. 2018); O'Bannon v. Nat'l Collegiate Athletic Ass'n, 802 F.3d 1049 (9th Cir. 2015); American Needle, Inc. v. Nat'l Football League, 560 U.S. 183 (2010).

doctrine to guide firms, courts, and enforcers.¹⁰⁶ It is entirely predictable that firms would, for the most part, be accurately guided in their affairs by the law and would largely avoid offending well-established competition principles:

For a given level of enforcement *effort*, the number of enforcement *actions* (and litigation generally) will be related to the extent of uncertainties and ambiguities about legal outcomes perceived by defendants. . . . If the number [of enforcement actions] is low, the reason could be lax enforcement or it could be clear legal standards and a reputation for vigorous enforcement. . . . Accordingly, in the absence of more information, counts of legal actions by themselves ought not to carry much weight.¹⁰⁷

Further, in such a mature regime, one would expect relatively fewer marginal cases that present truly novel problems. Thus, the casual empiricism noting that 97 percent of Section 2 cases between February 1999 and May 2009 were dismissed based on the plaintiff's failure to show anticompetitive effect¹⁰⁸ is not surprising, nor very telling. The vast majority of these cases—of which the study identifies 215 in all¹⁰⁹—were brought by private plaintiffs pursuing treble damages. Such an outcome is as consistent with an antitrust litigation regime that decisively deters harmful conduct while overly encouraging plaintiffs to attempt to extract payouts as it is one that under-deters anticompetitive conduct.¹¹⁰ A lack of cases and plaintiff's victories cannot, on their own, justify an assertion that the antitrust regime is "lax."

Moreover, assessing the economic consequences of our antitrust laws by

¹⁰⁶ See, e.g., Elyse Dorsey, et al., *Consumer Welfare & the Rule of Law: The Case Against the New Populist Antitrust*, PEPPERDINE L. R. 5-9 (2020).

¹⁰⁷ Lawrence J. White, *Antitrust Activities During the Clinton Administration*, in HIGH STAKES ANTITRUST—THE LAST HURRAH? 11, 12-13 (Robert W. Hahn ed., 2003).

¹⁰⁸ Michael A. Carrier, *The Rule of Reason: An Empirical Update for the 21st Century*, 16 GEO. MASON L. REV. 827, 828 (2009) ("Courts dispose of 97% of [Rule of Reason] cases at the first stage, on the grounds that there is no anticompetitive effect.").

¹⁰⁹ *Id.* at 829 ("I reviewed 738 cases. Of these, 222 involved a court's final determination in a rule of reason case. Out of the 222 cases, 215 were resolved on the grounds that the plaintiff did not prove an anticompetitive effect.").

¹¹⁰ See Manne & Wright, *Innovation*, *supra* note 1, at 199 ("[I]n the vast majority of private litigation involving exclusionary conduct and mergers, trebling has little economic function other than to draw excessive resources into enforcement and exacerbate the Type 1 error problem by attracting follow-on actions.").

considering the effects of only those enforcement actions actually undertaken is woefully misleading. As Douglas Melamed puts it:

Antitrust law [] has a widespread effect on business conduct throughout the economy. Its principal value is found, not in the big litigated cases, but in the multitude of anticompetitive actions that do not occur because they are deterred by the antitrust laws, and in the multitude of efficiency-enhancing actions that are not deterred by an overbroad or ambiguous antitrust law.¹¹¹

For much the same reason, the purported evidence of under-enforcement inferred from the price effects of mergers found in merger retrospective studies¹¹² is unconvincing. Merger retrospectives are not a random sample of mergers from which the overall effect on conduct—including, crucially, conduct by parties *deterred* from merging as a result of enforcement actions against others—can be determined. Such evaluations are capable only of demonstrating the effects of potential Type II errors, and neither collect nor evaluate any evidence bearing on the incidence and cost of Type I errors.

3. The Strength of the Argument for Greater Concern with Type I Errors

As noted, some critics contend that the normative error-cost framework's heightened concern for Type I errors stems from a faulty concern that “type two errors—where the court fails to see anticompetitive conduct that actually exists—are not really problematic because the market itself will correct the situation.”¹¹³ But Easterbrook's argument for enforcement restraint is not based on the assertion that markets are perfectly self-correcting. Rather, his claim is rooted in the notion that the incentives of new entrants to compete for supracompetitive profits in monopolized markets operate to limit the social costs of Type II errors *more effectively than* the legal system's ability to correct or ameliorate the costs of Type I errors:

If the court errs by condemning a beneficial practice, the benefits may be lost for good. Any other firm that uses the condemned practice faces sanctions in the name of stare decisis, no

¹¹¹ A. Douglas Melamed, *Antitrust Law and Its Critics*, 83 ANTITRUST L.J. 269, 285 (2020).

¹¹² See KWOKA, *supra* note 101.

¹¹³ Hovenkamp & Scott Morton, *supra* note 12, at 29.

matter the benefits. If the court errs by permitting a deleterious practice, though, the welfare loss decreases over time. Monopoly is self-destructive. Monopoly prices eventually attract entry. True, this long run may be a long time coming, with loss to society in the interim. The central purpose of antitrust is to speed up the arrival of the long run. But this should not obscure the point: judicial errors that tolerate baleful practices are self-correcting while erroneous condemnations are not.¹¹⁴

It is worth quoting him at length on this issue, as it has become central to the debate over the propriety of the error-cost framework:

One cannot have the savings of decision by rule without accepting the costs of mistakes. We accept these mistakes because almost all of the practices covered by per se rules are anticompetitive, and an approach favoring case-by-case adjudication (to prevent condemnation of beneficial practices subsumed by the categories) would permit too many deleterious practices to escape condemnation. The same arguments lead to the conclusion that the Rule of Reason should be replaced by more substantial guides for decision.

In which direction should these rules err? For a number of reasons, errors on the side of excusing questionable practices are preferable. First, because most forms of cooperation are beneficial, excusing a particular practice about which we are ill-informed is unlikely to be harmful. True, the world of economic theory is full of ‘existence theorems’—proofs that under certain conditions ordinarily-beneficial practices could have undesirable consequences. But we cannot live by existence theorems. The costs of searching for these undesirable examples are high. The costs of deterring beneficial conduct (a byproduct of any search for the undesirable examples) are high. When most examples of a category of conduct are competitive, the rules of litigation should be ‘stacked’ so that they do not ensnare many of these practices just to make sure that the few anticompetitive ones are caught. When most examples of a practice are procompetitive or neutral, the rules should have the same structure (although the opposite slant) as those that apply when almost all examples are anticompetitive.

Second, the economic system corrects monopoly more readily than it corrects judicial errors. There is no automatic way to expunge mistaken decisions of the Supreme Court. A practice once condemned is likely to stay condemned, no matter its benefits. A monopolistic practice wrongly excused will eventually yield to competition, though, as the monopolist's higher prices attract rivalry.

Third, in many cases the costs of monopoly wrongly permitted are small, while the costs of competition wrongly condemned are large. A beneficial practice may reduce the costs of production for every unit of output; a monopolistic practice imposes loss only to the extent it leads to a reduction of output. Under common assumptions about the elasticities of supply and demand, even a small gain in productive efficiency may offset a substantial increase in price and the associated reduction in output. Other things equal, we should prefer the error of tolerating questionable conduct, which imposes losses over a part of the range of output, to the error of condemning beneficial conduct, which imposes losses over the whole range of

¹¹⁴ Easterbrook, *Limits*, *supra* note 26, at 2-3.

output.¹¹⁵

While the Hovenkamp and Scott Morton criticism of the Easterbrook presumption rests on questioning just one of the underlying reasons Easterbrook gives for adopting it, Baker has undertaken a more thorough attempt at refutation.

Baker first claims that

[t]he unstated premise is that entry will generally prove capable of policing market power in the oligopoly settings of greatest concern in antitrust—or at least prove capable of policing market power with a sufficient frequency, to a sufficient extent, and with sufficient speed to make false positives systematically less costly than false negatives.

Yet there is little reason to believe that entry addresses the problem of market power so frequently, effectively, and quickly as to warrant dismissal of concerns regarding false negatives.¹¹⁶

These statements are largely unobjectionable. It has long been understood that the relevant comparison is between the costs of a monopoly erroneously allowed to persist for the time it takes to be mitigated by the market against the costs of erroneously deterring procompetitive behavior for as long as such a legal rule stands. “Markets do not purge themselves of all unfortunate conduct, and purgation (when it comes) is not quick or painless. . . . The point is not that business losses perfectly penalize business mistakes, but that they do so better than the next best alternative.”¹¹⁷

No scholars, including Easterbrook, actually “dismiss[] . . . concerns regarding false negatives”; rather, Easterbrook incorporates these concerns in his assessment by noting the *relative* time frames of market correction versus judicial correction and the *relatively* narrow consequences of allowing anticompetitive conduct versus the broad effects of deterring procompetitive conduct. These descriptive elements cannot be separated, and the assumption has never rested on a claim that Type II errors never happen, or that Type I errors are always virtually costless. Rather, as Easterbrook writes,

¹¹⁵ Easterbrook, *Limits*, *supra* note 26, at 15-16.

¹¹⁶ Baker, *Error Costs*, *supra* note 26, at 9-10.

¹¹⁷ Easterbrook, *Limits*, *supra* note 26, at 24.

“the economic system corrects monopoly *more readily* than it corrects judicial errors.”¹¹⁸ He does not say that the economic system *always and swiftly* corrects monopoly.

The contrary assumption (in the pervasive absence of empirical evidence to support it¹¹⁹) is difficult to maintain. Even if only imperfectly or after a lengthy amount of time, it is a virtual certainty that anticompetitive conduct will be rectified or eventually rendered insignificant or irrelevant. But correction of legal error is far from certain and similarly (at best) distant in time. And there is little reason to be sanguine about the speed with which legal antitrust errors are rectified. It took nearly a century for the *Leegin* Court to correct the error of its per se rule against vertical resale price maintenance in *Dr. Miles*, for example¹²⁰—even though the economics underlying *Dr. Miles* was called into question shortly after it was decided and firmly discredited by the economics profession 50 years later.¹²¹ Yet it took another almost 50 years before the Court finally overturned its per se rule against RPM.¹²²

Ironically, in fact, the extent to which an improperly stringent rule may subsequently be overturned is a function of its clarity. Within a plausible range,¹²³ the more certain and therefore more effective (and, therefore more stringent) the rule, the less likely firms would, whether intentionally or accidentally, run afoul of it. A rule that clearly prohibits all mergers over a certain size, for example, would likely be extremely

¹¹⁸ *Id.* at 16 (emphasis added).

¹¹⁹ See *supra* Section D. 1.

¹²⁰ *Dr. Miles Medical Co. v. John D. Park & Sons Co.*, 220 U.S. 373 (1911).

¹²¹ As Bill Breit recounts, see William Breit, *Resale Price Maintenance: What do Economists Know and When did They Know it?*, 147 J. INSTITUTIONAL & THEORETICAL ECON. 72 (1991), economic opinion on RPM was mixed at the time the case was decided, but significantly undercut by at least one scholar in 1916. See J.R. Turner, *Discussion*, in 6(1) AM. ECON. REV. (Supplement) (1916). Lester Telser swayed economic opinion comprehensively and decisively in relative favor of RPM in 1960. See Lester G. Telser, *Why Should Manufacturers Want Fair Trade?*, 3 J. L. ECON. 86 (1960).

¹²² *Leegin Creative Leather Prod., Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007).

¹²³ Meaning that a rule that was *so* clearly erroneous—say, a rule literally prohibiting “all contracts in restraint of trade” as the Sherman Act nominally demands—would be subject to a different calculus.

effective, and few if any such mergers would be attempted. But this also means that there would be few opportunities to revisit the rule and potentially overturn it. Thus, an improperly harsh rule is more likely subsequently to be overturned the closer it is to the optimal rule—the *less wrong* it is, in other words. But for the same reason, overturning it would also be exactly that much *less* socially beneficial. Over the plausible range of overly-strict erroneous rules, the worst are less likely to be overturned, and the (relatively) best most likely to be reversed.

Moreover, anticompetitive conduct that is erroneously excused may be subsequently corrected, either by another enforcer, a private litigant, or another jurisdiction. An anticompetitive merger that is not stopped, for example, may be later unwound, or the eventual anticompetitive conduct that is enabled by the merger may be enjoined. Ongoing anticompetitive behavior (and, unfortunately, a fair amount of procompetitive behavior) will tend to arouse someone's ire: competitors, potential competitors, customers, input suppliers. That means such behavior will be noticed and potentially brought to the attention of enforcers. For the same reason—identifiable harm (whether actually anticompetitive or not)—it may also be actionable. By contrast, procompetitive conduct that does not occur because it is prohibited or deterred by legal action has no constituency and no visible evidence on which to base a case for revision.

And, even if it did, there is no ready mechanism for revision anyway. A firm improperly deterred from procompetitive conduct has no standing to sue the government for erroneous antitrust enforcement, or the courts for adopting an improper standard. The existence of a judicial correction presupposes, at the very least, some firm engaging in conduct *despite* its illegality in the hope that its conduct will go unnoticed or the prior rule may be misapplied or overturned if it is sued. But the primary effect of a Type I error is the *nonexistence* of such conduct in the first place.

A related critique suggests that “Chicago School antitrust” (often used as a synonym for adherents to the error cost framework) is insensitive to an incumbent

monopolist's ability to deter entry, and thus to mitigate market correction. This critique asserts that the Chicago School approach rests on an indefensible "perfect competition" assumption:

Built into Chicago School doctrine was a strong presumption that markets work themselves pure without any assistance from government. By contrast, imperfect competition models gave more equal weight to competitive and noncompetitive explanations for economic behavior. . . .

. . . Because a firm has a financial incentive to use the profit from market power in order to maintain it, economic theory predicts that this would occur often. The Chicagoans thus needed an additional critical assumption: markets are inherently self-correcting and if left alone, they will work themselves pure.¹²⁴

In other words, the reality that an incumbent monopolist may have the incentive and ability to act strategically to impede entry that could dilute its market power is claimed to be at odds with the Chicago School approach.¹²⁵

Based on this, Hovenkamp and Scott Morton, for example, draw the tendentious conclusion that Chicago/error-cost antitrust scholars are disingenuous ideologues, actively suppressing economic science that contradicts their ideology:

When economic policy takes the model of perfect competition as its starting point, it has nowhere to go but downhill. If we did have a perfectly competitive economy, then of course antitrust intervention would be unnecessary. Faced with the choice of moving to models that provided greater verisimilitude and predictability, but that required more intervention, or clinging to the past, the Chicago School chose the latter.¹²⁶

But this is, at best, a willfully misleading caricature of the Chicago School. Indeed, it is arguably more accurate to say that the pervasiveness of the misallocation of property rights and the presence of transaction costs in the market is not only appreciated by the Chicago School, but it forms a core part of its adherence to Easterbrook's claim that Type

¹²⁴ Hovenkamp & Scott Morton, *supra* note 12, at 4-5 (citing to Easterbrook, *Limits*, *supra* note 26, at 15-16).

¹²⁵ See, e.g., *id.*; Kevin A. Bryan & Erik Hovenkamp, *Startup Acquisitions, Error Costs, and Antitrust Policy*, 87 U. CHI. L. REV. 331, 336 (2020) ("The problem with this argument is that it abstracts away from strategic interactions among the incumbent and the entrant.") (distinguishing the argument that "[e]xcess profits therefore attract entry," attributed to Chicago School pioneer, George Stigler. See George J. Stigler, *A Theory of Oligopoly*, 72 J. POL. ECON. 44 (1964)).

¹²⁶ Hovenkamp & Scott Morton, *supra* note 12, at 37.

I errors are more problematic than Type II errors.¹²⁷

To begin, the assumption of perfect competition is not, in fact, a part of the Chicago School enterprise. Indeed, it was Chicago School scholars¹²⁸ who introduced the analyses that undermined the assumptions of perfect competition that prevailed during the inhospitality era. Thus, for example, scholars like Ronald Coase and Oliver Williamson introduced the fundamental notion that unfettered market allocation was frequently inefficient and that private ordering—ranging from nonstandard contracts to firms themselves—was primarily aimed at ameliorating the *inefficiencies* of atomistic markets.¹²⁹ Scholars like Lester Telser, Ward Bowman, and Howard Marvel explained why assumptions of perfect information were inappropriate.¹³⁰ Chicago scholars like Ben Klein and Armen Alchian developed the notion that the risk of appropriation of assets over time could undermine efficient investment against the perfect competition model that assumed no time inconsistency.¹³¹ Meanwhile, Chicago scholars, who first

¹²⁷ See especially Alan J. Meese, *Market Failure and Non-Standard Contracting: How the Ghost of Perfect Competition Still Haunts Antitrust*, 1 J. COMPETITION L. & ECON. 21 (2005); Alan J. Meese, *Price Theory, Competition, and the Rule of Reason*, 2003 U. ILL. L. REV. 77; Alan J. Meese, *Price Theory and Vertical Restraints: A Misunderstood Relation*, 45 UCLA L. REV. 143 (1997).

¹²⁸ There may be, of course, some disagreement about who counts as a “Chicago School scholar.” For many Chicago School critics, it seems that the Chicago School of antitrust starts and ends with Robert Bork. Others may limit the Chicago School’s scope to actual University of Chicago professors like George Stigler, Aaron Director, Ronald Coase, Lester Telser, Richard Posner, and Frank Easterbrook. But most Chicago School adherents would also count a significant number of non-Chicago-based scholars among their ranks including, among many others, Oliver Williamson, Yale Brozen, Armen Alchian, Harold Demsetz, Ken Elzinga, and Ben Klein.

¹²⁹ See Ronald H. Coase, *The Nature of the Firm*, 4 ECONOMICA 386 (1937); Oliver E. Williamson, *The Vertical Integration of Production: Market Failure Considerations*, 61 AM. ECON. REV. 112 (1971).

¹³⁰ See Ward S. Bowman, *The Prerequisites and Effects of Resale Price Maintenance*, 22 U. CHI. L. REV. 825 (1955); Telser, *supra* note 121; Howard Marvel, *Exclusive Dealing*, 25 J. L. ECON. 1 (1982). Non-Chicago economists, by contrast, saw information dissemination devices like advertising and minimum RPM as costly efforts to extend market power. See e.g., JOE S. BAIN, *PRICE THEORY* 449-50 (1952); William Commanor, *White Motor And Its Aftermath*, 81 HARV. L. REV. 1419 (1967).

¹³¹ See Benjamin Klein, Robert Crawford and Armen Alchian, *Vertical Integration, Appropriable Rents and the Competitive Contracting Process*, 21 J. L. ECON. 297 (1978); Benjamin Klein, *Fisher-General Motors and the Nature of the Firm*, 43 J. L. ECON. 105 (2000); Benjamin Klein, *Asset Specificity and Holdups* in THE ELGAR COMPANION TO TRANSACTION COST ECONOMICS 120-26 (Peter G. Klein & Michael Sykuta, eds., 2010). Pre-Chicago

introduced the “single monopoly profit” theory explaining why much conduct, like tying, should not be per se illegal, also anticipated and understood the limitations of the theory.¹³² Similarly, Chicago scholars anticipated the raising rivals’ cost (“RRC”) literature¹³³ and were the first to note its theoretical possibility as an explanation for deviation from the model of perfect competition.¹³⁴ They also offered the most comprehensive empirical evidence of its existence.¹³⁵

As Professor Meese summarizes, it was Chicago School (and “fellow traveler”) scholars who stepped in to *correct* inappropriate reliance on perfect competition models; they did not *advocate* it:

[Pre-Chicago School] scholars considering questions of market failure did so on the assumption that markets were perfectly competitive. This assumption was not a statement about the actual state of the world, but instead a component of a theoretical model designed

antitrust, in contrast, condemned any conduct that impeded the free flow of factors of production, thus finding things like exclusive territories and RPM illegal per se. *See e.g.*, *Standard Oil Co. v. U.S.*, 337 U.S. 293 (1949); *U.S. v. Topco*, 405 U.S. 596 (1972).

¹³² Despite later critics asserting the definitiveness of such ideas, see Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 397 (2009), early Chicago School analysis recognized price discrimination explanations, the differences between fixed and variable proportions, and the possibility of a leverage argument in tying cases. *See, e.g.*, Ward S. Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19 (1957). *But see* Daniel A. Crane & Joshua D. Wright, *Can Bundled Discounting Increase Consumer Prices Without Excluding Rivals?*, COMPETITION POL’Y INT’L (Autumn 2009) 209, 210 (“The conditions necessary for monopoly leveraging through tying are narrow and rarely exhibited in real markets and, thus, we should continue to be presumptively skeptical about leverage claims.”); Daniel A. Crane, *Mixed Bundling, Profit Sacrifice, and Consumer Welfare*, 55 EMORY L.J. 423, 464 (2006) (“Whether practices facilitating product branding or price discrimination are efficient in this sense raises questions that are fact-dependent at best and virtually always unanswerable in litigation.”).

¹³³ *See* Steven C. Salop & David T. Scheffman, *Raising Rivals’ Costs*, 73 AM. ECON. REV. 267 (1983); Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals’ Costs to Achieve Power over Price*, 96 YALE L.J. 209 (1986); Steven C. Salop & David T. Scheffman, *Cost-Raising Strategies*, 36 J. INDUS. ECON. 19 (1987).

¹³⁴ *See* Aaron Director & Edward H. Levi, *Law and the Future: Trade Regulation*, 51 NORTHWESTERN U. L. REV. 281, 293 (1956) (explaining that a manufacturer’s monopoly power may, in fact, be increased by foreclosing access to distributors when “the restrictions on the outlets impose greater costs on potential competitors than they do on the monopoly company itself”).

¹³⁵ The best-known empirical demonstration of RRC belongs to Chicago School scholars. *See* Elizabeth Granitz & Benjamin Klein, *Monopolization by “Raising Rivals’ Costs”: The Standard Oil Case*, 39 J.L. & ECON. 1 (1996).

to guide scientific research. This methodological habit prevented these scholars from recognizing that various non-standard contracts could overcome market failure. In the absence of a beneficial explanation for these agreements, scholars naturally treated these departures from perfect competition as manifestations of market power.¹³⁶

There is a long and unfortunate history of antitrust institutions (including courts and enforcers) erroneously condemning nonstandard business practices as problematic deviations from a theoretical model of perfect competition.¹³⁷ The urge to condemn practices not fully understood arises from an implicit (or sometimes explicit) assumption that deviations from perfect model assumptions are more likely than not expressions of market power, rather than corrections of underlying market failures. As Ronald Coase described this phenomenon decades ago:

If an economist finds something . . . that he does not understand, he looks for a monopoly explanation. And as in this field we are rather ignorant, the number of ununderstandable practices tends to be rather large, and the reliance on monopoly explanations frequent.¹³⁸

Modern economics and antitrust further persist in this inhospitality tradition by, for example, dismissing business strategy and other “soft” literatures¹³⁹ that identify and explain reasons for market-correcting structures assumed by much of modern economics to be anticompetitive deviations.¹⁴⁰ The continued adherence to perfect competition

¹³⁶ Meese, *Non-Standard Contracting*, *supra* note 127, at 83.

¹³⁷ See Manne & Wright, *Innovation*, *supra* note 1, at 163–77; Elyse Dorsey, *Anything You Can Do, I Can Do Better—Except in Big Tech?: Antitrust’s New Inhospitality Tradition*, 68 KANSAS L. REV. 975 (2019).

¹³⁸ Ronald Coase, *Industrial Organization: A Proposal for Research*, in 3 POLICY ISSUES AND RESEARCH OPPORTUNITIES IN INDUSTRIAL ORGANIZATION 59, 67 (Victor Fuchs, ed., 1972).

¹³⁹ See George A. Akerlof, *Sins of Omission and the Practice of Economics*, 58 J. ECON. LIT. 405 (2020); Deirdre N. McCloskey, *Why Economics Is on the Wrong Track*, in ECONOMICS OF ECONOMISTS: INSTITUTIONAL SETTING, INDIVIDUAL INCENTIVES, AND FUTURE PROSPECTS 211 (Alessandro Lanteri & Jack Vromen eds., 2014).

¹⁴⁰ See, e.g., D. Daniel Sokol, *Vertical Mergers and Entrepreneurial Exit*, 70 FLA. L. REV. 1357, 1371 (2018) (“For the past thirty years, antitrust literature has largely ignored the significant literature within strategy related to vertical integration in the technology setting. Overall, this literature shows the important efficiency-enhancing effects of vertical mergers. These mergers are largely complementary, combining the strengths of the acquiring firm in process innovation with the product innovation of the target firms.”). See also Geoffrey A. Manne, Kristian Stout & Eric Fruits, *The Fatal Economic Flaws of the Contemporary Campaign Against Vertical Integration*, 68 KANSAS L. REV. 923, 925–26 (2020) (“This narrow view of vertical integration thus ignores and threatens to undermine dynamic competition and innovation. Indeed, if we take the organization theory and business strategy literature on the organization of firms in dynamic industries

assumptions by critics of the Chicago School is what induces them to assume that Type I errors are less problematic. Combined with an unsupported (and often implicit) assumption of heightened government ability, this also leads to the unsupported assumption that Type II errors are less problematic.¹⁴¹ As Meese puts it:

Reliance on the perfect competition model, I submit, accounts for the failure of modern scholars to offer any account of the formation and enforcement of non-standard contracts that does not depend on the possession or exercise of market power. By focusing solely on the propensity of non-standard contracts to reduce 'transaction costs,' these scholars ignore the fact that such agreements also reverse market failures by internalizing externalities and thus altering the costs faced by parties to such agreements. Thus, such restraints naturally produce prices or output different from what would obtain in an unbridled market.¹⁴²

The modern approach makes these assumptions even without recognizing it, for instance by relegating consideration of merger efficiencies to a separate analysis from the analysis of competitive effects, on the assumption that efficiencies can manifest only in the form of relative increases in output—not that the efficiency gained may be the elimination of competition and conceivably the reduction in output in the first place. “Within this framework, efficiencies necessarily manifest themselves as lower production costs and thus increased output of the product than existed before the restraint. This merger paradigm is ill-suited for evaluation of restraints that purportedly overcome market failure.”¹⁴³

seriously, the status quo might even be *over-enforcing*, and leading to the deterrence of innovative, procompetitive mergers.”).

¹⁴¹ Here, too, Coase offers the best, most succinct explanation of why this assumption is a problem for a sensible error-cost analysis:

There is, of course, a further alternative, which is to do nothing about the problem at all [because] the costs involved in solving the problem by regulations . . . will often be heavy [and] it will no doubt be commonly the case that the gain which would come from regulating the actions which give rise to the harmful effects will be less than the costs involved in government regulation.

All solutions have costs and there is no reason to suppose that government regulation is called for simply because the problem is not well handled by the market or the firm.

Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 18 (1960).

¹⁴² Meese, *Non-Standard Contracting*, *supra* note 127, at 85.

¹⁴³ *Id.* at 94.

In this conception, any reduction in the number of competitors or constraint on the freedom of market participants is a threat to competition—essentially a movement away from the perfect competition ideal. It does not readily admit of reallocation of resources according to better knowledge and coordination as an inherent benefit, unless it manifests in the form of reduced production costs and increased output.¹⁴⁴ In this sense both Chicago and non-Chicago scholars rest substantially on partial equilibrium analysis and a perfect competition baseline, in contrast to evolutionary,¹⁴⁵ dynamic capabilities,¹⁴⁶ resource-advantage,¹⁴⁷ and similar¹⁴⁸ approaches that do actually eschew the baseline of perfect competition. None of these approaches has had significant influence on the development of antitrust policy and law, however. “For over thirty years, the economics profession has produced numerous models of rational predation. Despite these models and some case evidence consistent with episodes of predation, little of this Post-Chicago School learning has been incorporated into antitrust law.”¹⁴⁹

¹⁴⁴ This is true despite the fact that even non-Chicago School scholars broadly recognize that the reallocation of resources through the elimination of horizontal or vertical competition can increase efficiency. *See, e.g.,* MICHAEL D. WHINSTON, LECTURES ON ANTITRUST ECONOMICS 16-17 (2008) (“It is well-understood by now that the number of firms that unfettered competition can support in a market need not be efficient in such cases. . . . The . . . ruinous competition argument can be viewed as saying exactly this: that unrestricted oligopolistic competition would lead to too few firms . . . relative to what is socially efficient. In such cases, it is possible that an inducement to entry in the form of cartelized prices could actually raise social welfare.”); Baker, *Error Costs*, *supra* note 26, at 30 (noting that distinguishing procompetitive from anticompetitive collusion may be no easier than for exclusion because “horizontal price fixing and market division . . . also can have efficiency justifications”).

¹⁴⁵ *See, e.g.,* Armen Alchian, *Uncertainty, Evolution, and Economic Theory*, 58 J. POL. ECON. 211 (1950); RICHARD R. NELSON & SYDNEY G. WINTER, *AN EVOLUTIONARY THEORY OF ECONOMIC CHANGE* (1982).

¹⁴⁶ *See, e.g.,* David Teece & Pisano, *The Dynamic Capabilities of Firms*, 3 INDUS. & CORP. CHANGE 537 (1994), RICHARD N. LANGLOIS & P.L. ROBERTSON, *FIRMS, MARKETS, AND ECONOMIC CHANGE: A DYNAMIC THEORY OF BUSINESS INSTITUTIONS* (1995).

¹⁴⁷ *See, e.g.,* Shelby D. Hunt, *The Resource-Advantage Theory of Competition: Toward Explaining Productivity and Economic Growth*, 4 J. MGMT. INQUIRY 317 (1995).

¹⁴⁸ *See, e.g.,* EDITH PENROSE, *THE THEORY OF THE GROWTH OF THE FIRM* (1959).

¹⁴⁹ Bruce H. Kobayashi, & Timothy J. Muris, *Chicago, Post-Chicago, and Beyond: Time to Let Go of the 20th Century*, 78 ANTITRUST L.J. 147, 166 (2012).

By stark contrast, the practical, legal status of Easterbrook's claim is today well-enshrined in antitrust law.

[Thirty-six] years after Judge Easterbrook's seminal article, the Supreme Court has effectively written Easterbrook's principal conclusion about error costs into antitrust jurisprudence. Less ideological campaign, more convergent evolution, this process has spanned decades, over a series of opinions, and includes the votes of at least 14 different Justices. Time and again, when confronted with deep questions in antitrust law, those Justices, have reached the same conclusion: False positives are more harmful than false negatives in antitrust.¹⁵⁰

A number of cases establish this, including several seminal Supreme Court and appellate antitrust decisions.¹⁵¹

Nor is it likely that the courts are making an erroneous calculation in the abstract. Evidence of Type I errors is hard to come by, but, for a wide swath of conduct called into question by "Post-Chicago School" and other theories, the evidence of systematic *problems* is virtually nonexistent.¹⁵² This state of affairs may make it appropriate to adjust

¹⁵⁰ Wright & Mungan, *The Easterbrook Theorem and Optimal Standards of Proof*, *supra* note 63, at 5.

¹⁵¹ See, e.g., *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 594 (1986) ("Mistaken inferences in cases such as this one are especially costly, because they chill the very conduct the antitrust laws are designed to protect."); *Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 233 (1993) (refraining from condemning price cuts because of the cost of Type I errors stemming from "the antitrust laws [serving as] an obstacle to the chain of events most conducive to a breakdown of oligopoly pricing and the onset of competition."); *Verizon Comm. Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 414 (2004) ("The cost of false positives counsels against an undue expansion of §2 liability."); *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 559 (2007) (adjusting pleading standards in order to avoid Type I errors, noting that it is "self-evident that the problem of discovery abuse cannot be solved by careful scrutiny of evidence at the Summary Judgment stage, much less lucid instructions to juries; the threat of discovery expense will push cost-conscious defendants to settle even anemic cases before reaching those proceedings"); *Credit Suisse Sec. (USA) LLC v. Billing*, 551 U.S. 264, 281 (2007) ("In light of the nuanced nature of the evidentiary evaluations necessary to separate the permissible from the impermissible, it will prove difficult for those many different courts to reach consistent results."); *Leegin Creative Leather Prod., Inc. v. PSKS, Inc.*, 551 U.S. 877, 895 (2007) ("[R]ules can be counterproductive. They can increase the total cost of the antitrust system by prohibiting procompetitive conduct the antitrust laws should encourage.") (citing Easterbrook, *Vertical Arrangements and the Rule of Reason*, 53 ANTITRUST L. J. 135, 158 (1984)); *Brunswick Corp. v. Riegel Textile Corp.*, 752 F.2d 261, 267 (7th Cir. 1984) (quoting Easterbrook, *supra* note 26, at 33–39); *SCFC ILC, Inc. v. Visa USA, Inc.*, 36 F.3d 958, 965 n.9 (10th Cir. 1994) (quoting Easterbrook, *supra* note 26, at 17); *Saint Alphonsus Med. Ctr.-Nampa Inc. v. St. Luke's Health Sys., Ltd.*, 778 F.3d 775, 790 (9th Cir. 2015) (quoting Easterbrook, *supra* note 26, at 39).

¹⁵² ("[T]here is very little empirical evidence based on in-depth industry studies that RRC is a significant antitrust problem."); Kobayashi, & Muris, *Chicago, Post-Chicago, and Beyond*, *supra* note 149, 166 ("Because of [the Post-Chicago School] literature's focus on theoretical possibility theorems, little evidence exists

the implementation of the error-cost framework in any specific case as the relevant evidence suggests, but it does not counsel its *abandonment*. “Given the state of empirical knowledge, broad policy questions necessarily rely upon imprecisely estimated factors. As a result, a wide range of policy approaches based on the same error cost methodology is possible.”¹⁵³

Thus, for example, for the conduct most relevant to digital markets—vertical restraints—the theoretical literature suggests that firms *can* engage in anticompetitive vertical conduct, but the empirical evidence suggests that, even though firms do impose vertical restraints, it is exceedingly rare that they have net *anticompetitive* effects. Nor is the relative absence of such evidence for lack of looking: countless empirical papers have investigated the competitive effects of vertical integration and vertical contractual arrangements and found predominantly procompetitive benefits or, at worst, neutral effects.¹⁵⁴

To be sure, there are empirical studies showing that vertically integrated firms follow their unilateral pricing incentives, which means that they do increase prices charged to firms that compete downstream, resulting in increased consumer prices. But it also means that they eliminate double marginalization, resulting in *lower* consumer

regarding the empirical relevance of these theories.”). *Id.* at 148.

¹⁵³ *Id.* at 166.

¹⁵⁴ These papers are collected and assessed in several literature reviews including Francine Lafontaine & Margaret Slade, *Exclusive Contracts and Vertical Restraints: Empirical Evidence and Public Policy*, in HANDBOOK OF ANTITRUST ECONOMICS (Paolo Buccirossi ed., 2008); Daniel P. O’Brien, *The Antitrust Treatment of Vertical Restraints: Beyond the Possibility Theorems*, in THE PROS AND CONS OF VERTICAL RESTRAINTS 40, 76–81 (Konkurrensverket Swedish Competition Authority ed., 2008); Cooper, et al., *supra* note 58, at 648; Global Antitrust Institute, *Comment Letter on Federal Trade Commission’s Hearings on Competition and Consumer Protection in the 21st Century, Vertical Mergers* 8 (George Mason Law & Econ. Research Paper No. 18-27, Sep. 6, 2018). Even the reviews of such conduct that purport to be critical are only tepidly so. See Marissa Beck & Fiona Scott Morton, *Evaluating the Evidence on Vertical Mergers* 2 (Working Paper, Feb. 26, 2020), <https://ssrn.com/abstract=3554073> (“many vertical mergers are harmless or procompetitive, but that is a far weaker statement than presuming every or even most vertical mergers benefit competition regardless of market structure.”).

prices. Several recent papers have found both effects—and found both that the effects are small and almost exactly offsetting. As one of these papers concludes:

Overall, we find that both double-marginalization and a supplier's incentive to raise rival's costs have real impacts on consumer prices. However, these effects in the gasoline markets we study are small. Both the double marginalization effect and raising rival's cost effect are roughly 1 to 2 [cents per gallon], or roughly 0.76%-1.5% of the price of gasoline. The net effect of vertical separation on retail gasoline prices was essentially zero. . . .¹⁵⁵

The same is true for other forms of conduct relevant to digital markets. The primary, mainstream theoretical challenge to the normative error-cost framework (and to Chicago School antitrust more generally) is found in the RRC literature.¹⁵⁶ RRC offers a theoretically rigorous, alternative, anticompetitive theory for much ambiguous conduct, including conduct identified by early Chicago School scholars as having plausible procompetitive bases (and often recognized by the courts through the removal of per se illegality).

But, while the identification of a compelling theory of harm for such conduct may alter the specific contours of a decision-theoretic assessment under the Rule of Reason, it does not fundamentally alter the recognition that per se illegality is inappropriate, nor even that any specific doctrinal process element of the Rule of Reason is improperly imposed.¹⁵⁷ Because all of these are implemented in fundamentally discretionary fashion, a court need not, say, *reverse* the burden of production in order to implement the status quo burden-shifting framework in a way that demands relatively more of one side or the

¹⁵⁵ Daniel Hosken & Christopher Taylor, *Vertical Disintegration: The Effect of Refiner Exit from Gasoline Retailing on Retail Gasoline Pricing* 34 (FTC Bureau of Economics Working Paper No. 344, Jul. 2020), https://www.ftc.gov/system/files/documents/reports/vertical-disintegration-effect-refiner-exit-gasoline-retailing-retail-gasoline-pricing/working_paper_344.pdf. For papers with similar results, see Fernando Luco & Guillermo Marshal, *The Competitive Impact of Vertical Integration by Multiproduct Firms*, 12 AM. ECON. J.: MICROECONOMICS 1 (2020); Gregory S. Crawford, Robin S. Lee, Michael D. Whinston & Ali Yurukoglu, *The Welfare Effects of Vertical Integration in Multichannel Television Markets*, 86 ECONOMETRICA 891 (2018).

¹⁵⁶ See *supra* note 133.

¹⁵⁷ For a discussion of how elements of antitrust doctrine implement error-cost concerns, see *supra* Section I.C. See generally Manne & Stout, *supra* note 1.

other based on the court's understanding of the relative applicability of anticompetitive RRC theories and procompetitive Chicago School theories.

Thus it is crucial to note that, despite claims by Chicago School critics that RRC and other developments in economic theory (most notably game theory¹⁵⁸) should undermine the normative error-cost approach and lead courts to different outcomes, there is not, in fact, a sound evidentiary basis on which to rest this assertion. Judged on the very criteria by which Chicago School critics maintain the superiority of Post-Chicago theories, in fact, these models distinctly fail to “provide[] greater verisimilitude and predictability.”¹⁵⁹ Indeed, they may even *reduce* our ability to make reliable predictions on which to base policy: “While additional theoretical sophistication and complexity is useful, reliance on untested and in some cases untestable models can create indeterminacy, which can retard rather than advance knowledge.”¹⁶⁰ As Kobayashi and Muris emphasize, the introduction of new possibility theorems, particularly uncorroborated by rigorous empirical reinforcement, does not necessarily alter the implementation of the error-cost analysis:

While the Post-Chicago School literature on predatory pricing may suggest that rational predatory pricing is theoretically possible, such theories do not show that predatory pricing is a more compelling explanation than the alternative hypothesis of competition on the merits. Because of this literature's focus on theoretical possibility theorems, little evidence exists regarding the empirical relevance of these theories. Absent specific evidence regarding the plausibility of these theories, the courts . . . properly ignore such theories.¹⁶¹

RRC is no more amenable to concrete implementation by courts: “As with almost all monopolization strategies, one cannot distinguish an anticompetitive use of RRC from competition on the merits, absent a detailed factual inquiry. . . . [T] here is very little empirical evidence based on in-depth industry studies that RRC is a significant antitrust

¹⁵⁸ Hovenkamp & Scott Morton, *supra* note 12.

¹⁵⁹ *Id.* at 37.

¹⁶⁰ Kobayashi, & Muris, *Chicago, Post-Chicago, and Beyond*, *supra* note 149, at 148.

¹⁶¹ *Id.* at 166.

problem.”¹⁶²

II. ERROR COSTS IN DIGITAL MARKETS: THE PROBLEM OF INNOVATION

The arguments in favor of the normative error-cost framework are even stronger in the context of the digital economy. The concern with error costs is especially high in dynamic markets in which it is difficult to discern the real competitive effects of a firm’s conduct from observation alone. And for several reasons, antitrust decision-making in the context of innovation tends much more readily toward distrust of novel behavior, thus exacerbating the risk and cost of over-enforcement.

As noted, there is an “uneven history of courts and enforcement officials in enhancing welfare through antitrust,” suggesting reason to be skeptical.¹⁶³ In the face of innovative business conduct, the concern is compounded by the problematic incentives of antitrust economists. As Manne and Wright note:

Innovation creates a special opportunity for antitrust error in two important ways. The first is that innovation by definition generally involves new business practices or products. Novel business practices or innovative products have historically not been treated kindly by antitrust authorities. From an error-cost perspective, the fundamental problem is that economists have had a longstanding tendency to ascribe anticompetitive explanations to new forms of conduct that are not well understood.¹⁶⁴

The two problems are related. Novel practices generally result in monopoly explanations from the economics profession, followed by hostility from the courts. Often a subsequent, more-nuanced economic understanding of the business practice emerges, recognizing its procompetitive virtues, but this also may come too late to influence courts and enforcers in any reasonable amount of time—and it may never tip the balance

¹⁶² *Id.* at 162.

¹⁶³ David McGowan, *Innovation, Uncertainty, and Stability in Antitrust Law*, 16 BERKELEY TECH. L.J. 729, 738 (2001). McGowan does go on to argue that “skepticism is not surrender. It instead demands nothing more than a clear-eyed look at evidence of market structure and behavior, and rigorous analysis of the implications of both for social welfare.” *Id.*

¹⁶⁴ Manne & Wright, *Innovation*, *supra* note 1, at 164.

sufficiently to appreciably alter established case law. Where economists' career incentives skew in favor of generating models that demonstrate inefficiencies and debunk the Chicago School status quo, this dynamic is not unexpected.

At the same time, however, defendants engaged in innovative business practices that have evolved over time through trial and error regularly have a difficult time articulating a justification that fits either an economist's limited model or a court's expectations. Easterbrook ably described the problem:

[E]ntrepreneurs often flounder from one practice to another trying to find one that works. When they do, they may not know why it works, whether because of efficiency or exclusion. They know only that it works. If they know why it works, they may be unable to articulate the reason to their lawyers—because they are not skilled in the legal and economic jargon in which such "business justifications" must be presented in court. . . .

. . . It takes economists years, sometimes decades, to understand why certain business practices work, to determine whether they work because of increased efficiency or exclusion. To award victory to the plaintiff because the defendant has failed to justify the conduct properly is to turn ignorance, of which we have regrettably much, into prohibition. That is a hard transmutation to justify.¹⁶⁵

Imposing a burden of proof on entrepreneurs—often to prove a negative in the face of enforcers' pessimistic assumptions—when that burden can't plausibly be met can serve only to impede innovation.¹⁶⁶

Even economists know very little about the optimal conditions for innovation. As Herbert Simon noted in 1959,

Innovation, technological change, and economic development are examples of areas to which a good empirically tested theory of the processes of human adaptation and problem solving could make a major contribution. For instance, we know very little at present about how the rate of innovation depends on the amounts of resources allocated to various kinds of research and development activity. Nor do we understand very well the nature of "know how," the costs of transferring technology from one firm or economy to another, or the effects of various

¹⁶⁵ Easterbrook, *Exclusionary Conduct*, *supra* note 26, at 975. See also Manne & Wright, *Innovation*, *supra* note 1, at 165; Geoffrey A. Manne & E. Marcellus Williamson, *Hot Docs vs. Cold Economics: The Use and Misuse of Business Documents in Antitrust Enforcement and Adjudication*, 47 ARIZ. L. REV. 609, 619-24 (2005) (discussing the disconnect between business knowledge and economic reality). See generally Alchian, *supra* note 145.

¹⁶⁶ See generally Adam Thierer, *Technopanics, Threat Inflation, and the Danger of an Information Technology Precautionary Principle*, 14 MINN. J. L. SCI. & TECH. 309 (2013).

kinds and amounts of education upon national product. These are difficult questions to answer from aggregative data and gross observation, with the result that our views have been formed more by arm-chair theorizing than by testing hypotheses with solid facts.¹⁶⁷

Our understanding has not progressed very far since 1959, at least not insofar as it is applied to antitrust.¹⁶⁸ Simon astutely infers that innovation would be a function of “human adaptation and problem solving”; “the amounts of resources allocated to various kinds of research and development activity”; the nature of ‘know how’; “the costs of transferring technology”; and “the effects of various kinds and amounts of education.” But economists today tend to focus primarily on how market structure affects innovation. As Teece notes, however:

A less important context for innovation, although one which has received an inordinate amount of attention by economists over the years, is market structure, particularly the degree of market concentration. Indeed, it is not uncommon to find debate about innovation policy among economists collapsing into a rather narrow discussion of the relative virtues of competition and monopoly. . . .

. . . [Yet] reviews of the extensive literature on innovation and market structure generally find that the relationship is weak or holds only when controlling for particular circumstances. The emerging consensus is that market concentration and innovation activity most probably either coevolve or are simultaneously determined.¹⁶⁹

Even to the extent that economic science has developed some better theories of

¹⁶⁷ Simon, *Theories of Decision-Making*, *supra* note 4, at 278-79.

¹⁶⁸ See, e.g., Manne & Wright, *Introduction*, *supra* note 1, at 1 (“[T]he ratio of what is known to unknown with respect to the relationship between innovation, competition, and regulatory policy is staggeringly low. In addition to this uncertainty concerning the relationships between regulation, innovation, and economic growth, the process of innovation itself is not well understood.”); Manne & Wright, *Innovation*, *supra* note 1, at 166 (“[A]s a general rule, economists know much less about the relationship between competition and innovation, and in turn, consumer welfare, than they do about standard price competition.”); Joshua D. Wright, *Antitrust, Multi-Dimensional Competition, and Innovation: Do We Have An Antitrust Relevant Theory of Competition Now?*, in *COMPETITION POLICY AND PATENT LAW UNDER UNCERTAINTY: REGULATING INNOVATION* (Geoffrey A. Manne & Joshua D. Wright eds., 2010); Richard J. Gilbert, *Competition and Innovation*, in 1 *ISSUES IN COMPETITION LAW AND POLICY* 577, 583 (W. Dale Collins ed., 2008) (“[E]conomic theory does not provide unambiguous support either for the view that market power generally threatens innovation by lowering the return to innovative efforts nor the Schumpeterian view that concentrated markets generally promote innovation.”).

¹⁶⁹ David J. Teece, *Technological Innovation and the Theory of the Firm: The Role of Enterprise-Level Knowledge, Complementarities, and (Dynamic) Capabilities*, in 1 *HANDBOOK OF THE ECONOMICS OF INNOVATION* 679, 687-88 (Bronwyn H. Hall & Nathan Rosenberg eds., 2010).

innovation and its relationship with market structure and antitrust, the literature has still failed to develop clear and concrete theories or empirics that are readily implementable by courts or enforcers in the face of complex economic conditions.¹⁷⁰ Particularly to the extent that contemporary monopolization theorems purport to address novel, often-innovative business practices, they are problematic for antitrust law and policy aiming to maximize welfare (minimize errors), for several reasons.

First, they engender circumstances that increase the likelihood of antitrust complaints, investigations, and enforcement actions.¹⁷¹ In the face of limited evidence, untestable implications, and possibility theorems regarding the consequences of novel, innovative conduct, a proper application of error-cost principles would likely be expected to deter intervention. Yet it is precisely in these situations that intervention may be *more* likely.

On the one hand, this may be because in the absence of information disproving a presumption of anticompetitive effect, there is an easier case to be made against the conduct—this despite putative burden-shifting rules that would place the onus on the complainant. On the other hand, successful innovations are also more likely to arouse the ire of competitors and/or customers, and thus both their existence and their negative characterization are more likely brought to the attention of courts or enforcers—abetted in private litigation by the lure of treble damages.

Antitrust is skeptical of, and triggered by, various changes in *status quo* conduct

¹⁷⁰ This problem is endemic to contemporary economics' possibility theorems, of course. See, e.g., Richard A. Posner, *Antitrust in the New Economy*, 68 ANTITRUST L.J. 925, 927 (2001) ("Whenever an antitrust court is called on to balance efficiency against monopoly, there is trouble; legal uncertainty, and the likelihood of error, soar."); Manne & Wright, *Innovation*, *supra* note 1, at 172 ("Thus, a key critique of the modern industrial organization literature and its possibility theorems involving anticompetitive behavior has been that it fails to consistently produce testable implications.").

¹⁷¹ See Manne & Wright, *Innovation*, *supra* note 1, at 185 ("Business innovations, like product innovations, confer competitive advantages and, while remaining ill-understood, engender uncertainty, rent-seeking, and reprisal.").

and relationships. This applies not only to economists (as discussed above),¹⁷² but also to competitors (who are likely to raise challenges to innovative, even if perfectly procompetitive, conduct that makes competition harder), enforcers (who are inherently on the look-out for cutting-edge cases because clearly infringing conduct is rare and opportunities to expand their authority attractive), and judges (who may be particularly swayed by economists' possibility theorems to believe that they can make upholdable new law).

Business process and organizational innovations are also more relevant to the sorts of conduct with which antitrust concerns itself. New technological advance is rarely an *inherent* problem for antitrust; rather, its presence increases the potential cost of over-deterrence, but not necessarily its likelihood.¹⁷³ But novel technologies are frequently accompanied by novel business arrangements—and these are of particular concern to antitrust.

The problem stemming from both of these is that, to a first approximation (and especially in the digital economy), change (including by incumbents) is the hallmark of competition itself. In these markets competition means innovation and innovation means change. Since Jorde and Teece began writing about antitrust, and especially market definition, in high-tech industries in the late 1980s, we've been on notice that traditional, static, price-based antitrust analysis doesn't work well for understanding these markets. For these industries, performance, not price, is paramount and competition generally unfolds sequentially rather than contemporaneously—which means innovation is key.¹⁷⁴

¹⁷² *Id.* (“Business innovations present interesting opportunities for economic analysis (to an even greater extent than product innovations, in fact) and are thus susceptible to the systematic biases in economic analysis that we have discussed.”).

¹⁷³ As noted below, however, a significant impetus toward “precautionary antitrust” often attends technological innovation—in fact increasing the likelihood of antitrust over-deterrence. *See infra* notes 184 to 188 and accompanying text.

¹⁷⁴ *See, e.g.,* Thomas M. Jorde & David J. Teece, *Competing Through Innovation: Implications for Market Definition*, 64 CHI.-KENT L. REV. 741, 742 (1988) (“Moreover, in markets characterized by rapid technological

Second, over-detering business model and contractual innovations may be even more damaging to dynamic welfare and economic growth than is reducing incentives to engage in *technological* innovation.¹⁷⁵ “Although technology change is emphasized in the Schumpeterian tradition, organizational architectures sometimes are the primary force shaping logics of competition. . . . The effects of such organizational innovations . . . can be as profound as that of technology innovations.”¹⁷⁶

Easterbrook’s 1984 article was particularly important for its identification of the risk of error-cost problems in the face of “new method[s] of making and distributing a product.”¹⁷⁷ The disconnect between business and contractual innovations in the market and economic understanding of them is significant. As Easterbrook noted:

Wisdom lags far behind the market. It is useful for many purposes to think of market behavior as random. Firms try dozens of practices. Most of them are flops, and the firms must try something else or disappear. Other practices offer something extra to consumers—they reduce costs or improve quality—and so they survive. In a competitive struggle the firms that use the best practices survive. Mistakes are buried.

Why do particular practices work? The firms that selected the practices may or may not know what is special about them. They can describe what they do, but the why is more difficult. Only someone with a very detailed knowledge of the market process, as well as the time and data needed for evaluation, would be able to answer that question. Sometimes no one can answer it.¹⁷⁸

The inclination among economists (and especially decision-makers relying on

progress, competition often takes place on the basis of performance features and not price.”). *See also* David S. Evans & Richard Schmalensee, *Some Economic Aspects of Antitrust Analysis in Dynamically Competitive Industries*, in 2 INNOVATION POLICY AND THE ECONOMY 1, 3 (Adam B. Jaffe, et al., eds., 2002) (“The defining feature of new-economy industries is a competitive process dominated by efforts to create intellectual property through R&D, which often results in rapid and disruptive technological change.”).

¹⁷⁵ *See* Manne & Wright, *Innovation*, *supra* note 1, at 185 (“These innovations are also extremely valuable, in particular because they may be directly extendable to a much wider range of the economy than product innovations, and like product innovations, business innovations can have wide-ranging, dynamic follow-on effects throughout the economy.”).

¹⁷⁶ WILLIAM P. BARNETT, *THE RED QUEEN AMONG ORGANIZATIONS: HOW COMPETITIVENESS EVOLVES* 19-20 (2008).

¹⁷⁷ Easterbrook, *Limits*, *supra* note 26, at 5.

¹⁷⁸ *Id.*

economic science), as noted, is to condemn these practices. “The critical point here is that innovation is closely related to antitrust error. The argument is simple. Because innovation involves new products and business practices, courts and economists’ initial understanding of these practices will skew initial likelihoods that innovation is anticompetitive and the proper subject of antitrust scrutiny.”¹⁷⁹

And yet it is precisely when confronted with innovative products and innovative contracts that the consequences of erroneous enforcement and over-deterrence are increased. There is little evidence, however, to suggest that the academic literature appropriately recognizes and calls out these risks, or counsels against the formulation of legal proscriptions based on stylized possibility theorems.¹⁸⁰

Third, many technological innovations, especially those that facilitate or give rise to innovations in business organization, marketing, or distribution, tend to attract a disproportionate and generally unwarranted degree of skepticism by antitrust authorities looking to past experience and existing commercial relationships to assess their likely effects.

One problem is that scholars, regulators, politicians, and, of course, competitors tend to assume that markets were less problematic in the past, and that new business realities tend to undermine relatively beneficial, functioning markets, thus fundamentally altering the optimal balance of antitrust toward enforcement. Many further argue in favor of more aggressive interventions in digital markets, aimed at “restoring” markets to the state that existed before allegedly anticompetitive conduct

¹⁷⁹ Manne & Wright, *Innovation*, *supra* note 1, at 167.

¹⁸⁰ There are occasional exceptions, of course. *See, e.g.*, Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 AM. ECON. REV. 837 (1990) (“While the analysis vindicates the leverage hypothesis on a positive level, its normative implications are less clear. Even in the simple models considered here, which ignore a number of other possible motivations for the practice, the impact of this exclusion on welfare is uncertain. This fact, combined with the difficulty of sorting out the leverage-based instances of tying from other cases, makes the specification of a practical legal standard extremely difficult.”).

occurred.

The upshot is that antitrust scholarship often emphasizes the risks that new market realities create for competition, while idealizing the extent to which previous market realities led to procompetitive outcomes. This defect is not confined to digital markets, and is, in fact, nothing new. As early as 1942 Joseph Schumpeter derided “the creation of an entirely imaginary golden age of perfect competition that at some time somehow metamorphosed itself into the monopolistic age.”¹⁸¹ But it is undoubtedly magnified in digital markets.

Underlying these numerous regulatory and scholarly interventions is a fear that new technologies will somehow cause a departure from competitive markets and innovation, moving the economy towards a new paradigm of monopolization and rent-seeking. Scholars and policymakers thus conclude that, facilitated by new market realities, firms that have achieved powerful positions today will be able to maintain their dominance for decades to come. This is a form of “antitrust dystopia.”¹⁸² For its proponents, the future of competition is bleak, despite evidence that humanity has progressed tremendously throughout the last decades, and that information technology and competition have played a huge role in this transformation.¹⁸³

The fear of the new—and the assumption that “ununderstandable practices”¹⁸⁴ emerge from anticompetitive impulses and generate anticompetitive effects—permeates not only much antitrust scholarship, but antitrust *doctrine* as well. There is an inherent conservatism in all law, especially that developed (as antitrust) through a common-law-

¹⁸¹ JOSEPH A. SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* 71 (Routledge ed. 1976).

¹⁸² The term, “antitrust dystopia,” along with its cousin, “antitrust nostalgia,” is from Dirk Auer & Geoffrey A. Manne, *Antitrust Dystopia and Antitrust Nostalgia: Alarmist Theories of Harm in Digital Markets* (ICLE Working Paper, forthcoming).

¹⁸³ See M. RIDLEY, *THE RATIONAL OPTIMIST: HOW PROSPERITY EVOLVES* (2010). See also S. PINKER, *ENLIGHTENMENT NOW: THE CASE FOR REASON, SCIENCE, HUMANISM, AND PROGRESS* (2018).

¹⁸⁴ Coase, *Industrial Organization*, *supra* note 138, at 67.

like evolution from general principles. While much antitrust doctrine is perfectly capable of accommodating novel technology and innovative business processes, much doctrine is also inherently backward looking: It assesses novel practices by reference to previous structures, organizations, contracts, conduct, and the like, and largely evaluates them in the context of existing (and thus previously developed) competitive structures. As a result, there is a built-in “nostalgia bias” to much antitrust, which casts a skeptical eye upon novel conduct.

These dystopia and nostalgia biases induce proponents to resort to precautionary reasoning. Yet, while there is undoubtedly some level of uncertainty at play in digital markets, the fear that that uncertainty conceals indelibly problematic, fat-tailed outcomes¹⁸⁵ is unsupported. Yet such precautionary principle-type reasoning has increasingly permeated antitrust policy discourse.¹⁸⁶

Arguments that claims today regarding false-positive error costs wrongly assume that the earlier, inhospitality tradition of antitrust still holds have some merit, but not as much as proponents think.¹⁸⁷ It is certainly true, as noted above, that Easterbrook’s normative error-cost analysis has become a core part of contemporary antitrust jurisprudence,¹⁸⁸ and courts are surely not as quick to strike down unfamiliar practices as

¹⁸⁵ That is, low probability/high impact events, sometimes referred to as “Black Swans.” See N.N. TALEB, *THE BLACK SWAN: THE IMPACT OF THE HIGHLY IMPROBABLE* xvii (2008).

¹⁸⁶ See, e.g., Aurelien Portuese, *The Rise of Precautionary Antitrust: An Illustration with the EU Google Android Decision*, CPI EUROPE COLUMN (Nov. 17, 2019), <https://www.competitionpolicyinternational.com/the-rise-of-precautionary-antitrust-an-illustration-with-the-eu-google-android-decision/>. See also Thierer, *supra* note 166, at 342-43 (noting the incentives of competitors to foment such fears, including in the antitrust context, to burden their rivals with “regulation that might constrain their efforts to innovate, expand, and compete. Unfortunately, when companies and other interests employ such tactics, it merely raises the general level of anxiety about information technology and the Internet more broadly”).

¹⁸⁷ See, e.g., William H. Page, *Antitrust Review of Mergers in Transition Economies: A Comment, With Some Lessons from Brazil*, 66 U. CIN. L. REV. 1113, 1124 (1998) (“This approach is widely discredited in modern American antitrust because courts, recognizing the limits of their powers of evaluation and remediation, have come to respect the dynamism of the market, and to hesitate before prohibiting complex practices.”).

¹⁸⁸ See *supra* note 151.

they once were. But that doesn't mean there's no reason for concern.

The combination of the anti-market bias in favor of monopoly explanations for innovative conduct that courts, enforcers, and economists do not understand, the unwarranted fear of new technologies leading to “technopanics,” and the increased, economy-wide stakes of antitrust intervention against innovative technologies and business practices, increases both the *likelihood* that antitrust errors surrounding digital markets will be Type I, false-positive errors, as well as increasing their *cost*.

A. The Costly Absence of Dynamic Analysis

In particular, with the ascendancy of digital-economy antitrust, the risk of error from unduly static antitrust analysis is magnified, and the relative historical success of the error-cost framework may not portend a particularly restrained or accurate mode of antitrust analysis going forward. Indeed, the rise of antitrust populism—spurred on most significantly by concerns about digital markets—and the overwhelming focus on digital markets by antitrust enforcers around the globe suggest that Type I error-cost concerns will be an increasingly significant problem for the foreseeable future.

A standout reason for this concern is the disconnect between the shallowness of appreciation for platform economics, economies of scale, network effects, data, and other attributes of digital markets and the deviations these occasion in business conduct from perfectly competitive, atomistic markets.

In oligopolistic markets, and especially markets predominated by platforms, “[a] stable outcome will require restrictions on the freedom of market participants; that is, stability will require some sort of coordination. These restrictions look like the bread and butter of antitrust lawsuits—cartels, tacit collusion, vertical restrictions, and mergers.”¹⁸⁹

¹⁸⁹ George Bittlingmayer, *The Economic Problem of Fixed Costs and What Legal Research Can Contribute*, 14 L. & SOCIAL INQUIRY 739, 740 (1989). Bittlingmayer notes Lester Telser's foundational role in this literature—the theory of the empty core—collected in a series of books in the late 1970s and 1980s. See LESTER G. TELSER, *ECONOMIC THEORY AND THE CORE* (1978); LESTER G. TELSER, *A THEORY OF EFFICIENT COOPERATION AND*

“Clearly, when no competitive equilibrium is possible, something else has to take its place. Since the problems arise from too much competition and too little cooperation, the institutions that solve these problems necessarily imply a variety of arrangements that look ‘anticompetitive.’”¹⁹⁰

As a result—and paradoxically—an excessive concern for the quite-possibly costly, static effects of innovation arising from nonstandard business models, product designs, and pricing schemes on current users or competitors can harm welfare overall.¹⁹¹

With dynamic competition, new entrants and incumbents alike engage in new product and process development and other adjustments to change. Frequent new product introductions followed by rapid price declines are commonplace. Innovations stem from investment in R&D or from the improvement and combination of older technologies. Firms continuously introduce product innovations, and from time to time, dominant designs emerge. With innovation, the number of new entrants explodes, but once dominant designs emerge, implosions are likely, and markets become more concentrated. With dynamic competition, innovation and competition are tightly linked.¹⁹²

Platforms especially have created problems for antitrust.¹⁹³ To begin with, much of the most important and insightful literature on platform economics has had scant influence on antitrust economics.¹⁹⁴ This literature consistently and compellingly

COMPETITION (1987); and LESTER G. TELSER, *THEORIES OF COMPETITION* (1988). See also George Bittlingmayer, *Decreasing Average Cost and Competition: A New Look at the Addyston Pipe Case*, 25 J.L. & ECON. 201 (1982); George Bittlingmayer, *Price-Fixing and the Addyston Pipe Case*, 5 RES. L. & ECON. 57 (1983); George Bittlingmayer, *Did Antitrust Policy Cause the Great Merger Wave?*, 28 J.L. & ECON. 77 (1985).

¹⁹⁰ Bittlingmayer, *The Economic Problem of Fixed Costs*, *id.*, at 751.

¹⁹¹ See Thomas M. Jorde & David J. Teece, *Antitrust Policy and Innovation: Taking Account of Performance Competition and Competitor Cooperation*, 147 J. INST'L & THEORETICAL ECON. 118, 120 (1991) (“At minimum, we would propose that when the promotion of static consumer welfare and innovation are in conflict, the courts and administrative agencies should favor innovation. Adopting dynamic competition and innovation as the goal of antitrust would, in our view, serve consumer welfare over time more assuredly than would the current focus on short-run consumer welfare.”).

¹⁹² J. Gregory Sidak & David J. Teece, *Dynamic Competition in Antitrust Law*, 5 J. COMPETITION L. & ECON. 581, 604 (2009).

¹⁹³ The following (through the text accompanying note 200) draws substantially from Geoffrey A. Manne, *Against the vertical discrimination presumption*, CONCURRENCES N° 2-2020 (2020).

¹⁹⁴ See, *inter alia*, Jonathan M. Barnett, *The Host's Dilemma: Strategic Forfeiture in Platform Markets for Informational Goods*, 124 HARV. L. REV. 1861 (2011); David J. Teece, *Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy*, 15 RES. POL'Y 285 (1986); Andrei Hagiu

describes the myriad ways in which platform ecosystems are optimized not by pure openness, but by various, limited restrictions imposed by platforms on their users—including both consumers and complementors who may also be competitors.¹⁹⁵

The presumption that antitrust should tend to force platforms to allow complementors to compete on their preferred terms, free of constraints or competition from platforms, is a species of the idea that platforms are most socially valuable when they are treated as “essential facilities.” But such an approach is not without costs, most importantly in terms of the effective operation of the platform and its own incentives for innovation. Platforms have an incentive to *optimize* openness and to assure complementors of sufficient returns on their platform-specific investments. This doesn’t mean that maximum openness is optimal, however; in fact, typically a well-managed platform will exert control where doing so is most important, and openness where control is least meaningful.¹⁹⁶

A properly dynamic analysis would view these limited constraints with far less skepticism than much of the antitrust community does currently. This does not mean there is no risk that a platform will impose anticompetitive constraints. But the imposition of platform constraints is so widespread that, unless the argument is that independent complementors and their investors are improbably ignorant or repeatedly deceived, it must be the case that they develop their businesses models and operate their businesses in recognition of the risk involved. This implies either that the risk is not as substantial as critics contend or else that complementors are sufficiently compensated for it. In either

& Kevin Boudreau, *Platform Rules: Multi-Sided Platforms As Regulators*, in PLATFORMS, MARKETS AND INNOVATION (Annabelle Gawer, ed. 2009); Kevin Boudreau, *Open Platform Strategies and Innovation: Granting Access vs. Devolving Control*, 56 MGMT. SCI. 1849 (2010).

¹⁹⁵ See generally John M. Yun, *Overview of Network Effects & Platforms in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020); and Michael Salinger, *Self-Preferencing*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

¹⁹⁶ See Hagiu & Boudreau, *Platform Rules*, *supra* note 194; Barnett, *The Host’s Dilemma*, *supra* note 194.

case, the fact that platform ecosystems are so vast and successful, and that they encourage significant innovation, suggests that we should hesitate before assuming that incentives to invest are inefficiently reduced by apparent, static foreclosure risks.

A complementor that makes itself dependent upon a platform for distribution of its content does take a risk. Although it may benefit from greater access to users, it places itself at the mercy of the other—or at least faces great difficulty (and great cost) adapting to unanticipated platform changes over which it has no control. This is a species of the “asset specificity” problem that animates much of the Transaction Cost Economics literature.¹⁹⁷ But the risk may be a calculated one, and the imposition of constraints on complementors by and to the benefit of platforms may be optimal. As such, assuming harm from ex post foreclosure risks overly encouraging ex ante risk-taking by complementors, under-investment in platforms and platform innovation, and the sub-optimal allocation of resources.

Without adequate consideration of such dynamic effects, antitrust enforcers and courts are likely to make costly Type I errors—as seems to have happened in the European Commission’s *Google Shopping* case, for example. In its decision, the Commission asserts that Google’s prioritization of its own shopping results harms competition because it reduces traffic to complementary independent comparison shopping sites, potentially foreclosing them from minimum viable scale and causing them to under-innovate.¹⁹⁸ The decision does not identify actual consumer harm; it infers it from the reduction in traffic to comparison shopping sites, constituting an alleged impairment of an “effective competition structure.”¹⁹⁹

¹⁹⁷ See, e.g., Oliver E. Williamson, *The Vertical Integration of Production: Market Failure Considerations*, 61 AM. ECON. REV. 112 (1971); Benjamin Klein, *Asset Specificity and Holdups*, in THE ELGAR COMPANION TO TRANSACTION COST ECONOMICS 120-26 (Peter G. Klein & Michael Sykuta, eds., 2010).

¹⁹⁸ Commission Decision No. AT.39740 (Google Search (Shopping)) at ¶¶ 591-607.

¹⁹⁹ *Id.* at ¶ 332.

But the fact that Google creates an opportunity for complementors to rely upon it doesn't mean that a firm's decision to do so—and to do so without a viable contingency plan—makes good business sense. In the case of comparison shopping sites, it was entirely predictable that Google's algorithm would change over time. It was also entirely predictable that it would change in ways that could diminish or even eviscerate their traffic.²⁰⁰

The problem with the superficial analysis that assumes harm from the diminution of traffic to independent competitors is this: Protecting complementors from the inherent risk in a business model in which they are entirely dependent upon another company with which they have no contractual relationship is at least as likely to encourage excessive risk taking and inefficient overinvestment as it is to ensure that investment and innovation aren't too low.

The relatively static, "nostalgic" analysis that essentially assumes that any given complementor that succeeded in the past "should" succeed in the future (especially against competition from a platform's own, integrated product) is deeply flawed. Past success under a particular set of platform constraints is no reason to assume that a complementor would provide any measure of innovation in the future under different constraints, nor is it an argument for insisting that the platform's constraints cannot change. Indeed, if platform discrimination is rampant, the fact that a complementor previously succeeded under different, discriminatory conditions offers no reason to think that that there was an "effective competition structure" in the first place and thus that its previous success was in any way "merited."

What this overly static analysis misses is that, while constraints on

²⁰⁰ As one online marketing/SEO expert put it: "counting on search engine traffic as your primary traffic source is a bit foolish to say the least. . . ." See Ana Hoffman, *Where Does Website Traffic Come From: Search Engine and Referral Traffic*, TRAFFIC GENERATION CAFÉ (Mar. 12, 2018), <https://trafficgenerationcafe.com/website-traffic-source-search-engine-referral/>.

complementors' access and use may look restrictive compared to an imaginary world where such restrictions were not allowed, in such a world the platform would not be built in the first place because it would not ensure enough revenue. Similarly, if platforms ever operated near the other extreme—full appropriation—the platform also would not be built because it would attract no complementors. Thus, platforms operate in a delicate middle ground in which some constraints on user/complementor freedom is, in fact, desirable. As Jonathan Barnett aptly sums it up:

The [platform] therefore faces a basic trade-off. On the one hand, it must forfeit control over a portion of the platform in order to elicit user adoption. On the other hand, it must exert control over some other portion of the platform, or some set of complementary goods or services, in order to accrue revenues to cover development and maintenance costs (and, in the case of a for-profit entity, in order to capture any remaining profits).²⁰¹

Viewing such platform deviations from “perfect” competition as suspicious misunderstands platform dynamics and risks costly Type I error.²⁰²

A great deal of the antitrust literature on the relationship between market structure and innovation which adopts this “inhospitable” stance is as inherently flawed as the now-debunked literature on how market structure affects price and profits.²⁰³ Not only does this literature adopt dramatic simplifying assumptions that offer little in the way of predictive power for implementation as policy addressing the real economy,²⁰⁴ they also almost uniformly adopt a presumption that innovation is a function of market structure, rather than the other way around.

²⁰¹ Barnett, *The Host's Dilemma*, *supra* note 194, at 1890.

²⁰² See Sidak & Teece, *Dynamic Competition*, *supra* note 192, at 611 (“Simple rules based on static analysis may well produce policy actions and judicial decisions that impede competition. In particular, policymakers should de-emphasize concentration analysis.”).

²⁰³ See, e.g., Harold Demsetz, *The Intensity and Dimensionality of Competition*, in HAROLD DEMSETZ, *THE ECONOMICS OF THE BUSINESS FIRM: SEVEN CRITICAL COMMENTARIES* 137, 140-41 (1995) (“Once perfect knowledge of technology and price is abandoned, [competitive intensity] may increase, decrease, or remain unchanged as the number of firms in the market is increased. . . . [I]t is presumptuous to conclude . . . that markets populated by fewer firms perform less well or offer competition that is less intense.”).

²⁰⁴ See *supra* notes 136 to 162 and accompanying text.

The ongoing debates within economics over the veracity of the “inverted-U” model of innovation and market structure miss the point.²⁰⁵

[A] narrative has developed, based on a number of papers on the topic of “competition and innovation,” that antitrust enforcers should be tolerant of horizontal mergers when innovation is involved because “too much competition might be bad for innovation.” This narrative is summarized with reference to a purported inverted U-shaped relationship between “competition” and “innovation.” As one might expect, the narrative that “too much competition might be bad for innovation” has become popular among firms seeking to merge. However, that conclusion does not follow from a more careful reading of the literature.²⁰⁶

In response, Federico, et al. suggest that, in order to make a competition-policy-relevant assessment of innovation,

one holds the market characteristics constant, including the demand structure, product characteristics, and the firms’ cost functions, and seeks to predict what happens to innovation when competition is lessened because of a merger or by exclusionary conduct. Absent synergies, a merger between significant rival innovators is likely to cause innovation to decline, for the reasons provided previously.²⁰⁷

But this approach, rooted quite explicitly in a “perfect competition” model of innovation (more competition = more innovation), is no more accurate than the inverted-U model which, at least, acknowledges that the relationship between market structure and innovation can’t always be monotonic. This approach remains committed to a causal relationship between market structure and innovation, and even assumes that it is unidirectional: changes in market structure affect incentives to innovate, not the other way around.

But reality is considerably more complicated. And despite mainstream IO economics’ disregard for the large body of work that has studied these complexities, it does indeed exist. The literature on dynamic capabilities and organizational strategy, for example, takes an explicitly dynamic approach, and finds, at the very least, that the

²⁰⁵ See, e.g., Giulio Federico, Fiona Scott Morton & Carl Shapiro, *Antitrust and Innovation: Welcoming and Protecting Disruption*, in 20 INNOVATION POLICY AND THE ECONOMY 125 (Josh Lerner and Scott Stern eds., 2020).

²⁰⁶ *Id.* at 135-36.

²⁰⁷ *Id.* at 136.

direction of causation is very often reversed: *innovation determines market structure*.²⁰⁸

As Sidak and Teece summarize, the bulk of contemporary antitrust analysis of innovation is unduly crabbed by adherence to inappropriate historical doctrines (like product market definition and concentration metrics), and suffers from a fatal lack of dynamic analysis, often inferring instead net consumer harm from short-term constraints on economic freedom in complicated and ill-understood markets.

To summarize, the basic framework employed in discussions about innovation, technology policy, and competition policy is often remarkably naïve, highly incomplete, and burdened by a myopic focus on market structure as the key determinant of innovation. Indeed, it is common to find a debate about innovation policy among economists collapsing into a rather narrow discussion of the relative virtues of competition and monopoly, as if they were the main determinants of innovation. Clearly, much more is at work.²⁰⁹

B. Caveats

The error-cost approach is not limited to consideration of Type I and Type II errors, of course. As noted, the costs of information collection and administration are also crucial considerations. Indeed, Easterbrook's 1984 article is ultimately an investigation of potential "simple rules" aimed at simplifying the costly and, in his description, vacuous Rule of Reason analysis that predominates in antitrust.²¹⁰ Yet, as Whinston laments:

The importance of administrative costs for the design of optimal antitrust policy has not, I think, been adequately recognized in either the economic or legal literatures. On the economics side, it is common for a journal article that shows that a particular practice may either raise or lower welfare to conclude that this implies that the practice should be accorded a Rule of Reason standard. As the foregoing discussion suggests, such a conclusion makes little sense. On the legal side, there appears to be surprisingly little formal application of the theory of optimal statistical decision-making to the issue of optimal legal rules.²¹¹

²⁰⁸ See Sidak & Teece, *Dynamic Competition*, *supra* note 192, at 585.

²⁰⁹ *Id.* at 589.

²¹⁰ See Easterbrook, *Limits*, *supra* note 26, at 12-13 ("When everything is relevant, nothing is dispositive. Any one factor might or might not outweigh another, or all of the others, in the factfinder's contemplation. The formulation [of the Rule of Reason] offers no help to businesses planning their conduct. . . . Litigation costs are the product of vague rules combined with high stakes, and nowhere is that combination more deadly than in antitrust litigation under the Rule of Reason.").

²¹¹ WHINSTON, LECTURES, *supra* note 144, at 18-19.

Adding complexity to antitrust analysis by expanding the incorporation of more dynamic analysis may increase accuracy, but it could possibly decrease legal certainty and increase costs by even more.

The notion that uncertainty about the future can have real economic effects—particularly for irreversible decisions (like sunk cost investments)—is long- and well-established in the economic literature.²¹² Policymakers often add an additional layer of uncertainty through their monetary, fiscal, and regulatory decisions, known as “economic policy uncertainty.”²¹³ “The risk that regulation could reduce the rate of return below the cost of capital also creates a disincentive for investment.”²¹⁴ Although identifying and measuring causal relationships between policy uncertainty and economic outcomes is fraught, attempts at such measurements have consistently pointed in the same direction. As one brief review sums it up:

We think the weight of the evidence and the lessons of economic theory argue for assigning some weight to the policy uncertainty view. If U.S. policymakers can deliver a policy environment characterized by greater certainty and stability, there will likely be a positive payoff in the form of improved macroeconomic performance.²¹⁵

It is by no means clear that a more dynamic approach would increase legal

²¹² See, e.g., Ben Bernanke, *Irreversibility, Uncertainty and Cyclical Investment*, 98 Q. J. ECON. 85 (1983); Avinash Dixit, *Entry and Exit Decisions Under Uncertainty*, 97 J. POL. ECON. 620 (1989); Robert S. Pindyck, *Irreversibility, Uncertainty, and Investment*, 29 J. ECON. LIT. 1110 (1991); AVINASH DIXIT & ROBERT S. PINDYCK, *INVESTMENT UNDER UNCERTAINTY* (Princeton U. Press 1994); Ricardo J. Caballero & Robert S. Pindyck, *Uncertainty, Investment, and Industry Evolution*, 37 INT’L ECON. REV. 641 (1996); Nicholas Bloom et al., *Uncertainty and Investment Dynamics*, 74 REV. ECON. STUD. 391 (2007); Nicholas Bloom, *The Impact of Uncertainty Shocks*, 77 ECONOMETRICA 623 (2009).

²¹³ See generally Steven J. Davis, *Regulatory Complexity and Policy Uncertainty: Headwinds of Our Own Making* (Becker Friedman Inst. for Rsrch. in Econ. Working Paper No. 2723980, 2017), <https://ssrn.com/abstract=2723980>.

²¹⁴ Jerry Ellig, et al., *Economics at the FCC 2007-2018: International Broadband Pricing Comparisons, and a New Office of Economics and Analytics*, 53 REV. INDUS. ECON. 681, 689-90 (2018) (emphasis added), <https://doi.org/10.1007/s11151-018-9672-6>.

²¹⁵ Scott R. Baker, Nicholas Bloom, & Steven J. Davis, *Has Economic Policy Uncertainty Hampered the Recovery?*, in GOVERNMENT POLICIES AND THE DELAYED ECONOMIC RECOVERY (Lee E. Ohanian & John B. Taylor & Ian J. Wright, eds. 2012), *prepublication draft available at* <https://www.semanticscholar.org/paper/Has-Economic-Policy-Uncertainty-Hampered-the-Baker-Bloom/0eb2f1ae9e2b5693043d13ef0b44036fe36d2165>.

certainty. Indeed, “the introduction of more dynamic elements into antitrust analysis will inevitably diminish the certainty and predictability of the law.”²¹⁶ But the primary reason for this is institutional problems, not information problems. “Operating under that greater degree of uncertainty means agencies (and to a lesser extent courts) will have greater discretion. There will simply be more degrees of freedom for the intuitions, biases, and personal and institutional preferences of decisionmakers to influence the outcomes of investigations and cases.”²¹⁷

In order for dynamic analysis to be worthwhile, the greater accuracy of the approach (which is unquestionable relative to the simplified and problematic static approach that dominates today²¹⁸) in terms of reducing both Type I and Type II errors must be sufficient to offset the increased administrative costs associated with a less certain standard. As Judge Ginsburg and Professor Wright conclude: “In their current state, the leading proposals to incorporate dynamics do not make us optimistic about the benefit, in no small part because of the difficulties facing the institutions charged with making antitrust decisions.”²¹⁹

The concern is a valid one, and the increased discretion from a less certain analytical framework would undoubtedly be a problem of a more dynamic approach given current limitations of knowledge and problems of institutions. But it seems worthwhile to seek to impose some further restraint on prospective antitrust decision making overall, and on findings of liability in particular, rather than excluding dynamic analysis.

A related argument is that the increased use of the rule of reason, occasioned

²¹⁶ Ginsburg & Wright, *supra* note 8, at 14.

²¹⁷ *Id.* at 15.

²¹⁸ *Id.* at 20 (“[W]e all know that static analysis has significant limitations; the future rarely turns out looking like the present, and straight-line projections from the recent past through to the future give only the illusion of foresight.”).

²¹⁹ *Id.* at 15.

predominantly by past Chicago School critiques of rules of per se illegality, imposes significant administrative costs on enforcers, such that, without significantly greater resources, conduct subject to the rule of reason becomes effectively exempt from antitrust liability. As Ramsi Woodcock argues:

The enforcement budget constraint has made a mockery of the courts' attempt to use the rule of reason to avoid taking a position on the error cost stalemate. The courts' imposition of rules of reason on vast swaths of antitrust-relevant conduct has, through a reduction in enforcement by budget-constrained enforcers, turned out to be the imposition of a combination of rules of reason and de facto exemptions on vast swaths of antitrust-relevant conduct.²²⁰

The point is well-taken, and perhaps it is appropriate to increase enforcement agency budgets (or otherwise to enact institutional reforms that lower the expected cost of enforcement). But at the end of the day, the institutional limitations on enforcement under the rule of reason may be salutary. Although it remains to be rigorously performed, it is possible that the right error-cost analysis, net of administrative costs, is indeed under-enforcement of existing rules, which may not in the abstract go far enough to mitigate the risks of Type I errors. Indeed, in terms of legal certainty and administrative costs, reliable non-enforcement is an effective cost-reducing device.

III. SOME APPLICATIONS OF THE ERROR-COST FRAMEWORK IN ANTITRUST DOCTRINE

The error-cost framework is operationalized in a number of ways, some of which are discussed above.²²¹ The primary application of the framework can be seen in various aspects of antitrust doctrine.

The incorporation of new economic knowledge about the welfare effects of conduct into antitrust analysis is often accomplished through the adoption of procedural, doctrinal rules. Substantive evolution of antitrust is at least partially a function of

²²⁰ Ramsi A. Woodcock, *The Hidden Rules of a Modest Antitrust*, MINN. L. REV. (forthcoming 2021) (working paper at 9-10), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2896453.

²²¹ See *supra*, Section I.C.

procedural evolution.²²² “Economic analysis influences not only the substantive legal standards that govern particular forms of business conduct, but also how courts choose which standard to apply from among the alternatives available.”²²³

These “procedural” rules include the range of doctrinal elements of the antitrust litigation process such as standing, antitrust injury, pleading standards, evidentiary standards, burdens of proof, and market definition.

A. The Per Se/Rule of Reason Distinction

“The Court uses per se rules when the costs of judicial inquiry necessary to separate the beneficial from the detrimental instances of a practice exceed the gain from saving the relatively rare beneficial instances.”²²⁴ As the Court has elucidated, conduct is deemed per se illegal when “the practice facially appears to be one that would always or almost always tend to restrict competition and decrease output.”²²⁵ As Easterbrook points out, “[t]his is just another way of saying that per se rules should be used when they minimize the sum of the welfare loss from monopolization, the loss from false positives, and the costs of administering the rule.”²²⁶

The adoption of a presumption of illegality under the per se rule is a clear manifestation of the error-cost approach to antitrust. As the Court noted in *Jefferson Parish*:

[T]he rationale for per se rules in part is to avoid a burdensome inquiry into actual market conditions in situations where the likelihood of anticompetitive conduct is so great as to render unjustified the costs of determining whether the particular case at bar involves anticompetitive conduct.²²⁷

²²² See Manne & Stout, *Evolution*, *supra* note 1.

²²³ Lindsey M. Edwards & Joshua D. Wright, *The Death of Antitrust Safe Harbors: Causes and Consequences*, 23 GEO. MASON L. REV. 1205, 1223 (2016).

²²⁴ Frank H. Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 263, 335 (1981).

²²⁵ *Broadcast Music, Inc. v. Columbia Broadcasting Sys., Inc.*, 441 U.S. 1, 19-20 (1979).

²²⁶ Easterbrook, *Predatory Strategies*, *supra* note 224, at 335.

²²⁷ *Jefferson Parish Hospital Dist. No. 2 v. Hyde*, 466 U.S. 2, 16 n. 25 (1984).

Importantly, the decision to assess conduct under the per se rule is not distinct from the rule of reason analysis. Rather, it is the preliminary stage of *any* rule of reason analysis: the characterization and classification of conduct. As Professor Meese explains:

As applied in the courts, then, *Standard Oil's* Rule of Reason manifests itself in a two-step analysis. The first step—per se analysis—requires characterization and then classification of a restraint. Here courts inquire into the nature of the agreement and decide whether it is unlawful per se or instead subject to further scrutiny. If the restraint survives this step, that is, if it is not unreasonable per se, courts proceed to the second step, namely, a fact-intensive analysis of the actual effects of the restraint. While courts refer to this second step as a Rule of Reason analysis, both steps of the process attempt to answer the question put by *Standard Oil*, viz., is a restraint “unreasonably restrictive of competitive conditions.”²²⁸

As noted above, the error-cost framework counsels in favor of such an approach because it is mindful not only of the substantive accuracy of results, but also of the administrative costs of judicial decision-making and the deterrent effects of precedential judicial holdings. Animating the adoption of the per se approach, then, is the assumption that the probability times the cost of an erroneous determination (in terms of both any specific case, as well as its deterrent effect on subsequent economic activity) is smaller than the costs of repeated adjudication of the issue.²²⁹

Much like the rules vs. standards tradeoff, the application of the per se rule in lieu of a full rule of reason analysis countenances some degree of substantive error if the administrative cost savings are sufficiently high.

Per se rules thus require the Court to make broad generalizations about the social utility of particular commercial practices. The probability that anti-competitive consequences will result from a practice and the severity of those consequences must be balanced against its procompetitive consequences. Cases that do not fit the generalization may arise but a per se rule reflects the judgment that such cases are not sufficiently common or important to justify

²²⁸ Meese, *Price Theory*, *supra* note 127, at 93.

²²⁹ *Id.* (“A conclusion that a particular class of restraint is unlawful per se rests upon a determination that a thoroughgoing examination of the reasonableness of such restraints will always or almost always result in a conclusion that they exercise or create market power and thus restrain competition (rivalry) unduly. In this way, per se rules replicate the result that full blown analysis would produce while at the same time avoiding the administrative costs of such an inquiry.”).

the time and expense necessary to identify them.²³⁰

Application of the per se standard is thus limited to circumstances where courts have experience with the conduct at issue, and where they can “predict with confidence that [the conduct] would be invalidated in all or almost all instances under the rule of reason.”²³¹

One important implication of this is that the per se rule is rarely, if ever, appropriate in the face of novel conduct or in a nascent industry. “[I]t is only after considerable experience with certain business relationships that courts classify them as per se violations.”²³² Indeed, per se condemnation is appropriate only when a practice lacks any plausible procompetitive rationale,²³³ which will rarely be the case where there is no existing knowledge or experience to undermine the plausibility of procompetitive explanations of novel conduct.

If there is no long track record of judicial experience establishing that a practice always or almost always lessens competition, then the practice should be subject to analysis under the rule of reason. But, by the same token, as courts learn more about an industry and challenged practices, they can and should amend their approach to reflect updated learning. Thus, the courts’ approach “may vary over time, if rule-of-reason analyses in case after case reach identical conclusions.”²³⁴

In this regard, the concern for the risk of error costs in the face of innovative

²³⁰ *Continental T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 50 (1977).

²³¹ *Leegin Creative Leather Prod., Inc. v. PSKS, Inc.*, 551 U.S. 877, 886-87 (2007) (omission in original; citation omitted).

²³² *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.*, 441 U.S. 1, 9 (1979).

²³³ *Cal. Dental Ass’n v. FTC*, 526 U.S. 756, 771 (1999).

²³⁴ *Cal. Dental*, 526 U.S. at 781. *See also* Ehrlich & Posner, *supra* note 17, at 266 (“Initially a particular type of case is decided under a general standard which permits a broad-ranging factual inquiry. Successive decisions convey information about how such cases should be decided. A point is eventually reached at which the additional information imparted by another decision under the standard is not worth the additional costs. . . of decision by standard as compared to decision by rule. So a rule is adopted, based on the information previously obtained, to control subsequent decisions.”).

conduct is ameliorated, because a finding that a novel practice (or an old practice in a new context) is anticompetitive may be made only after a rigorous analysis of all the facts and circumstances—that is, with greater information specific to the untested conduct at hand. Such a rule sensibly avoids unintentional condemnation of economically valuable activity where the full effects of that activity are simply unknown to the courts.²³⁵

The “inhospitality” tradition of antitrust, by contrast, saw an “extreme hostility toward any contractual restraint on the freedom of individuals or firms to engage in head-to-head rivalry.”²³⁶ It also included an increased use of per se rules and suspicion of unfamiliar economic activity. As Professor Meese has masterfully detailed, the eventual (if incomplete. . .) shift away from the inhospitality tradition entailed the judicial acknowledgement of more advanced industrial organization economics—most notably, Transaction Costs Economics.²³⁷ As new modes of economic organization came to pervade in the economy—and, more importantly, as new understandings of such conduct came to pervade in the academy—courts began to realize that per se condemnation was inappropriate for many “nonstandard” forms of conduct, even when they departed from the traditional “perfect competition” model.²³⁸

In general, the Transaction Cost Economics revolution has, ironically, increased the overall lack of certainty of the antitrust enterprise. To the extent that the pre-1970s

²³⁵ *Broadcast Music*, 441 U.S. at 23-24. See also *In re Sulfuric Acid Antitrust Litig.*, 703 F.3d 1004, 1011-12 (7th Cir. 2012) (“[i]t is a bad idea to subject a novel way of doing business (or an old way in a new and previously unexamined context. . .) to per se treatment”); *United States v. Microsoft Corp.*, 253 F.3d 34, 84, 89 (D.C. Cir. 2001) (refusing to apply the per se rule to “tying arrangements involving platform software products” because they were an entirely “novel categor[y] of dealings”).

²³⁶ Meese, *Price Theory*, *supra* note 127, at 124. On the “inhospitality tradition” and its problematic consequences generally, see *id.* at 124-34; OLIVER E. WILLIAMSON, *THE ECONOMIC INSTITUTIONS OF CAPITALISM: FIRMS, MARKETS, RELATIONAL CONTRACTING* 19, 370-73 (1985). For one of the paradigmatic cases espousing this tradition, see *United States v. Topco Associates*, 405 U.S. 596 (1972).

²³⁷ See, e.g., Oliver E. Williamson, *The Economics of Organization: The Transaction Cost Approach*, 87 AM. J. SOC. 548 (1981).

²³⁸ Meese, *Price Theory*, *supra* note 127.

inhospitality tradition could be defended by the extent of economic learning at the time, that was no longer the case after Williamson. Better understanding of the possibility of procompetitive explanations for previously condemned conduct helps to reduce uncertainty over those specific forms of conduct or situations, but it simultaneously decreases the certainty with which decisionmakers can reasonably condemn novel conduct they don't understand.

As noted above, this applies most starkly in the context of the assessment of the per se rule.²³⁹ Once it becomes clear that the simplifying presumptions of the per se rule were not more likely than not to produce accurate outcomes, the use of the presumption must decline not only in those specific cases, but in *all* cases of novel conduct or novel circumstances, absent specific learning to the contrary.

Fundamentally, as antitrust jurisprudence properly evolves, greater *substantive* economic learning can, and does, lead to changes in antitrust *procedure*. But the overarching consequence of more complicated, nuanced economic analysis is invariably a move toward greater complexity (and thus higher costs) in antitrust adjudication.

In the per se context, for example, the Court eventually introduced an intermediate process (quick look review) in an attempt to mitigate the increased costs of the overall move away from per se illegality necessitated by better economic understanding.²⁴⁰ But in practice the quick look process most likely simply formalized the inevitable reality that anything but an automatic application of a per se rule entails effectively a Rule of Reason

²³⁹ As the Court noted in *Leegin Creative Leather Prods. v. PSKS, Inc.*, 551 U.S. 877, 887 (2007), “as we have stated, a ‘departure from the rule-of-reason standard must be based upon demonstrable economic effect rather than. . . upon formalistic line drawing.’” Cases in which the per se rule was abandoned include *Cont'l T.V. v. GTE Sylvania Inc.*, 433 U.S. 36 (1977) (holding dealer restraints on purchasers no longer per se unlawful); *Broad. Music Inc. v. Columbia Broad. Sys.*, 441 U.S. 1 (1979) (finding price-fixing agreement among horizontal competitors legal); *State Oil v. Khan*, 522 U.S. 3 (1997) (applying rule of reason to maximum resale price maintenance); *Leegin*, 551 U.S. at 877 (holding minimum resale price maintenance subject to rule of reason).

²⁴⁰ See *Cal. Dental Ass'n v. FTC*, 526 U.S. 756, 771 (1999).

analysis.

Thus, in *California Dental Association v. Federal Trade Commission* the Court made it clear that quick look is an appropriate means of by-passing the rule of reason when “an observer with even a rudimentary understanding of economics could conclude that the arrangements in question would have an anticompetitive effect on customers and markets.” But that means that whenever underlying conduct presents novel or nuanced economic circumstances for which past presumptions and burden-shifting rules may not be appropriate—which is to say, the vast majority of the time conduct ends up being litigated—an essentially thorough Rule of Reason analysis will be required:

Although we have said that a challenge to a “naked restraint on price and output” need not be supported by “a detailed market analysis” in order to “requir[e] some competitive justification,” it does not follow that every case attacking a less obviously anticompetitive restraint (like this one) is a candidate for plenary market examination. The truth is that our categories of analysis of anticompetitive effect are less fixed than terms like “per se,” “quick look,” and “rule of reason” tend to make them appear. We have recognized, for example, that “there is often no bright line separating per se from Rule of Reason analysis,” since “considerable inquiry into market conditions” may be required before the application of any so-called “per se” condemnation is justified.²⁴¹

Despite the administrative costs, the Court has determined that antitrust law should not permit courts, which are “ill suited” to “act as central planners,” to condemn a new business model without detailed review of its actual competitive effects.²⁴² To that end, the Court has instructed that the per se rule should not be applied to “cooperative activity involving a restraint or exclusion” where there are even “plausible arguments that [the activities] were intended to enhance overall efficiency and make markets more competitive.”²⁴³

²⁴¹ *Id.* at 779 (citations omitted) (emphasis removed).

²⁴² *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408 (2004).

²⁴³ *Nw. Wholesale Stationers, Inc. v. Pac. Stationery & Printing Co.*, 472 U.S. 284, 294-96 (1985) (emphasis added); accord *Cal. Dental*, 526 U.S. at 771.

B. Injury and Standing

The doctrines of antitrust injury and standing similarly serve to minimize direct costs by reducing the likelihood that courts will end up adjudicating meritless claims. In the case of these threshold determinations, justiciability is largely a function of the underlying purpose of antitrust. As the Court noted in *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, in which it created the doctrine of antitrust injury, “[t]he antitrust laws . . . were enacted for ‘the protection of competition not competitors.’ . . . It is inimical to the purposes of these laws to award damages for the type of injury claimed here.”²⁴⁴ Thus, the antitrust injury doctrine introduced in *Brunswick* was intended to address the scope of potential litigation, limiting it to a set of cases cognizable under the antitrust laws, and unlikely to amount to the subversion of antitrust laws to benefit competitors.

What is notable about the antitrust injury doctrine (as well as standing, to a somewhat lesser extent) is that, while it is a threshold determination, it contemplates some understanding of substantive antitrust theories of harm. Not all conduct that causes an antitrust plaintiff to overpay, for example, constitutes antitrust injury. Rather, all antitrust plaintiffs, including those that allege per se violations, must prove that their injuries stem from a “competition-reducing aspect or effect” of the defendant’s behavior.²⁴⁵

The intention of such rules is clear: to economize on administrative costs without

²⁴⁴ *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 488 (1977) (citing *Brown Shoe Co. v. United States*, 370 U.S. 294, 320 (1962)). *Brunswick* was decided in the context of Section 4 of the Clayton Act. But the Court has subsequently held the antitrust injury limitation in *Brunswick* to apply in Sherman Act and other antitrust cases, as well. See *Blue Shield of Va. v. McCready*, 457 U.S. 465 (1982) (applying the antitrust injury rule to a claim brought under the Sherman Act); *Atl. Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328 (1990) (imposing the antitrust injury requirement on every private antitrust case, irrespective of the statutory source of liability).

²⁴⁵ *Atl. Richfield Co. v. USA Petroleum Co.*, 495 U.S. 328, 344 (1990). See also *Gatt Commc’ns Inc. v. PMC Assocs.*, 711 F.3d 68, 76 (2d Cir. 2013) (“It is not enough for the actual injury to be ‘causally linked’ to the asserted violation.”).

unduly sacrificing substantive accuracy. A plaintiff must show more than simply harm to a particular competitor, which might just as well arise from procompetitive as anticompetitive behavior. “In both cases [antitrust injury and standing], however, the procedural element of standing is a function of the underlying economic understanding of the conduct at issue. For injury to be deemed an injury ‘to competition, not competitors’ requires an understanding of the substantive economics.”²⁴⁶

Such rules serve to minimize error costs only if they are sufficiently accurate predictors of the ultimate outcome of litigated cases, where the cost of their inaccuracy is equal to or less than the administrative cost savings such threshold rules offer.

C. Market Definition

Market definition is similarly employed as a function of error-cost minimization. One of its primary functions is to decrease administrative costs: analysis of total effects of a proposed conduct would be inordinately expensive or impossible without reducing the scope of analysis. Market definition defines the geographic and product areas most likely to be affected by challenged conduct, sacrificing a degree of analytical accuracy for the sake of tractability.

But an early and proper market definition determination also provides increased substantive accuracy and a better understanding of the issues throughout all stages of the adjudicatory process. As Greg Werden notes, “[a]lleging the relevant market in an antitrust case does not merely identify the portion of the economy most directly affected by the challenged conduct; it identifies the competitive process alleged to be harmed.”²⁴⁷ Particularly where novel conduct or novel markets are involved and thus the relevant economic relationships are poorly understood, market definition is crucial to determine

²⁴⁶ Manne & Stout, *Evolution*, *supra* note 1, at 437.

²⁴⁷ Gregory J. Werden, *Why (Ever) Define Markets? An Answer to Professor Kaplow*, 78 ANTITRUST L.J. 729, 741 (2013).

“what the nature of [the relevant] products is, how they are priced and on what terms they are sold, what levers [a firm] can use to increase its profits, and what competitive constraints affect its ability to do so.”²⁴⁸ This approach is perhaps most prominently (and certainly most recently) seen in the Supreme Court’s recent *Amex* decision, in which the Court held that, for many novel, platform markets, “evaluating both sides of a two-sided transaction platform is also necessary to accurately assess competition.”²⁴⁹

Despite the Court’s (controversial²⁵⁰) expansion of its approach to market definition in *Amex* to accommodate nonstandard platform conduct, market definition as usually employed in antitrust analysis in the face of novel, innovative business arrangements is potentially quite problematic.

Market definition is inherently retrospective—systematically minimizing where competition is going, and locking even fast-evolving digital competitors into the past. Traditional market definition analysis that infers future substitution possibilities from existing or past market conditions will systematically lead to overly narrow markets and an increased likelihood of erroneous market power determinations. This is the problem of viewing Google as a “search engine” and Amazon as an “online retailer,” for example, and excluding each from the other’s market. In reality, of course, both are competing for scarce user attention (and advertising dollars) in digital environments; the specific functionality they employ in order to do so is a red herring. As such (and as is apparent to virtually everyone but antitrust enforcers and advocates of increased antitrust intervention) they invest significantly in new technology, product designs, and business models because of competitive pressures from each other—competition that comes from

²⁴⁸ Manne, *In Defence of the Supreme Court’s ‘Single Market’ Definition*, *supra* note 54, at 106.

²⁴⁹ *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018).

²⁵⁰ For a discussion of the market definition controversy in *Amex*, see Manne, *supra* note 248; Joshua D. Wright & John M. Yun, *Burdens and Balancing in Multisided Markets: The First Principles Approach of Ohio v. American Express*, 54 REV. INDUS. ORG. 717 (2019).

outside a retrospectively defined market. “Economics provides no reason to believe innovation ordinarily will come from within a ‘market’ as defined for the purpose of static antitrust analysis.”²⁵¹

Relatively static market definitions may lead systematically to the erroneous identification of such innovation (or other procompetitive conduct) as anticompetitive. And the *benefits* of innovation aimed at competing with rivals *outside* an improperly narrow market, or procompetitive effects conferred on users elsewhere on the platform or in another market, will be relatively, if not completely, neglected.

“[M]arket definition is an entirely artificial construct that has been called an incoherent process as a matter of basic economic principles. Real markets do not come defined. Market definition is an exercise that serves to establish the group of products that are sufficiently substitutable with one another.”²⁵² But it must be recognized that some things that are excluded from the market because they seem to differ in superficial ways may actually be at least as similar, and at least as likely to operate as substitutes, as any number of items that are *included* in the market. Most obviously, this is true when it comes to digital platforms.

The bigger problem is that while such market definitions are, as noted, inherently backward-looking, true competition in high-tech markets tends to come from the future. As Jorde & Teece explain:

It is especially in assessing potential competition that a departure must be made from orthodox approaches when new technologies and new products are at issue. The reason is that potential competition from new technologies can destroy a firm’s position in a particular market and its underlying competences. Price competition, on the other hand, may erode profit margins but is less likely to completely destroy the value of a firm’s underlying technological, physical, and human assets. Accordingly, potential competition from new

²⁵¹ Ginsburg & Wright, *supra* note 8, at 4.

²⁵² Pinar Akman, *The Theory of Abuse in Google Search: A Positive and Normative Assessment Under EU Competition Law*, 2017 J. L. TECH. & POL’Y 301, 369 (2017) (citing Louis Kaplow, *Why (Ever) Define Markets*, 124 HARV. L. REV. 437 (2010)).

products and processes is the more powerful form of competition.²⁵³

Yet even when enforcers or courts consider future effects (say, of efficiencies) or potential entry, it is typically limited to fact-intensive analysis and potential entry into existing markets (and rarely does potential entry actually alter outcomes in either enforcement decisions or cases). As the European Commission's competition enforcer once said regarding its analysis of potential competition:

The third source of competitive constraint, potential competition, is not taken into account when defining markets, since the conditions under which potential competition will actually represent an effective competitive constraint depend on the analysis of specific factors and circumstances related to the conditions of entry. If required, this analysis is only carried out at a subsequent stage, in general once the position of the companies involved in the relevant market has already been ascertained, and when such position gives rise to concerns from a competition point of view.²⁵⁴

There are, in fact, a few cases where agencies have *challenged* activity (mergers) on a theory of "actual potential competition," in which it is asserted that one of the merging parties would likely enter the other's market, and thus that the merger would reduce (likely) future competition.

The FTC's Nielsen-Arbitron merger challenge offers an even more speculative analysis to challenge a proposed merger. There the Commission asserted a future relevant market for a product that did not yet exist, asserted that both of the merging firms were likely to enter this hypothetical market, and that their combination would reduce future, hypothetical competition. Unlike the fact-specific analyses of asserted future effects in typical merger analysis, the assertion of anticompetitive effect in Nielsen rested not only on speculation but on "a general presumption that economic theory teaches that an increase in market concentration implies a reduced incentive to invest in

²⁵³ Thomas M. Jorde & David J. Teece, *Innovation, Dynamic Competition, and Antitrust Policy*, REGULATION (Fall 1990) at 37-38.

²⁵⁴ European Commission, *Commission Notice on the Definition of Relevant Market for the Purposes of Community Competition Law*, OJ C 372, 9.12.1997, [http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A31997Y1209\(01\)](http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A31997Y1209(01)).

innovation.”²⁵⁵

Furthermore, as suggested above, the myopic focus on product markets in antitrust diverts attention away from what may be the real dimensions of competition under a more dynamic understanding:

The capabilities approach would depart markedly from standard antitrust analysis. It would calibrate a firm’s competitive standing not by reference to products but by reference to more enduring traits. In a dynamic context, a firm will have a kaleidoscope of products, yet the underlying capabilities are likely to be more stable. . . . A capabilities approach might lead to “markets” defined more narrowly or broadly than how the current Merger Guidelines define product markets. Potential competition (or its absence) would receive more attention.

The tools for assessing capabilities may not be well developed yet, but they are developed enough to allow tentative application. Clearly, product market analysis can be unhelpful and misleading in dynamic contexts.²⁵⁶

Perhaps the most overtly static aspect of current market definition doctrine is the consideration of only demand-side substitution in defining markets, especially for merger analysis.²⁵⁷ Yet an important component of getting market definition right, especially in high tech markets, may be an expansion of the role of supply-side substitution in market definition and market power calculations, and especially from

²⁵⁵ Dissenting Statement of Commissioner Joshua D. Wright, *In the Matter of Nielsen Holdings N.V. and Arbitron Inc.*, FTC File No. 131-0058 (Sep. 20, 2013) at 3. As then-Commissioner Wright further points out in a related footnote:

The link between market structure and incentives to innovate remains inconclusive. See, e.g., [Ginsburg & Wright, *supra* note 8,] at 4-5 (“To this day, the complex relationship between static product market competition and the incentive to innovate is not well understood.”); Richard J. Gilbert, Competition and Innovation, in 1 ABA Section of Antitrust Law, *Issues in Competition Law and Policy* 577, 583 (W. Dale Collins ed., 2008) (“[E]conomic theory does not provide unambiguous support either for the view that market power generally threatens innovation by lowering the return to innovative efforts nor the Schumpeterian view that concentrated markets generally promote innovation.”).

Id. at n. 7. See also John M. Yun, *Potential Competition, Nascent Competitors, and Killer Acquisitions*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

²⁵⁶ Sidak & Teece, *supra* note 192, at 617.

²⁵⁷ *Id.* at 625 (“The SSNIP test focuses on consumer substitution. Supply substitution (including entry) is not considered until after market shares are calculated solely on the basis of the static, consumer-oriented market definition. One can dispute whether that approach is good economics; as a matter of law, however, the static approach [is] the law.”).

potential entrants.

The US Horizontal Merger Guidelines significantly downplay the role of supply-side substitution.²⁵⁸ But demand-side substitution is extremely crabbed in these markets because price competition doesn't predominate and because the relevant competition may not exist yet (product development often long predates commercialization, new entrants may come from very different quarters, and thus there may be no identifiable substitute products yet in the market to which consumers may substitute). This is a key implication of the relative importance of competition via product innovation, rather than price, in these markets.²⁵⁹ This also means that seemingly unrelated suppliers and seemingly unrelated markets should often properly be counted in the same market.

²⁵⁸ U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES (2010), <http://www.justice.gov/atr/public/guidelines/hmg2010.pdf>.

²⁵⁹ See Jorde & Teece, *supra* note 174.

Antitrust in Retrograde: The Consumer Welfare Standard, Socio-Political Goals, and the Future of Enforcement

Elyse Dorsey*

INTRODUCTION

Judge Richard A. Posner famously described the consumer welfare standard as the “lodestar that shall guide the contemporary application of the antitrust laws” in 1986.¹ In the decades since, the antitrust community readily embraced the “lodestar” denomination.² The consumer welfare standard is indeed the focal point of modern antitrust analysis, guiding decisions and informing the rules and standards antitrust law imposes. But this is not the consumer welfare standard’s only function as lodestar. It is both guide and tether. It serves as the linchpin tying antitrust law to economic concepts and reasoning. Its guidance illuminates both what antitrust law is and—just as important, what it is not. The consumer welfare standard provides the basis for distinguishing between those concerns that antitrust law appropriately considers and those that it rightly omits. In doing so, the consumer welfare standard ensures a common language is spoken across antitrust matters today.

Antitrust law did not always operate with a common language. For many decades following the passage of the Sherman Act in 1890, antitrust lacked a unifying, consistent language. It was a cacophonous area of law, where decisions could be—and often were—premised upon vastly different reasoning from one to another, leading to numerous

* This Chapter does not necessarily reflect the views of the Department of Justice. I would like to thank Judge Douglas H. Ginsburg and Josh Wright for valuable comments and discussion.

¹ *Hospital Corp. of America v. FTC*, 807 F.2d 1381, 1386 (7th Cir. 1986).

² See, e.g., Douglas H. Ginsburg & Joshua D. Wright, *Philadelphia National Bank: Bad Law, Bad Economics, Good Riddance*, 80 Antitrust L.J. 377 (2015); Assistant Attorney General Makan Delrahim, U.S. Dep’t of Justice, Keynote Address at the University of Chicago’s Antitrust and Competition Conference, Chicago, IL (Apr. 19, 2018), <https://www.justice.gov/opa/speech/file/1054766/download>; Joshua D. Wright et al., *Requiem for a Paradox: The Dubious Rise and Inevitable Fall of Hipster Antitrust*, 51 ARIZ. ST. L. J. 293, 352 (2019).

inconsistencies and internal tensions. This resulted in a general confusion as to how any given case would be decided. But more fundamentally, to questions regarding the very goals of antitrust law.

The consumer welfare standard, with its economic underpinning, has come to represent a robust language defining antitrust discourse today. For the last several decades, courts and enforcers, economists and practitioners, and other experts have developed this language. The analysis today is far more comprehensive than it was when the courts first embraced the consumer welfare standard 40 years ago. Experts have continued to investigate and seek out theories of harm; to develop economic tools for empirically investigating conduct; and to analyze numerous other components factoring into antitrust analysis, such as potential efficiencies.

Of late, the consumer welfare standard—and antitrust law more broadly—has come under renewed criticism. Criticisms come in various forms, but largely follow a similar thread, cataloguing its purported limitations: That it myopically focuses upon the short term and only upon price effects; that it omits consideration of important socio-political goals; that it is incapable of identifying and condemning problems endemic in the modern economy. While some of the criticisms ring true (the consumer welfare standard does not permit consideration of socio-political factors), others do not (the consumer welfare standard addresses far more than short term price effects). And many miss the mark because they overlook the history of how and why we arrived at the current understanding.

Indeed, a common characteristic of the current criticism, often referred to as the Neo-Brandeisian movement, is that it bears remarkable resemblance to those populist movements that came before it. Today, antitrust critics make nearly the exact same arguments regarding the proper goals of antitrust law—any number of socio-political ends such as protecting small businesses and preventing “bigness”—that similar

movements throughout the 20th century (and the late 19th century) espoused.³ Antitrust law did, in fact, embrace a more socio-political approach, which explicitly purported to serve just such values, for much of the 20th century.

Today's criticisms thus represent a retrograde approach to antitrust enforcement. Retrograde generally refers to a movement backwards, a retreat, or a decline in condition.⁴ In astronomy, though, planets are said to retrograde when they *appear* to be moving backwards in their orbits.⁵ Antitrust law may be in a similar position today. The vigor and pervasiveness of calls to return to an earlier enforcement approach are certainly contributing to an appearance that antitrust law may be reversing its orbit. Whether this is merely an illusion is yet to be determined. Understanding the history of antitrust law and how it came to embrace the consumer welfare standard is, therefore, critical to understanding the current conversation and the fight for the soul of antitrust law. It is also critical to avoiding the very same pitfalls—and the costs to American consumers and to economic development—that defined earlier antitrust enforcement efforts.

Part I of this Chapter examines the history of antitrust law to contextualize the current debate. It addresses the numerous legislative history arguments and examines the courts' experience enforcing the antitrust laws over the last 130 years, tracing the

³ See, e.g., Elizabeth Warren, *Here's How We Can Break Up Big Tech*, MEDIUM (Mar. 8, 2019), <https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c> ("Today's big tech companies have too much power—too much power over our economy, our society, and our democracy."); Lina Khan & Sandeep Vaheesan, *Market Power and Inequality: The Antitrust Counterrevolution and Its Discontents*, 11 HARV. L. & POL'Y REV. 235, 237 (2017) (arguing that we should "embrace[] the original goals of antitrust"); Matt Stoller, *The Return of Monopoly*, THE NEW REPUBLIC (July 13, 2017), <https://newrepublic.com/article/143595/return-monopoly-amazon-rise-business-tycoon-white-house-democrats-return-party-trust-busting-roots> (favorably discussing antitrust enforcement in the early twentieth century).

⁴ See *Retrograde*, Dictionary.com, <https://www.dictionary.com/browse/retrograde> (last visited Sept. 6, 2020); *Definition of Retrograde*, Merriam Webster, <https://www.merriam-webster.com/dictionary/retrograde> (last visited Sept. 6, 2020).

⁵ See *Mars in Our Night Sky*, NASA, <https://mars.nasa.gov/all-about-mars/night-sky/retrograde/> (last visited Sept. 6, 2020).

reasoning behind antitrust law's developments and its adoption of the consumer welfare standard. Part II describes what the consumer welfare standard is and how it operates today, demonstrating its robustness and articulating its many benefits—to the courts, to enforcers, to firms, and to the public at large. Part III turns to the current debate, analyzing the validity and identifying the shortcomings of the arguments neo-Brandeisians proffer in support of abandoning the consumer welfare standard. Part IV concludes.

I. ANTITRUST IN CONTEXT: HISTORY

Antitrust law in the U.S. was not always tethered to the consumer welfare standard. When the Sherman Act was first passed into federal law in 1890, the standards by which conduct was to be judged unlawful were far less developed—and far less coherent—than they are today. This led to many of years of increasing confusion, reaching a zenith in the mid-20th century. By that time, antitrust law was considered so muddled and ineffective that serious legal and economic scholars had largely abandoned it as a worthwhile academic endeavor.⁶

Targeted efforts to identify a clear, fundamental goal of antitrust shifted this thinking. Renowned minds of all stripes—including numerous Nobel Laureates, Supreme Court Justices, and appellate court judges—embraced the intellectual challenge of bringing rigor, consistency, and the rule of law to this wayward field. It was these efforts to begin with first principles, to identify the fundamental goal of antitrust and how best that goal could be achieved, that led to the law's embrace of the consumer welfare

⁶ William E. Kovacic & Carl Shapiro, *Antitrust Policy: A Century of Economic and Legal Thinking*, 14 J. ECON. PERSPS. 43, 44 (2000) (“Most economists in the late 19th century scorned the Sherman Act. At best, the statute seemed a harmless measure incapable of halting an irresistible trend toward firms of larger scale and scope. At worst, the law would impede attainment of superior efficiency promised by new forms of industrial organization.” (internal citations omitted)); ROBERT H. BORK, ANTITRUST PARADOX 418 (1978) (“[M]odern antitrust has so decayed that the policy is no longer intellectually respectable. Some of it is not respectable as law; more of it is not respectable as economics[.]”).

standard.

A. Prerevolutionary Chaos: Early Antitrust Enforcement

With the passage of the Sherman Act, the United States first incorporated antitrust law into its federal regulatory landscape.⁷ The Sherman Act remains a critical component of the modern antitrust framework. It is, however, rather unusual in its brevity and simplicity, especially as compared to modern day statutes. It left open many questions regarding implementation of the antitrust law, which has had two related effects over time: (1) a persistent interest in the legislative intent behind the Sherman Act's passage; and (2) a critical role for the courts in developing the antitrust laws.

For over a century, prominent scholars, researchers, and other interested parties have sifted through the legislative history of the Sherman Act in attempts to divine the foundational, unifying purpose of the Act. As early as 1940, a “great deal” had already been said “about the purpose of Congress in passing the act.”⁸ A report on U.S. antitrust law by the Temporary National Economic Committee at this time concluded that, “In a search for intent the record has been thumbed through with meticulous care and to little purpose.”⁹

Many have nonetheless persisted in this endeavor over the last several decades and continued to arrive at differing conclusions. While some argue the Act was aimed at maximizing economic goals—as measured by consumer welfare, efficiency, or other

⁷ Sidenote: While it remains known as the Sherman Act, Senator George F. Hoar, it seems, drafted the version of the legislation as passed. As one report explains, “It is to this day strangely enough called the Sherman Act—for no better reason, according to its author, than that Senator Sherman had nothing to do with it whatever.” TEMP. NAT’L ECON. COMM., INVESTIGATION OF CONCENTRATION OF ECONOMIC POWER: ANTITRUST IN ACTION, at 10 (1940) [hereinafter TNEC Report] (citing George F. Hoar, *Autobiography of Seventy Years*, vol. II, at 363).

⁸ *Id.* at 10-11.

⁹ *Id.* It further noted that a “great bother is that the bill which was arduously debated was never passed, and that the bill which was passed was never really discussed. The House, in fact, never had a chance at the measure which provoked discussion.” *Id.*

factors—others conclude the Act was intended to be a more general reckoning tool for various socio-political goals.¹⁰ These conflicting results seem to underscore a point the Supreme Court has made: that “legislative history is itself often murky, ambiguous, and contradictory,”¹¹ and that investigating this history tends to become, as Judge Leventhal coined it, “an exercise in ‘looking over a crowd and picking out your friends.’”¹² Indeed, the conflicting results of these endeavors, undertaken by many serious, thoughtful scholars, tends to underscore just how confused the legislative history is and the futility of trying to divine a consistent, singular purpose.

Perhaps more important—and certainly more informative—than the intent of the 1890 (and later) congressmen and language that, by definition, did not make it into the statutes, is the courts’ practical history of enforcing the laws as enacted.¹³ The Sherman Act is, as former Assistant Attorney General in charge of the Antitrust Division of the

¹⁰ See, e.g., BORK, *supra* note 6, at 61-68 (“The legislative history of the Sherman Act, the oldest and most basic of the antitrust statutes, displays the clear and exclusive policy intention of promoting consumer welfare.”); Robert H. Lande, *Wealth Transfers as the Original and Primary Concern of Antitrust: The Efficiency Interpretation Challenged*, 34 HASTINGS L.J. 65 (1982) (“Congress passed the antitrust laws to further economic objectives, but primarily objectives of a distributive rather than of an efficiency nature.”); Kahn & Vaheesan, *supra* note 3, at 270, 277-79 (“The congressmen and senators involved in the debates preceding the passage of the principal antitrust laws voiced a number of concerns, including the protection of consumers and suppliers from firms with market power, the defense of small businesses from the predatory tactics of large rivals, and the preservation of democracy. Efficiency was not on Congress’s radar in 1890 or 1914.”); Sandeep Vaheesan, *The Profound Nonsense of Consumer Welfare Antitrust*, 64 ANTITRUST BULL. 479, 480 (2019) (“The drafters of these landmark statutes sought to restrict corporate power over consumers, workers, suppliers, and rivals.”); see also Douglas H. Ginsburg, *Bork’s “Legislative Intent” and the Courts*, 79 ANTITRUST L.J. 941 (2014) (identifying various interpretations proffered following Bork’s explication).

¹¹ *Exxon Mobil Corp. v. Allapattah Services, Inc.*, 545 U.S. 546, 568 (2005) (quoting Judge Leventhal); see also *Conroy v. Aniskoff*, 507 U.S. 511, 519 (1993) (Scalia, J., concurring).

¹² U.S. Association of Constitutional Law Discussion, *Constitutional Relevance of Foreign Court Decisions*, Full Written Transcript of Scalia-Breyer Debate on Foreign Law (Jan. 13, 2005), <http://www.freerepublic.com/focus/news/1352357/posts> (Breyer, J.).

¹³ TNEC Report, *supra* note 7, at 10-11 (“A great deal has been said about the purpose of Congress in passing the act. At best legislative intent is an evasive thing. It is wrapped in the conditions, the problems, the attitudes, the very atmosphere of an era that is gone. But aside from saying that the act reflects its date, there is little more in the way of concretion to recite. Instead, as a creation of the process of legislation, the statute bears the confused marks of its origin.”).

Department of Justice, William F. Baxter, described it, “almost constitutional in quality.”¹⁴ Its broad, concise language lends itself to—even necessitates—common law development by the courts, as Senator Sherman himself recognized.¹⁵ This arrangement delegated to the courts a central role in developing the antitrust laws for more than 130 years. Through that long history, we have learned quite a lot. These important lessons should not be lost amidst today’s loud and vigorous calls to revert antitrust law to its early form.

The Supreme Court early on recognized the important role of the courts in prescribing the particular metes and bounds of antitrust law, and in adapting those metes and bounds to align with modern teachings.¹⁶ In *Standard Oil Co. of New Jersey v. United States*, the Court noted the “generic enumeration which the statute makes of the acts to which it refers . . . leaves room but for one conclusion, which is, that it was expressly designed not to unduly limit the application of the act by precise definition, but to leave

¹⁴ William F. Baxter, *Separation of Powers, Prosecutorial Discretion, and the “Common Law” Nature of Antitrust Law*, 60 TEX. L. REV. 661, 663 (1982).

¹⁵ See *United States v. Topco*, 405 U.S. 596, 620-21 (1972) (Burger, J., dissenting) (“Senator Sherman, in a lengthy, and obviously carefully prepared, address . . . [acknowledged that,] ‘I admit that it is difficult to define in legal language the precise line between lawful and unlawful combinations. This must be left for the courts to determine in each particular case.’” (quoting 21 Cong. Rec. 2457, 2460)); Baxter, *supra*, note 14, at 663-64; Ginsburg, *supra* note 10, at 941 (“The open-textured nature of the [Sherman] Act—not unlike a general principle of common law—vests the judiciary with considerable responsibility or interpretation, the discharge of which responsibility requires the courts to imbue the Act with a purpose by which to guide its application.”); Nat’l Soc’y of Prof’l Eng’rs v. *United States*, 435 U.S. 679, 688 (1978) (“Congress[] did not intend the text of the Sherman Act to delineate the full meaning of the statute or its application in concrete situations. The legislative history makes it perfectly clear that it expected the courts to give shape to the statute’s broad mandate by drawing on common-law tradition.”); Laura Phillips Sawyer, *US Antitrust Law and Policy in Historical Perspective* (Harv. Bus. Sch. Working Paper No. 19-110, 2019), https://www.hbs.edu/faculty/Publication%20Files/19-110_e21447ad-d98a-451f-8ef0-ba42209018e6.pdf (“The key pieces of antitrust legislation in the United States—the Sherman Act of 1890 and the Clayton act of 1914—contain broad language that has afforded the courts wide latitude in interpreting and enforcing the law.”).

¹⁶ See, e.g., *Bus. Elecs. Corp. v. Sharp Elecs. Corp.*, 485 U.S. 717, 731-32 (1988) (“The changing content of the term ‘restraint of trade’ was well recognized at the time the Sherman Act was enacted.” (citing *Gibbs v. Consolidated Gas Co.*, 140 U.S. 396, 409 (1889))); *Kimble v. Marvel Ent., LLC*, 576 U.S. 446, 461-62 (2015) (“Congress, as we have explained, intended that [Sherman Act] law’s reference to ‘restraint of trade’ to have ‘changing content,’ and authorized courts to oversee the term’s ‘dynamic potential.’ (quoting *Bus. Elecs.*, 485 U.S. at 731-32)).

it to be determined by the light of reason . . . whether any particular act or contract was within the contemplation of the statute.”¹⁷ Here, in addition to acknowledging the important work that would need to be conducted by the courts, the Court explicitly incorporated the concept of the “rule of reason” into antitrust analysis.¹⁸ This mode of analysis continues to be a defining characteristic of antitrust law today.

The *Standard Oil* decision further explained that concerns with monopoly power originally derived from fears of: “1. The power which the monopoly gave to the one who enjoyed it to fix the price and thereby injure the public; 2. The power which it engendered of enabling a limitation on product; and, 3. The danger of deterioration in quality of the monopolized article which it was deemed was the inevitable resultant of the monopolistic control over its production and sale.”¹⁹ From these origins, which appear largely consistent with economic theory, courts expanded the scope of potential evils of monopoly which antitrust law might capture.

While economic concerns still had their place, courts often found the antitrust laws were broad enough to incorporate many additional, socio-political concerns. Court decisions, for instance, found that price cutting might drive from the market the “small dealers and worthy men whose lives have been spent therein, and who might be unable to readjust themselves to their altered surroundings,” and derided the notion that a “[m]ere reduction in the price of the commodity dealt” was a particularly worthy offset to such harms.²⁰ Indeed, many cases echoed this idea, allowing “that occasional higher costs and prices might result from the maintenance of fragmented industries and

¹⁷ 221 U.S. 1, 63-64 (1911).

¹⁸ While *Standard Oil* is the case credited with introducing the rule of reason to antitrust law, the mode of analysis is itself far older than the *Standard Oil* case. *Prof. Eng’rs*, 435 U.S. at 688 (“The Rule of Reason, with its origins in common-law precedents long antedating the Sherman Act . . . has been used to give the Act both flexibility and definition, and its central principle of antitrust analysis has remained constant.”).

¹⁹ *Standard Oil*, 221 U.S. at 52.

²⁰ *United States v. Trans-Missouri Freight Ass’n*, 166 U.S. 290, 323-24 (1897).

markets,” but resolving that protecting other values, such as the promotion of “viable, small, locally owned business”²¹ and “put[ting] an end to great aggregations because of the helplessness of the individual before them,”²² were worth the costs.

These—and more—goals forced courts applying the antitrust laws increasingly to tie themselves in knots in order to acknowledge and weigh all the competing factors. In the influential *Alcoa* decision, for instance, the Second Circuit (sitting by designation as the court of last resort) issued an opinion reflecting just such contortions.²³ The court recognized that monopoly power, alone, was not unlawful, because the “successful competitor, having been urged to compete, must not be turned upon when he wins.”²⁴ The court then condemned the defendant, however, for “doubling and redoubling its capacity” to meet consumer demand, concluding it could “think of no more effective exclusion than progressively to embrace each new opportunity as it opened.”²⁵ The decision thus admits size alone is not an offense and successful competitors should not be punished, but simultaneously punishes the successful competitor before it for growing and continuing to serve consumer demand.

Similarly, in *United States v. Topco Associates, Inc.*, the Supreme Court condemned a joint venture of small and mid-sized regional supermarket operators for creating private label products with exclusive territories—an arrangement that allowed the

²¹ *Brown Shoe Co. v. United States*, 370 U.S. 294, 344 (1962); *see also* *Utah Pie Co. v. Cont’l Baking Co.*, 386 U.S. 685, 703 (1967) (reversing a ruling that would have facilitated lower prices).

²² *United States v. Aluminum Co. of Am. (Alcoa)*, 148 F.2d 416, 428 (2d Cir. 1945).

²³ The Supreme Court lacked a quorum, and Congress enacted a special act. Act of June 9, 1944, ch. 239, 58 Stat. 272, amended by Act of Dec. 21, 1974, Pub. L. No. 93–528, 88 Stat. 1706.

²⁴ *Alcoa*, 148 F.2d at 430; *see also* *United States v. U.S. Steel Corp.*, 251 U.S. 417, 451 (1920) (“The corporation is undoubtedly of impressive size, and it takes an effort of resolution not to be affected by it or to exaggerate its influence. But we must adhere to the law, and the law does not make mere size an offense, or the existence of unexerted power an offense. It, we repeat, requires overt acts, and trusts to its prohibition of them and its power to repress or punish them. It does not compel competition, nor require all that is possible.”); *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966).

²⁵ *Alcoa*, 148 F.2d at 431.

members to compete more effectively with larger chain stores.²⁶ Private labels had become a boon for large chain stores, and the district court had found both that the Topco members could not provide a private label outside the joint venture, and that the territorial exclusives were necessary for the joint venture to exist at all.²⁷ The Supreme Court further acknowledged that Topco members lacked market share (averaging only about 6 percent), and that the private Topco label constituted only about 10% of the goods the members sold.²⁸ Further still, the Supreme Court recognized that the Topco private label brands' "very existence [] improved the competitive potential of Topco members."²⁹ While the Court lauded the Sherman Act as a champion of "the freedom to compete," it nonetheless condemned this admittedly competitive conduct as per se unlawful.³⁰

Swift condemnation of this kind was, in fact, increasingly characteristic of antitrust decisions at this time. By the midcentury mark, courts had embraced the "inhospitality tradition," which reflected a deep skepticism of large firms and novel conduct.³¹ This

²⁶ 405 U.S. 596 (1972).

²⁷ *United States v. Topco Associates, Inc.*, 319 F. Supp. 1031, 1036, 1042-43 (N.D. Ill. 1970), *rev'd*, 405 U.S. 596 (1972).

²⁸ *Topco*, 405 U.S. at 600.

²⁹ *Id.*

³⁰ *Id.* at 610; *id.* at 614 (Burger, J., dissenting) ("After a careful review of the economic considerations bearing upon this case, the District Court determined that 'the relief which the government here seeks would not increase competition in Topco private label brands'; on the contrary, such relief 'would substantially diminish competition in the supermarket field.' 319 F. Supp. 1031, 1043. This Court has not today determined, on the basis of an examination of the underlying economic realities, that the District Court conclusions are incorrect. Rather, the majority holds that the District Court had no business examining Topco's practices under the 'rule of reason[.]'"); *see also* Elyse Dorsey, *Anything You Can Do, I Can Do Better – Except in Big Tech? Antitrust Law's New Inhospitability Tradition*, 68 KANSAS L. REV. 975 (2020); Alan J. Meese, *Competition and Market Failure in the Antitrust Jurisprudence of Justice Stevens*, 74 FORDHAM L. REV. 1775, 1780-82 (2006).

³¹ Former Assistant Attorney General in charge of the U.S. Department of Justice's Antitrust Division, Donald Turner, is largely credited with coining this phrase. Donald F. Turner, *Some Reflections on Antitrust*, 1966 N.Y. ST. B. ASS'N ANTITRUST L. SYMP. 1, 1-2 (1966); *see also* Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 4 (1984) ("The tradition is that judges view each business practice with suspicion, always wondering how firms are using it to harm consumers. If the defendant cannot convince the judge that its practices are an essential feature of competition, the judge forbids their use."); Dorsey, *supra* note 30, at 981-

skepticism, in turn, tended to result in summary condemnation and an increasing use of the per se rule to outlaw numerous types of conduct. Mergers and joint ventures between even very small firms were unlawful, as were nearly all vertical arrangements.³² Firms were increasingly restricted as to how they could grow, not only through combination but also through internal expansion, hampering their ability to meet new challenges or to engage in innovative behavior.

In other words, the courts had found the goals of the antitrust laws were many – but enhancing competition between firms, it seemed, was not truly among them.³³ As the courts' decisions became increasingly convoluted, tensions surrounding antitrust enforcement rose.

B. Antitrust in Crisis

By the mid-20th century, U.S. antitrust law was in crisis. Incorporating so many disparate socio-political goals into the analysis yielded an environment in which

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³² See, e.g., *Von's Grocery Co.*, 384 U.S. at 278–79 (1966); *United States v. Phila. Nat'l Bank*, 374 U.S. 321, 323–24 (1963); *Brown Shoe Co. v. United States*, 370 U.S. 294, 346 (1962); Herbert Hovenkamp, *Progressive Antitrust*, 2018 U. Ill. L. Rev. 71, 84 (2018) (“Antitrust policy from the New Deal through the early 1970s became an economically irrational war on vertical integration of all types.”).

³³ See, e.g., *Topco*, 405 U.S. at 614 (Burger, J., dissenting) (criticizing the majority decision for, as the district court found, “substantially diminish[ing] competition in the supermarket field”); Herbert J. Hovenkamp, *Is Antitrust's Consumer Welfare Principle Imperiled?*, 45 J. CORPORATION L. 101, 127 (2019) (explaining that the plaintiff in the infamous *Utah Pie* case “collected antitrust damages because it was forced to be a competitor rather than a monopolist” (*Utah Pie Co. v. Cont'l Baking Co.*, 386 U.S. 685, 699–700 (1967))); Herbert J. Hovenkamp & Carl Shapiro, *Horizontal Mergers, Market Structure, and Burdens of Proof*, 127 YALE L.J. 996, 2017-18 (2018) (“[T]he 1962 *Brown Shoe* merger decision . . . actually condemned the merger based on the district court's factual findings that the postmerger firm would be in a position to undersell its rivals—offering either lower-priced shoes or shoes of higher quality for the same price.”); Aaron Director & Edward H. Levi, *Law and the Future: Trade Regulation*, 51 NW. U. L. REV. 281, 286 (1956) (“Perhaps, then the successful competitor can be turned upon when he wins, because he has been told not to compete.”); Note, *Trouble Begins in the “New” Sherman Act: The Perplexing Story of the A&P Case*, 58 YALE L.J. 969, 971 (1949) (“[I]n *United States v. N.Y. Great Atlantic & Pacific Tea Co.*, the Court of Appeals for the Seventh Circuit has upheld a criminal conviction in a situation where the defendant corporation represented the forces of competition, efficiency and change. The potential contradiction in the New Sherman Act is sharply exposed.”).

decisions increasingly relied upon inconsistent reasoning to reach their outcomes. Holdings often contradicted not only other cases, but the internal logic espoused elsewhere in the same decision. This state of affairs led Supreme Court Justice Stewart, in a scathing dissent, to state that the “sole consistency I can find is that in litigation under § 7, the Government always wins.”³⁴ In examining the merger before the Court, he found “[n]othing in the present record indicates that there [wa]s more than an ephemeral possibility that the effect” of the merger might have been to harm competition.³⁵ And he harshly criticized the majority’s decision to condemn a merger resulting in “a firm with 1.4% of the grocery stores and 7.5% of grocery sales in Los Angeles,”³⁶ deviating starkly from even the 30% threshold established in *U.S. v. Philadelphia National Bank*³⁷ just three years prior.

Justice Stewart was far from antitrust’s only critic. Experts across the spectrum have decried the systemic shortcomings of antitrust law during this period. Finding the case law to be “schizophrenic,”³⁸ “an impenetrable jungle of words,”³⁹ “an economically irrational war on vertical integration,”⁴⁰ “an incoherent and unpredictable body of law,”⁴¹ “standardless and unduly hostile,”⁴² and more. Antitrust expert and D.C. Circuit Judge Douglas H. Ginsburg, for instance, concluded that, at this time, “the U.S. Supreme Court

³⁴ *United States v. Von’s Grocery Co.*, 384 U.S. 270, 301 (1966) (Stewart, J., dissenting).

³⁵ *Id.* at 304.

³⁶ *Id.*

³⁷ 374 U.S. 321 (1963).

³⁸ BORK, *supra* note 6, at 7.

³⁹ Milton Handler, *Industrial Mergers and the Anti-Trust Laws*, 32 COLUM. L. REV. 179, 183 (1932).

⁴⁰ Hovenkamp, *supra* note 32, at 84.

⁴¹ Wright et al., *supra* note 2, at 352.

⁴² Neil W. Averitt & Robert H. Lande, *Using the “Consumer Choice” Approach to Antitrust Law*, 74 ANTITRUST L.J. 175, 177 (2007) (finding the “‘social and political values’ paradigm of the 1960s and 1970s[] proved standardless and unduly hostile to business”).

simply did not know what it was doing in antitrust cases.”⁴³ Former FTC Chairman William E. Kovacic and former Antitrust Division Deputy Assistant Attorney General Carl Shapiro similarly noted that most economists, as a result, found the Sherman Act to be “a harmless measure” at best, and an impediment to the “attainment of superior efficiency promised by new forms of industrial organization” at worst.⁴⁴

These criticisms crested in the mid-20th century, but the wave had been building for quite some time. In 1932, for instance, Milton Handler—noted antitrust expert and President Franklin D. Roosevelt’s chief adviser on antitrust matters⁴⁵—conducted a review of Supreme Court precedent. He found, “There is support in the body of authority for almost every position that might conceivably be taken; contrariwise there are embarrassing holdings and *dicta* which no one theory can fully explain, short of regarding the cases as fundamentally opposed to one another.”⁴⁶ He concluded, “when all is said and done, the fact remains that the decisions are in good part inconsistent and the opinions hopelessly confused.”⁴⁷

Not only had antitrust law incorporated myriad, often conflicting values—making it impossible for consistency or coherence to prevail—but it was widely recognized that it also failed to achieve any particular one of its many conflicting goals.⁴⁸ It often

⁴³ Douglas H. Ginsburg, *Originalism and Economic Analysis: Two Case Studies of Consistency and Coherence in Supreme Court Decision Making*, 33 HARV. J.L. & PUB. POL’Y 217, 217 (2010).

⁴⁴ Kovacic & Shapiro, *supra* note 6, at 44.

⁴⁵ See Sylvia Nasar, *Milton Handler, 95, Is Dead; Antitrust Expert Wrote Laws*, N.Y. TIMES (Nov. 12, 1998), <https://www.nytimes.com/1998/11/12/business/milton-handler-95-is-dead-antitrust-expert-wrote-laws.html>.

⁴⁶ Handler, *supra* note 39, at 242; see also Sergei S. Zlinkoff & Robert C. Barnard, *Mergers and the Anti-trust Laws: The Columbia Steel Case, the Supreme Court and a Competitive Economy 1947 Term*, 97 U. PENN. L. REV. 151, 152 (1948) (quoting Handler).

⁴⁷ *Id.* at 271; see also S. Chesterfield Oppenheim, *Federal Antitrust Legislation: Guideposts to a Revised National Antitrust Policy*, 50 MICH. L. REV. 1139, 1142 (1952) (“Yet the wisdom and, indeed, the irresistible necessity, of such fundamental inquiry into the question of where the country is heading in enforcing the antitrust laws, and what changes are needed in national antitrust policy, appears undeniable.”).

⁴⁸ See, e.g., Ginsburg, *supra* note 43; BORK, *supra* note 6; Hovenkamp, *supra* note 32, at 85; Wright et al., *supra*

undermined the very competitive values it purported to preserve. Many decisions not only permitted but in fact sought to preserve higher prices.⁴⁹ While the purported justifications typically included protecting individuals against large enterprises, that overlooked entirely the individual consumers who were forced to pay those higher prices, and whose interests were generally not even considered in the courts' opinions. Scholars readily poked fun at the perverse incentives at play, noting that—contrary to the court's statement in *Alcoa*—perhaps “the successful competitor can be turned upon when he wins, because he has been told not to compete.”⁵⁰

It cannot even be said that antitrust law at this time truly assisted the small, local businesses it frequently purported to defend, or otherwise fostered an environment conducive to their success. Small firms, perhaps just as much as large ones, were subject to the shifting and mercurial whims of antitrust law. Mergers of even very small enterprises were typically found unlawful.⁵¹ As Justice Stewart adroitly observed in *Von's Grocery*: “The irony . . . is that the Court invokes its sweeping new construction of § 7 to the detriment of a merger between two relatively successful, local, largely family-owned concerns, each of which had less than 5% of the local market and neither of which had any prior history of growth by acquisition.”⁵² And as the *Topco* case illustrates, joint ventures imposing limited restrictions that were necessary to enhance small businesses' competitive standing were not merely condemned under the rule of reason, but were

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⁴⁹ See, e.g., *Brown Shoe v. United States*, 370 U.S. 294, 344 (1962) (accepting that “occasional higher costs and prices might result from” its interpretation and holding); *Utah Pie Co. v. Cont'l Baking Co.*, 386 U.S. 685, 699–700 (1967) (condemning conduct that resulted in lower prices because it impaired a competitor's ability to compete); *United States v. Trans-Missouri Freight Ass'n*, 166 U.S. 290, 323–24 (1897) (“[m]ere reduction in the price of the commodity dealt in” was not a compelling reason to permit conduct).

⁵⁰ *Director & Levi*, *supra* note 33, at 286.

⁵¹ See, e.g., *Von's Grocery Co.*, 384 U.S. at 278–79; *United States v. Phila. Nat'l Bank*, 374 U.S. 321, 323–24 (1963); *Brown Shoe Co. v. United States*, 370 U.S. 294, 346 (1962).

⁵² *United States v. Von's Grocery Co.*, 384 U.S. 270, 296–97 (Stewart, J., dissenting).

deemed *per se* unlawful; no consideration of the effects (economic or otherwise) was allowed.⁵³ As Justice Blackmun explained in that case, “today’s decision will tend to stultify Topco members’ competition with the great and larger chains. The bigs, therefore, should find it easier to get bigger and, as a consequence, reality seems at odds with the public interest.”⁵⁴ Indeed, far from helping smaller enterprises, court decisions during this time often “completely destroyed the very small, locally owned businesses that the decisions were intended to protect.”⁵⁵

In a state of desperate disarray, antitrust law was in need of a foundational reexamination and rebuilding. The spark for this much-needed work came from economists and legal scholars at the University of Chicago.⁵⁶ These experts initiated a robust, introspective dialogue on antitrust law and its goals, beginning with the “*Fortune Magazine Debates*.”⁵⁷ In these pages, well-respected experts on the one side defended the multi-faceted, socio-political approach to antitrust, while those on the other countered that economic welfare and analysis, alone, should prevail. The true value of competition, these scholars argued, was in its ability to expand output. They contended that antitrust law could unleash this output expansion by focusing solely on competition. For an area

⁵³ *Topco*, 405 U.S. at 608 (“We think it clear that the restraint in this case is a horizontal one, and, therefore, a *per se* violation of Section 1.”).

⁵⁴ *Topco*, 405 U.S. at 612 (Blackmun, J., concurring); *see also id.* at 614 (Burger, J., dissenting) (“Indeed, the economic effect of the new rule laid down by the Court today seems clear: unless Congress intervenes, grocery staples marketed under private label brands with their lower consumer prices will soon be available only to those who patronize large national chains.”).

⁵⁵ Hovenkamp, *Progressive Antitrust*, *supra* note 32, at 85.

⁵⁶ RICHARD A. POSNER & FRANK H. EASTERBROOK, *ANTITRUST: CASES, ECONOMIC NOTES AND OTHER MATERIALS*, at xvi (2d ed. 1981); Bruce H. Kobayashi & Timothy J. Muris, *Chicago, Post-Chicago, and Beyond: Time to Let Go of the 20th Century*, 78 *ANTITRUST L.J.* 147, 150 (2012).

⁵⁷ *See* Harlan M. Blake & William K. Jones, *In Defense of Antitrust*, *FORTUNE*, Aug. 1964, at 135, reprinted in 65 *COLUM. L. REV.* 377 (1965); Harlan M. Blake & William K. Jones, *Toward a Three-Dimensional Antitrust Policy*, 65 *Colum. L. Rev.* 422, 422 (1965); Robert H. Bork & Ward S. Bowman, Jr., *The Crisis in Antitrust*, *Fortune*, Dec. 1963, at 138, reprinted in 65 *COLUM. L. REV.* 363 (1965); Robert H. Bork, *Contrasts in Antitrust Theory: I*, 65 *COLUM. L. REV.* 401, 401 (1965); Ward S. Bowman, *Contrasts in Antitrust Theory: II*, 65 *COLUM. L. REV.* 417, 417 (1965).

of law that, so far, had proven inept at fostering any one of its many goals, this was an intriguing proposition.⁵⁸

These efforts catalyzed later works expanding upon the basic premise that, by tethering antitrust to an economic foundation, antitrust could become a powerful force of growth. This foundation necessarily rejected the socio-political approach thus far developed because, as noted, it tended to protect firms from the very competition and market forces that drove economic growth and expansion. Work focused on questions of first principles: what is it we want antitrust law to do, and why? And then rigorously examined its capacity to meet these goals. Notably, the marketplace of ideas here began with vigorous voices on both sides, arguing for and against the socio-political approach to antitrust.

As the debate progressed, the economic approach began to gain momentum, bolstered by both theory and practical experience. The socio-political goals had proven to be largely (if not wholly) out of reach, as demonstrated through several decades in this failed experiment. But the possibility of enhancing economic welfare seemed tantalizingly within reach. It also aligned with the broad purpose of the antitrust statutes, which sought to foster competition and to protect individuals; to succeed, firms would have to engage in activities that benefit individual consumers, namely, finding ways to lower prices, expand output, innovate, offer better quality or services, and more. Meanwhile, activities that subverted free market forces could be consistently condemned. As the Supreme Court had recently recognized, “The Sherman Act was designed to be a comprehensive charter of economic liberty aimed at preserving free and unfettered competition as the rule of trade. It rests on the premise that the unrestrained interaction of competitive forces will yield the best allocation of our economic resources, the lowest

⁵⁸ Bork & Bowman, *supra* note 57, at 365.

prices, the highest quality and the greatest material progress[.]”⁵⁹ The Court may have struggled with how to implement and unleash these competitive forces, but the foundation for an economics-based approach to antitrust had been laid.

With the renewed energy and clarity of purpose these efforts provided, the courts forged ahead with the work of incorporating these new insights into the law and the matters before them. The Court’s decision in *Continental Television, Inc. v. GTE Sylvania, Inc.*,⁶⁰ is widely acknowledged as marking the shifting of the tides.⁶¹ Here, the Court eschewed the formalistic approach it had previously embraced in cases like *Topco*, and focused instead upon the effects of the conduct before it. It refused to condemn as per se unlawful restraints a manufacturer had imposed on retailers, finding there existed “a number of ways in which manufacturers can use such restrictions to compete more effectively.”⁶² The Court considered the propensity of the conduct before it to harm consumers, utilizing economic insights regarding the ability of such vertical restraints to yield procompetitive effects as opposed to anticompetitive harms. It then held that such conduct should be analyzed under the rule of reason, so as to facilitate the realization of consumer benefits while maintaining the ability to condemn restraints that harmed consumers or competition. This distinctly effects-forward approach represented both a marked departure from the inhospitality tradition, which judged behavior based upon its form, and an evolution to a more informed and coherent approach to fostering competition and consumer welfare.

⁵⁹ N. Pac. R.R. Co. v. United States, 356 U.S. 1, 4 (1958); Standard Oil Co. v. FTC, 340 U.S. 231, 248 (1951) (“The heart of our national economic policy long has been faith in the value of competition.”).

⁶⁰ 433 U.S. 36 (1977).

⁶¹ See, e.g., Kovacic & Shapiro, *supra* note 6, at 53; James C. Cooper et al., *Vertical Antitrust Policy as a Problem of Inference*, 23 INT’L J. INDUS. ORG. 639, 640 (2005); William J. Kolasky & Andrew R. Dick, *The Merger Guidelines and the Integration of Efficiencies into Antitrust Review of Horizontal Mergers*, 71 ANTITRUST L.J. 207, 214–15 (2003).

⁶² 433 U.S. at 54–55.

In the decades since, the Supreme Court and the lower courts have continued to implement this updated approach. While important debates persist to this day regarding how best to craft rules and standards to shape the ideal environment, fundamental themes guiding the analysis were (at least for a time) identified. Economists and the courts agreed that the antitrust laws should seek to foster competition as a means of promoting consumer welfare.⁶³ They should be guided in their efforts by economic theory and empirical evidence, as well as a consideration of error costs. In other words, legal theories of harm should be largely coextensive with economic theories as to when anticompetitive effects may arise; this provides a solid foundation for legal theories and a coherent method of crafting, articulating, and proving alleged harms. Empirical evidence—about both of the conduct at issue and similar conduct—should inform the rules and standards regarding the level of evidence and proof needed to win a case based upon such a theory; this fosters predictable and consistent outcomes over time, while allowing for evolution as our collective understanding of conduct develops. Scholars participating in this debate—inside and outside the Chicago School—noted that antitrust law was hostile to large swaths of conduct, but when they inquired as to the reasoning underlying that hostility, discovered many unproven assumptions. Finally, courts should seek to establish rules and standards that minimize the combination of costs deriving from administering the relevant rules, from false positives (Type I errors) and from false negatives (Type II errors).⁶⁴

C. Aftermath of a Revolution: Consumer Welfare and Continuing Developments

Antitrust law has largely flourished in the last 40 or so years, having established a

⁶³ See *Reiter v. Sonotone Corp.*, 442 U.S. 330, 343 (1979) (holding the Sherman Act is a “consumer welfare prescription”).

⁶⁴ See Easterbrook, *supra* note 31; Wright et al, *supra* note 2. See also, Geoffrey Manne, *Error Costs in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

newfound sense of self that is both coherent and capable of achieving its ends. It benefits from a longstanding and nonpartisan support for the consumer welfare standard.⁶⁵ The Supreme Court has consistently, and on a nonpartisan basis, acknowledged the economic grounding and consumer welfare goals of the antitrust laws.⁶⁶ The consumer welfare standard today thus serves as a common language unifying antitrust cases and analysis. Continued disagreements over original legislative intent have not forestalled this consensus, owing to this and many other benefits (developed below), including increased certainty, clarifying and narrowing the scope of applicable goals to consider, and facilitating the rule of law.⁶⁷

This is not to say antitrust law is without its imperfections and shortcomings—far from it. Important debates regarding all manner of issues, from market definition⁶⁸ and

⁶⁵ Deborah Garza, Deputy Assistant Att’y Gen., Antitrust Div., U.S. Dep’t of Justice, Remarks on Modernization of Antitrust Law—Private and Public Enforcement and Abuses—Europe and the U.S. (May 29, 2008), <https://www.justice.gov/atr/speech/remarks-modernization-antitrust-law-private-and-public-enforcement-and-abuses-europe-and> (“Even the most passionate critics of current enforcement policy recognize the constraining influence of existing case law and, importantly, the substantial degree of consensus that exists today around most aspects of antitrust policy—a consensus forged on a solid foundation of economic learning. . . . We won’t return to what antitrust enforcement looked like 40 years ago.”).

⁶⁶ See, e.g., *Nat’l Collegiate Athletic Ass’n v. Bd. of Regents of Univ. of Okla.*, 468 U.S. 85, 107 (1984); *Reiter v. Sonotone Corp.*, 442 U.S. 330, 343 (1979) (“Congress designed the Sherman Act as a ‘consumer welfare prescription.’”); *Cont’l T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 54 (1977); see also The Nomination of Elena Kagan to Be an Associate Justice of the Supreme Court of the United States: Hearing Before the S. Comm. on the Judiciary, 111th Cong. (2010) (statement of Elena Kagan, nominee for Associate Justice of the Supreme Court) (“[I]t is clear that antitrust law needs to take account of economic theory and economic understandings.”).

⁶⁷ See also Ginsburg, *supra* note 10, at 950.

⁶⁸ See, e.g., Louis Kaplow, *Why (Ever) Define Markets?*, 124 HARV. L. REV. 437 (2010); Gregory J. Werden, *Why (Ever) Define Markets? An Answer to Professor Kaplow*, 78 ANTITRUST L.J. 729 (2013).

efficiencies⁶⁹ to the applicability of quick look rules⁷⁰ and presumptions,⁷¹ persist and continue to inform modern enforcement.⁷² For instance, while some argue that antitrust agencies should be more skeptical of vertical mergers,⁷³ others contend modern enforcement aligns with available empirical evidence regarding the likelihood of anticompetitive harm.⁷⁴ But antitrust's embrace of an economically-grounded approach, guided by the consumer welfare standard, has provided a sound foundation upon which these debates may build. Disagreements can (and often do) arise regarding the likely economic effects in a given case; but all interested parties know what the locus of the inquiry will be and how the conduct will ultimately be judged. There is, in other words, a common language spoken across antitrust cases. Unlike the early days during which antitrust decisions were based upon any number of incompatible socio-political goals, decisions today speak solely to the economic effects of the conduct at issue. To continue

⁶⁹ See, e.g., Statement of the Fed. Trade Comm'n, *Ardagh Group S.A.*, No. 131-0087 (Apr. 11, 2014), https://www.ftc.gov/system/files/documents/public_statements/568771/140411ardaghcommstmt.pdf (discussing efficiencies); Dissenting Statement of Commissioner Joshua D. Wright, *Ardagh Group S.A.*, No. 131-0087 (Apr. 11, 2014), https://www.ftc.gov/system/files/documents/public_statements/568821/140411ardaghstmt.pdf (discussing efficiencies); Roger D. Blair, Christine S. Wilson, D. Daniel Sokol, Keith Klovers & Jeremy A. Sandford, *Analyzing Vertical Mergers: Accounting for the Unilateral Effects Tradeoff and Thinking Holistically About Efficiencies*, 27 GEO. MASON L. REV. 761 (2020).

⁷⁰ See, e.g., *F.T.C. v. Actavis, Inc.*, 570 U.S. 136, 158-60 (2013) (examining FTC's arguments for quick look, but holding rule of reason is appropriate in "reverse" payment cases).

⁷¹ See e.g., Douglas H. Ginsburg, Joshua D. Wright, *Philadelphia National Bank: Bad Economics, Bad Law, Good Riddance*, 80 ANTITRUST L.J. 377 (2015) (criticizing the structural presumption in merger analysis).

⁷² The Vertical Merger Guidelines, for instance, were the product of a series of hearings and antitrust debate. U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, VERTICAL MERGER GUIDELINES (2020), https://www.ftc.gov/system/files/documents/reports/us-department-justice-federal-trade-commission-vertical-merger-guidelines/vertical_merger_guidelines_6-30-20.pdf.

⁷³ See, e.g., Steven C. Salop, *Invigorating Vertical Merger Enforcement*, 127 YALE L.J. 1962, 1982-84 (2018).

⁷⁴ Global Antitrust Institute, *The Federal Trade Commission's Hearings on Competition and Consumer Protection in the 21st Century, Vertical Mergers*, at 8 (Sept. 6, 2018), <https://perma.cc/8VM2-VE78> ("In sum, these papers from 2009-2018 continue to support the conclusions from Lafontaine & Slade (2007) and Cooper *et al.* (2005) that consumers mostly benefit from vertical integration. While vertical integration can certainly foreclose rivals in theory, there is only limited empirical evidence supporting that finding in real markets."); Global Antitrust Institute, *DOJ/FTC Draft 2020 Vertical Merger Guidelines Comment*, at 14 (Geo. Mason L. & Econ. Research Paper Series, Paper No. 20-03, 2020) (updating that analysis).

the metaphor, rather than arguing over which language to use, parties debate which nuances of the same language best characterize the conduct at issue.

The consumer welfare standard's focus on economic insights and teachings also affords the flexibility to introduce new theories and concepts, allowing courts and enforcers more accurately to assess the competitive effects of the conduct before them.⁷⁵ For instance, the entire raising rivals' costs (RRC) paradigm arose and was incorporated into the antitrust lexicon post-revolution.⁷⁶ Today, RRC theory often drives exclusionary conduct cases. Similarly, modern unilateral effects theory, which underpins a majority of merger enforcement cases today, developed after the antitrust revolution and was largely implemented in the 1990s.⁷⁷ Robust debates continue to expand our understanding of what competitive behavior looks like in the modern digital economy, and how most effectively to promote healthy competition while preventing anticompetitive conduct. These debates remain robust, in part, because the consumer welfare standard is able to incorporate new insights—giving those insights real value in modern enforcement efforts. Indeed, the Supreme Court has, on multiple occasions, recognized that antitrust outcomes should develop along with sound developments in our economic comprehension.⁷⁸

⁷⁵ See Bruce H. Kobayashi & Timothy J. Muris, *Chicago, Post-Chicago, and Beyond: Time to Let Go of the 20th Century*, 78 ANTITRUST L.J. 147 (2012).

⁷⁶ See, e.g., Thomas Krattenmaker & Stephen C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs To Achieve Power over Price*, 96 YALE L.J. 209, 214 (1986); Steven C. Salop & David T. Scheffman, *Cost-Raising Strategies*, 36 J. INDUS. ECON. 19, 19–20 (1987); Stephen C. Salop & David T. Scheffman, *Raising Rivals' Costs*, 73 AM. ECON. REV. 267, 267 (1983).

⁷⁷ See, e.g., U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES (2010); Carl Shapiro, *The 2010 Horizontal Merger Guidelines: From Hedgehog to Fox in Forty Years*, 77 ANTITRUST L.J. 701, 705-06, 712 (2010).

⁷⁸ See, e.g., *Kimble v. Marvel Entertainment, LLC*, 576 U.S. 446, 461-62 (2015) ("Congress, we have explained, intended that the [Sherman Act's] reference to 'restraint of trade' to have 'changing content,' and authorized courts to oversee the term's 'dynamic potential.' We have therefore felt relatively free to revise our legal analysis as economic understanding evolves and . . . to reverse antitrust precedents that misperceived a practice's competitive consequences. Moreover, because the question in those cases was

II. ANTITRUST IN ACTION: THE CONSUMER WELFARE STANDARD AND MODERN ENFORCEMENT

The consumer welfare standard brought analytical rigor and returned the rule of law to an area once lacking both. It accomplished this while also providing flexibility for enforcers and courts to keep pace with modern markets and to condemn even novel conduct that anticompetitively harms consumers. This is possible only because of the standard's economic grounding. It elevates the practical, likely *effects* of conduct as the locus of analysis, rejecting the earlier approach that frequently condemned conduct based upon form alone.

A. What the Consumer Welfare Standard Is and What it Does

To begin, it is important to understand what the consumer welfare standard is and what it is not, what it does and does not do. While the consumer welfare standard is the lodestar of antitrust analysis, it is not a liability rule. Certain conduct may be unlawful *per se* or it may be unlawful under a rule of reason analysis (or even a “quick look” analysis). Different theories of harm then entail different evidentiary requirements to satisfy either the *per se* rule or rule of reason requirements. For instance, predatory pricing claims require evidence of a price below cost plus a likelihood of recoupment;⁷⁹ attempted monopolization claims require demonstration of anticompetitive conduct, with a specific intent to monopolize, and a dangerous probability of achieving monopoly power; etc.⁸⁰ The consumer welfare standard informs these and other requirements. It tells us that, in choosing the appropriate rules and requirements, we should look to the

whether the challenged activity restrained trade, the Court's rulings necessarily turned on its understanding of economics. Accordingly, to overturn the decisions in light of sounder economic reasoning was to take them ‘on [their] own terms.’” (internal citations omitted)); *Leegin Creative Leather Prod., Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007); *Bus. Elecs. Corp. v. Sharp Elecs. Corp.*, 485 U.S. 717 (1988).

⁷⁹ *Brooke Group v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993).

⁸⁰ *Spectrum Sports v. McQuillan*, 506 U.S. 447, 459 (1993).

propensity of a given type of conduct to yield procompetitive benefits or anticompetitive harms, and to the conditions under which one or the other is more likely to predominate. In other words, the consumer welfare standard is aligned with what antitrust law is endeavoring to promote, and hence helps to inform the development of the law, including what liability rule may be appropriate for given conduct.

What does antitrust analysis under the consumer welfare standard actually consider? There are many arguments regarding what the consumer welfare standard can and should cover.⁸¹ But there are also some clearly delineated answers.

Most fundamentally, the consumer welfare standard tethers antitrust to economic analysis. It rejects the consideration of socio-political factors that so frustrated early antitrust cases. In doing so, it provides a consistent language spoken across antitrust cases today. From the focus upon economic factors, a few key premises follow.

It is by now axiomatic that the antitrust laws were designed to protect competition—that is, the competitive process itself—and not to protect individual competitors.⁸² Whereas pre-consumer welfare antitrust might condemn an efficient competitor simply for offering prices lower than a less effective competitor could match,⁸³

⁸¹ There is also a robust debate about whether the notion of “consumer welfare” or “total welfare” is more appropriate. This debate considers which of two very similarly, economically grounded standards is more desirable. See, e.g., Kenneth Heyer, *Consumer Welfare and the Legacy of Robert Bork*, 57 J.L. & ECON. S19 (2014).

⁸² *NYNEX Corp. v. Discon, Inc.*, 525 U.S. 128, 135 (1998) (“[P]laintiff . . . must allege and prove harm, not just to a single competitor, but to the competitive process, i.e., to competition itself.”); *Spectrum Sports*, 506 U.S. at 458-59 (“The [antitrust] law directs itself not against conduct which is competitive, even severely so, but against conduct which unfairly tends to destroy competition itself. . . . [T]his Court and other courts have been careful to avoid constructions of [Sherman Act] § 2 which might chill competition, rather than foster it.”); *Brooke Grp. Ltd.*, 509 U.S. at 224 (“That below-cost pricing may impose painful losses on its target is of no moment to the antitrust laws if competition is not injured”); *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 488 (1977) (quoting *Brown Shoe Co. v. United States*, 370 U.S. 294, 320 (1962)) (“The antitrust laws, however, were enacted for ‘the protection of competition not competitors.’ It is inimical to the purposes of these laws to award damages for the type of injury claimed here.”); *Fed. Trade Comm’n v. Qualcomm Inc.*, 969 F.3d 974, 982 (9th Cir. 2020) (“This case asks us to draw the line between *anticompetitive* behavior, which is illegal under federal antitrust law, and *hypercompetitive* behavior, which is not.”).

⁸³ See, e.g., *Utah Pie Co. v. Cont’l Baking Co.*, 386 U.S. 685 (1967).

modern antitrust would not.⁸⁴ This is a critical development that eased numerous tensions. Competition is often a messy business. By design, it allows some firms to win—meaning others must lose. But it is the very *possibility* of winning that drives competition in the first place. Indeed, the Supreme Court has repeatedly recognized that the prospect of winning—that is, of gaining market share and setting prices accordingly—is critical to encouraging competition itself: “The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system.”⁸⁵ One simply cannot exist without the other.

A corollary of this premise is that harm to competitors, alone, is insufficient. There remains, of course, a role for the consideration of harm to competitors in the analysis. For instance, if a defendant undertook a strategy to raise rivals’ costs, if and how those competitors were affected would be relevant to ascertaining the effect this strategy had on competition in the market. But a successful antitrust case today cannot simply be premised upon an allegation of harm to a competitor that does not include harm to competition more broadly.⁸⁶

Indeed, this fundamental notion is not only engrained in U.S. antitrust law, it is recognized globally as the driving goal of competition laws. The OECD, for instance, has identified “substantial agreement among jurisdictions on the broad goals and methods of enforcing competition laws against abuse of dominance, particularly with respect to studying harm to competition, not competitors.”⁸⁷ In this way, the consumer welfare

⁸⁴ See, e.g., *Brooke Group*, 509 U.S. at 224.

⁸⁵ *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004).

⁸⁶ See, e.g., *Brooke Group*, 509 U.S. at 225 (“Even an act of pure malice by one business competitor against another does not, without more, state a claim under the federal antitrust laws[.]”); *United States v. Microsoft Corp.*, 253 F.3d 34, 58 (D.C. Cir. 2001) (“[T]o be condemned as exclusionary, a monopolist’s act must have an ‘anticompetitive effect.’ That is, it must harm the competitive *process* and thereby harm consumers. In contrast, harm to one or more *competitors* will not suffice.”); *Fed. Trade Comm’n v. Qualcomm Inc.*, 969 F.3d 974, 990 (9th Cir. 2020) (citing *Microsoft*, 253 F.3d at 58).

⁸⁷ See, e.g., OECD, POLICY ROUNDTABLES: COMPETITION ON THE MERITS, DAF/COMP(2005)27, at 9 (2005),

standard has truly provided a common, universal language for antitrust enforcement.

Moreover, the consumer welfare standard focuses on understanding how firms compete—and it is robust enough to contemplate the numerous margins along which they might do so. Cases today routinely consider how the conduct at issue affected prices, output, quality, services, innovation, and more. There is a growing misconception today that antitrust law’s consumer welfare standard focuses myopically on short-term price or output effects to the exclusion of other factors—such as effects on innovation and quality—that may be far more important to consumers.⁸⁸ A quick examination of the cases lays bare the fault in these allegations.

Consider recent cases brought by the U.S. Antitrust Agencies. By no means the only cases being brought today—private plaintiffs and state attorneys general also have the right to sue under the federal antitrust laws, an ability they frequently exercise. But the federal Antitrust Agencies do bring many cases that contribute critically to the antitrust enforcement landscape. While the agencies do tend to allege price effects, it is rare that they allege solely price effects. Their investigations routinely consider effects on factors such as innovation, quality, service, and R&D,⁸⁹ as contemplated in their various

<https://www.oecd.org/competition/abuse/35911017.pdf>; see also ICN UNILATERAL CONDUCT WORKING GROUP, UNILATERAL CONDUCT WORKBOOK CHAPTER 2: ANALYTICAL FRAMEWORK FOR EVALUATING UNILATERAL EXCLUSIONARY CONDUCT, ¶ 25 (2017), <https://icn2017.concorrenca.pt/downloads/materials/UCWG-Analytical-Framework-Chapter.pdf> (“Competition law does not exist to insulate firms from competition, but rather to protect the competitive process from efforts to sabotage it. A practice is not considered exclusionary when it causes rivals to falter only because they are inept.”).

⁸⁸ See, e.g., K. Sabeel Rahman & Lina Khan, *Restoring Competition in the U.S. Economy*, in ROOSEVELT INST., UNTAMED: HOW TO CHECK CORPORATE FINANCIAL MONOPOLY POWER 18, 18-25 (Nell Abernathy, Mike Konczal & Kathryn Milani eds., 2016); Neil W. Averitt & Robert H. Lande, *Consumer Choice: The Practical Reason for Both Antitrust and Consumer Protection Law*, 10 LOY. CONSUMER L. REV. 44 (1998).

⁸⁹ See, e.g., Wright et al., *supra* note 2, at 358-60. On innovation, see, e.g., Carl Shapiro, *Competition and Innovation: Did Arrow Hit the Bull’s Eye?*, in THE RATE AND DIRECTION OF INITIATIVE ACTIVITY REVISITED 361 (Josh Lerner & Scott Stern eds., 2012); Richard J. Gilbert & Willard K. Tom, *Is Innovation King at the Antitrust Agencies? The Intellectual Property Guidelines Five Years Later*, 69 ANTITRUST L.J. 43, 44 (2001); Michael L. Katz & Howard A. Shelanski, *Mergers and Innovation*, 74 ANTITRUST L.J. 1, 1 (2007).

guidance documents.⁹⁰

The DOJ's recent and successful challenge of Novelis Inc.'s proposed acquisition of Aleris Corporation, for instance, alleged this transaction would likely raise prices and reduce quality and innovation in the market for aluminum automotive body sheet.⁹¹ The remedy in this case included (among other things) a divestiture of an Aleris technical service center, known as the "Innovation Center."⁹² The FTC similarly challenged and achieved remedies in the merger of UnitedHealth Group Incorporated and DaVita Inc., finding the merger was likely to raise prices, to "result in a decrease in incentive to compete on quality, services, and other amenities," and to force senior citizens to "incur higher cost-sharing payments and receive fewer benefits and lower quality healthcare services."⁹³ These cases—and many others—demonstrate both that the consumer welfare standard is routinely used to prevent adverse non-price effects and that the Agencies can and do file (and win) such cases.

To illustrate the comprehensive approach the Agencies typically take, the below chart identifies civil merger complaints filed by the Antitrust Division between January 2019 and September 2020, and the categories of harms those complaints specifically identified:⁹⁴

⁹⁰ See, e.g., U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES § 6.4 (2010); U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY IP GUIDELINES (2007).

⁹¹ Complaint at 2, *United States v. Novelis*, No. 19-2033 (Sept. 4, 2019), <https://www.justice.gov/atr/case-document/file/1199461/download>.

⁹² Competitive Impact Statement at 9, *United States v. Novelis*, No. 19-2033 (May 12, 2020), <https://www.justice.gov/atr/case-document/file/1276101/download>.

⁹³ Complaint, *UnitedHealth Grp. Inc.*, No. C-4677, ¶¶ 17, 19 (June 19, 2019), https://www.ftc.gov/system/files/documents/cases/181_0057_c4677_united_davita_complaint_6-19-19.pdf.

⁹⁴ See Appendix A for case information. Data compiled through DOJ Antitrust Division's webpage, *Antitrust Case Filings*, <https://www.justice.gov/atr/antitrust-case-filings>, selecting the filter functions (1) "Filter by case open date" (2019 and 2020), and (2) "Filter by case type" (Civil Merger); and includes only those cases which included a Clayton Act § 7 claim(s). Data supplemented with cases reported as filed in FY 2019 in the HSR FY2019 Report, <https://www.ftc.gov/system/files/documents/reports/federal-trade-commission-bureau-competition-department-justice-antitrust-division-hart-scott->

Table 1
DOJ Civil Merger Cases: Categories of Effects Alleged
Filed January 2019 through September 2020

Case name	Filing Date	Price	Quality	Innovation	Service	Other contractual terms	Consumer Choice
US v. Anheuser-Busch InBev SA/NV	9/18/20	X		X			
US v. Geisinger Health and Evangelical Community Hospital	8/05/20	X	X		X		
US v. Odyssey Investment Partners Fund V, LP	5/28/20	X	X	X		X	
US v. Dairy Farmers of America and Dean Foods Co.	5/1/20	X	X		X		
US v. United Technologies Corp. and Raytheon Co.	3/26/20	X	X	X		X	
US v. Olympus Growth Fund VI, LP	2/19/20	X	X	X	X		
US v. ZF Friedrichshafen AG and WABCO Holdings, Inc.	1/23/20	X	X	X	X	X	
US v. Symrise AG	10/30/19	X	X	X			
US v. Novelis, Inc. and Aleris Corporation	9/4/19	X		X	X		
US v. Sabre Corp.	8/20/19	X	X	X	X		X
US v. Nexstar Media Group and Tribune Media Co.	7/31/19	X	X	X			

rodino/p110014hsrannualreportfy2019_0.pdf. Categories are marked with an “X” only if the complaint specifically identify these effects in the “Anticompetitive Effects of the Proposed Transaction” or the “Violations Alleged” paragraphs of the complaint.

US v. Deutsche Telekom AG	7/26/19	X	X	X			X
US v. Harris Corporation and L3 Technologies, Inc.	6/20/19	X		X		X	
US v. Quad/Graphics, Inc.	6/20/19	X	X				
US v. Amcor Limited and Bemis Company, Inc.	5/30/19	X	X		X		
US v. Thales SA and Gemalto NV	2/28/19	X	X	X			X

In all but four of these matters, the Division simultaneously filed a complaint and proposed final judgment that included, among other provisions, divestiture requirements. In one of the remaining cases, the parties abandoned the deal after the Division filed its complaint.⁹⁵ The Division litigated and lost just one case.⁹⁶ The final case was recently filed and remains in litigation at the time of this Chapter's publication.

In other words, over the last twenty-one months, the Division filed suit against sixteen mergers as likely to substantially lessen competition along any of a number of margins. None of these challenges relied solely upon alleged price effects. And the Division prevented all but one merger from being consummated in its original, allegedly anticompetitive form; only one other stands a chance of remaining unremedied, were the parties to continue to litigation and ultimately to prevail.⁹⁷

⁹⁵ Press Release, Quad/Graphics and LSC Communications Abandon Merger After Antitrust Division's Suit to Block, U.S. Dep't of Justice (July 23, 2019), <https://www.justice.gov/opa/pr/quadgraphics-and-lsc-communications-abandon-merger-after-antitrust-division-s-suit-block>.

⁹⁶ Note that the parties nonetheless abandoned that deal after the UK Competition and Markets Authority concluded it violated UK law. Reuters Staff, *Sabre, Farelogix Terminate Merger Agreement*, REUTERS (May 1, 2020), <https://www.reuters.com/article/us-farelogix-m-a-sabre/sabre-farelogix-terminate-merger-agreement-idUSKBN22D697>.

⁹⁷ Note that this data does not include any mergers that parties may have dropped before the Division filed a complaint; when the Antitrust Agencies signal they are likely to challenge a deal and there is no settlement, parties may walk away from the transaction before any complaint is filed. Note further, once the Division files a Proposed Final Judgment, the court conducts a Tunney Act review process; these processes sometimes result in modifications to a consent decree, but a decree is almost always ultimately

The FTC likewise frequently alleges harm based upon more than just price effects.⁹⁸ For instance, it specifically alleged harm to innovation in 54 merger challenges filed between 2004 and 2014.⁹⁹ These cases underscore that analysis under the consumer welfare standard routinely incorporates both price and non-price aspects of competition.

B. Benefits of the Consumer Welfare Standard

The benefits of the consumer welfare standard are myriad and significant. This standard establishes a common language that is spoken across antitrust cases, ensuring that courts, agency enforcers, and private parties are able to converse and debate the effects of the conduct at issue, knowing that the ultimate decision will be based upon those very effects. This facilitates a coherent and consistent framework for analysis and the predictability of outcomes. As developed above, the socio-political antitrust regime that prevailed through the mid-20th century wrestled with numerous, often amorphous, factors and lacked any principled means for settling on which of these many bases to rest a given decision. This approach had many costs, including that it essentially obliterated the rule of law.¹⁰⁰ The consumer welfare standard, by contrast, tethers antitrust decisions resolutely to economic effects. This consistency returned a sense of intellectual respect to this area of law. Importantly, it also returned the rule of law.¹⁰¹

Moreover, the consumer welfare standard replaced the form-based inhospitality regime with an effects-based approach that promotes efficiency and innovation. The

entered.

⁹⁸ See Appendix B, Table 2 for a similar chart tracking the categories of effects alleged in recent FTC merger complaints.

⁹⁹ Joshua D. Wright, *Antitrust Provides a More Reasonable Regulatory Framework Than Net Neutrality*, at 11 (Geo. Mason L. & Econ. Research Paper No. 17-35, 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3020068.

¹⁰⁰ See *United States v. Von's Grocery Co.*, 384 U.S. 270, 301 (1966) (Stewart, J., dissenting).

¹⁰¹ See Elyse Dorsey et al., *Consumer Welfare & the Rule of Law: The Case Against the New Populist Antitrust Movement*, 47 PEPPERDINE L. REV. 861 (2020); Douglas H. Ginsburg and Taylor M. Owings, *Due Process in Competition Proceedings*, 11 COMPETITION L. INT'L 39 (2015).

inhospitality tradition had crippled firms' ability to compete. By treating with extreme skepticism anything they perceived as novel, courts precluded much of the innovation and experimentation with new ideas and approaches that competition needs to survive. Coupled with severe limitations on what firms—large or small—could do to grow, this approach tended to impair competition itself.

The consumer welfare standard replaced this focus upon form and familiarity with an emphasis upon effects and fostering an environment conducive to innovation. The Ninth Circuit's recent decision in *FTC v. Qualcomm*, for instance, specifically found that "novel business practices—*especially* in technology markets—should not be 'conclusively presumed to be unreasonable and therefore illegal without elaborate inquiry into the precise harm they have caused or the business excuse for their use.'"¹⁰² This reflects a respect for innovation—and the often messy (and costly) process of trial and error that inevitably accompanies it—which the prerevolutionary antitrust regime rejected. Innovation is critical to the modern economy. The consumer welfare approach allows antitrust law to respect and promote innovation and to realize the tremendous benefits of innovation, while simultaneously protecting consumers from truly anticompetitive conduct.

Indeed, the consumer welfare approach focuses on maximizing outcomes for the public at large. All citizens are consumers. Many also play other roles in our societies and economies, including as employees, employers, and business owners. The role of consumer, though, is the most constant and consistent. People may flow into and out of the labor force over time, and may transition between employee and employer roles or between small- and large-business owner. But we continue to be consumers our entire lives. A rule that seeks to maximize benefits to consumers accordingly tends to provide

¹⁰² Federal Trade Commission v. Qualcomm Inc., 969 F.3d 974, 990-91 (9th Cir. 2020).

the most consistent benefits over each person's lifetime.¹⁰³ Meanwhile, a rule that favors more specialized narrower interests, such as small business owners, would tend to undermine the broader welfare in favor of the welfare of more specialized interests.

Finally, the consumer welfare standard plays a critical role in limiting the rent seeking, political influence, and protectionism that plagued the prerevolutionary antitrust regime. Socio-politically oriented antitrust enforcement proved highly susceptible to rent seeking and capture by special interest groups.¹⁰⁴ This is unsurprising based upon public choice theory, which predicts that the vaguer a rule is, the more discretion is afforded the enforcer; in turn, more discretion tends to invite more rent seeking behavior, and to increase the likelihood of agency capture. That is, as uncertainty as to outcomes increases, firms will expend more resources towards assuring themselves positive results—for instance, by seeking favorable legislation or agency enforcement aimed at a competitor.

Simultaneously, when rules are opaque, it is more difficult (maybe even impossible) to hold government actors—enforcers and courts—responsible for their actions, as there is no clear way to distinguish between meritorious and biased decisions. In other words, the very factors that characterized pre-revolution antitrust—confusion, vagueness, a multiplicity of goals—made it ripe for abuse. And abused it was.¹⁰⁵ The consumer welfare standard, by contrast, provides a clear roadmap for identifying when enforcers might go off the approved track and consider non-economic, i.e., inappropriate, factors in their decisions. This provides strong protections against capture and political abuse; protections that were notoriously lacking in the socio-political antitrust regime.

¹⁰³ See Dorsey et al., *Consumer Welfare and the Rule of Law*, *supra* note 101, at 881-82.

¹⁰⁴ See, e.g., Elyse Dorsey et al., *Hipster Antitrust Meets Public Choice Economics: The Consumer Welfare Standard, Rule of Law, and Rent Seeking*, *ANTITRUST CHRON.*, at 1, 5-7 (Apr. 2018) (reviewing relevant literature).

¹⁰⁵ See *infra* Section III.A.

III. ANTITRUST IN RETROGRADE: RENEWED CRITICISMS OF ANTITRUST’S GOALS

At the time of this Chapter’s publication, numerous scholars, politicians, and commenters are advocating vociferously for antitrust law to return to its pre-revolution framework. They assert that modern antitrust is undermining democratic values, allowing silos of economic and political power to continue to grow while inequality likewise grows, and permitting laborers increasingly to be taken advantage of.¹⁰⁶ These arguments are similar, if not identical, to arguments made in the mid-20th century.¹⁰⁷ And they have, as they occasionally do, gained traction in recent years. At least one national political party has included both antitrust and positions sympathetic to neo-Brandeis sentiments in its policy platforms;¹⁰⁸ presidential candidates have incorporated antitrust issues as central points of their campaigns;¹⁰⁹ legislative bodies have launched

¹⁰⁶ See, e.g., Khan & Vaheesan, *supra* note 3, at 238-45, 265-68 (arguing market power contributes to inefficiency and that economic power is often converted to political power); Jason Furman & Peter Orszag, A Firm-Level Perspective on the Role of Rents in the Rise in Inequality, Presentation at “A Just Society” Centennial Event in Honor of Joseph Stiglitz at Columbia University (Oct. 16, 2015), <http://gabriel-zucman.eu/files/teaching/FurmanOrszag15.pdf> (arguing lax antitrust enforcement contributes to rising inequality); Warren, *supra* note 3 (“Today’s big tech companies have too much power—too much power over our economy, our society, and our democracy.”); Lina M. Khan, *Amazon’s Antitrust Paradox*, 126 YALE L.J. 710, 767 (2017) (describing the “political risks associated with Amazon’s market dominance”); *Anti-Monopoly Basics: Democracy & Monopoly, Open Markets*, <https://www.openmarketsinstitute.org/learn/democracy-monopoly> (last visited Sept. 6, 2020) (describing the “anti-monopoly system . . . from the 1930s through the 1980s” as contributing to benefits for laborers like increased wages, ending child labor and establishing the 40-hour work week).

¹⁰⁷ Hovenkamp, *supra* note 33, at 119, 121 (“In sum, the neo-Brandeis movement hardly reflects new thinking on these issues. The same themes have appeared and reappeared over antitrust history.”); Christine S. Wilson & Keith Klovers, *The Growing Nostalgia for Past Regulatory Misadventures and the Risk of Repeating These Mistakes with Big Tech*, 8 J. ANTITRUST ENFORCEMENT 10, 11 (Nov. 7, 2019) (“In the USA, this discussion has induced comparisons to—and an odd nostalgia for—the comprehensive regulations that once governed[.]”).

¹⁰⁸ See, e.g., DEMOCRATIC PLATFORM COMM., 2016 DEMOCRATIC PARTY PLATFORM 11 (July 8–9, 2016), https://democrats.org/wp-content/uploads/2018/10/2016_DNC_Platform.pdf; *Crack Down on Corporate Monopolies & the Abuse of Economic and Political Power*, A BETTER DEAL, <https://abetterdeal.democraticleader.gov/the-proposals/crack-down-on-abuse-of-power/> (last visited Apr. 8, 2020).

¹⁰⁹ See, e.g., Warren, *supra* note 3; Elizabeth Culliford, *Where U.S. Presidential Candidates Stand On Breaking Up Big Tech*, REUTERS (Jan. 24, 2020, 5:20AM), <https://www.reuters.com/article/us-usa-election-tech-factbox/where-us-presidential-candidates-stand-on-breaking-up-big-tech-idUSKBN1ZN16C>.

investigations;¹¹⁰ and legislators have introduced legislation.¹¹¹

Very real impediments to (re)adopting these proposals can—and should—exist. They largely repeat those that prevailed prior to the antitrust revolution, idealizing this very problematic era. There is yet no evidence that achievement of the varied socio-political goals being espoused are correlated to antitrust enforcement, let alone causally tied to such enforcement. Accordingly, their proponents fail to articulate why, let alone demonstrate how, antitrust law could, this time, perform any better.

A. Nostalgia and Antitrust

As neo-Brandeisian policies have continued to build momentum, it has become increasingly clear that its advocates rely heavily upon the same arguments as pre-revolution antitrust. Critics invoke legislative history as being unambiguously in support of their position¹¹²—an argument that is, at best, controversial but uninformative.¹¹³ Aside from the general limitations upon the probative value of legislative history, in antitrust

¹¹⁰ See, e.g., Press Release, House Committee on the Judiciary, House Judiciary Committee Launches Bipartisan Investigation into Competition in Digital Markets (June 3, 2019), <https://judiciary.house.gov/news/documentsingle.aspx?DocumentID=2051>; Hearings, Online Platforms and Market Power, Part 6: Examining the Dominance of Amazon, Apple, Facebook, and Google, U.S. House Judiciary Committee, Subcommittee on Antitrust, Commercial, and Administrative Law (July 29, 2020), <https://judiciary.house.gov/calendar/eventsingle.aspx?EventID=3113> (calling CEOs of Amazon, Apple, Alphabet, and Facebook to testify); Press Release, House Committee on the Judiciary, House Judiciary Committee Launches Bipartisan Investigation into Competition in Digital Markets (June 3, 2019), <https://judiciary.house.gov/news/documentsingle.aspx?DocumentID=2051>.

¹¹¹ See, e.g., Monopolization Deterrence Act of 2019, S. 2237, 116th Cong. (2019) (as referred to the S. Comm. on the Judiciary, June 23, 2019); Merger Enforcement Improvement Act, S. 306, 116th Cong. (2019) (as referred to the S. Comm. on the Judiciary Jan. 31, 2019); Consolidation Prevention and Competition Promotion Act of 2019, S. 307, 116th Cong. (2019) (as referred to the S. Comm. on the Judiciary Jan. 31, 2019); Food and Agribusiness Merger Moratorium and Antitrust Review Act of 2018, S. 3404, 115th Cong. (2018) (as referred to the S. Comm. on the Judiciary Aug. 28, 2018).

¹¹² See, e.g., Khan & Vaheesan, *supra* note 3, at 270, 277-79; Vaheesan, *supra* note 10, at 480-81.

¹¹³ As Justice Burger explained, for instance, even Senator Sherman recognized that a large firm or an increase in concentration was not, of its own, unlawful. *United States v. Topco*, 405 U.S. 596, 620-21 (1972) (Burger, J., dissenting) (quoting 21 Cong. Rec. 2457, 2460); see also *supra* Section I.A & n. 15 (quoting Burger, J.).

there is the added complication that, from the very beginning, the statutes afforded to the courts the critical role of operationalizing the broad congressional mandates—of making broadly stated goals and prohibitions workable. As described above, the courts struggled mightily for decades trying to give effect to the numerous socio-political goals that were attributed to antitrust law. Despite their best efforts, these struggles ended in resounding failures for the courts—leading to the very consumer welfare standard critics now condemn.¹¹⁴

Despite this history, the neo-Brandeisians’ position increasingly represents an attempt to invoke nostalgia, hearkening to an allegedly Edenic era. Advocates cite to enforcement and legislation in the early to mid-20th century as “effectively curb[ing] the power of size”¹¹⁵ and promoting a “golden era of egalitarian prosperity.”¹¹⁶ At times, they look back even further, to the early 19th century, arguing that “citizens of the young United States made themselves free to use their state legislatures to ensure that their markets were open and well-regulated and that incorporations of power necessary to

¹¹⁴ Moreover, if, after over a century, Congress is unhappy with how the courts have exercised their delegated power, Congress is always able to enact amendments or new legislation and bear the burden itself of articulating superior goals, rules, or standards for the courts to enforce. See ANDREW I. GAVIL, WILLIAM E. KOVACIC, JONATHAN B. BAKER, & JOSHUA D. WRIGHT, *ANTITRUST LAW IN PERSPECTIVE* 699 (3d ed. 2017) (“Congressional committees responsible for antitrust issues pay close attention to merger policy. Congress could have embedded the precepts of 1960s Supreme Court merger analysis in the Clayton Act if it disapproved of the move by lower courts and enforcement bodies since 1975 to accept more permissive approaches. That Congress has not acted to arrest this development may suggest its general acceptance of modern trends in interpreting and applying Section 7.”).

¹¹⁵ Khan, *supra* note 106, at 724.

¹¹⁶ Stoller, *supra* note 3; see also *Anti-Monopoly Basics: Democracy & Monopoly*, *supra* note 106 (“This anti-monopoly system [from the 1930s to the 1980s] had a profound effect on the American economy and, crucially, on American democracy.”); Consumer Welfare Standard in Antitrust: Outdated or a Harbor in a Sea of Doubt: Hearing Before the Subcomm. on Antitrust, Competition & Consumer Rights of the S. Comm. on the Judiciary, 115th Cong. 8 (2017) (statement of Barry C. Lynn, Executive Director, Open Markets Institute), <https://www.judiciary.senate.gov/imo/media/doc/12-13-17%20Lynn%20Testimony.pdf> (“This philosophy and practice of antimonopoly proved to be a phenomenal political and economic success. Through the heart of the 20th Century, America was at one and the same time the most free, the most prosperous, and most powerful nation on earth.”).

achieve any particular large-scale project were limited in scope and duration.”¹¹⁷

The reality, though, is that they are hearkening to an era that simply never was. In looking back at the “good old days,” humans are prone to look through rose-colored glasses; to romanticize the bygone era and minimize—or ignore entirely—the shortcomings and problems that invariably existed. The same is true with the neo-Brandeis movement. They tend to ignore that concerns about bigness and consolidation persisted even at the height of antitrust’s inhospitality toward them and that small, locally-owned businesses faced very real hardships in that regime.¹¹⁸ They largely fail to engage with the serious struggles, confusion, and disarray that resulted when courts attempted to maximize numerous, amorphous socio-political goals through vague statutory language.¹¹⁹

And they often minimize the very real capture—of antitrust agencies and

¹¹⁷ BARRY C. LYNN, CORNERED: THE NEW MONOPOLY CAPITALISM AND THE ECONOMICS OF DESTRUCTION 103 (2010).

¹¹⁸ See, e.g., *United States v. Topco*, 405 U.S. 596, 612 (1972) (Blackmun, J., concurring) (lamenting the court’s decision would make it easier for big firms to grow bigger, and more difficult for small firms to compete); *Id.* at 613 (Burger, J., dissenting) (“[W]e have here an agreement among several small grocery chains to join in a cooperative endeavor that, in my view, has an unquestionably lawful principal purpose[.]”); *United States v. Von’s Grocery Co.*, 384 U.S. 270, 296 (1966) (Stewart, J., dissenting) (criticizing the majority’s “sweeping new construction of § 7 to the detriment of a merger between two relatively successful, local, largely family-owned concerns”); Hovenkamp & Shapiro, *supra* note 33, at 2018 (“[T]he perceived evil of high concentration in that case [*Brown Shoe*] was scale or scope economies that served to give a large firm a competitive advantage over its rivals and to deliver lower prices to consumers.”); Zlinkoff & Barnard, *supra* note 46, at 155 (“It has been the distinctly small firm which has been increasingly obliterated in the present merger movement. . . . [A] number of the special monographic studies submitted to Congress by the TNEC presented in detail the facts as to the ever increasing concentration of power into fewer and fewer economic units throughout the entire structure of our economy and even the Federal Reserve Board in 1945 submitted a similar study showing the growing concentration, through mergers, of banking institutions in this country.”); Hovenkamp, *supra* note 33, at 118 (“As a matter of history, that view seems naïve. The first half of the 19th century was dominated by major interest group clashes over many aspects of government economic policy, including monopoly, the business corporation, banking, and patent rights.”).

¹¹⁹ See, e.g., Handler, *supra* note 39, at 183 (“[T]he 515 pages of prevailing and dissenting opinions of the Supreme Court are singularly free of enlightenment. Conflicting theories, divergent explanations of the facts and opposing contentions form an impenetrable jumble of words. Turning to the federal and state decisions, confusion is thrice confounded. . . . To reconcile the *rationes decidendi* of the opinions is an impossibility.”).

legislatures—that explicitly elevated the interests of particular groups over those of the public at large. For instance, it was during that time that Congress gave us the Robinson-Patman Act, a statute that leading antitrust expert Herbert Hovenkamp has described as “perhaps the most protectionist piece of antitrust legislation ever passed.”¹²⁰ Repeated studies of outcomes during this time concluded that enforcement decisions were inconsistent with public interest theory, under which agency decisions are made so as to benefit the public at large.¹²¹ In other words, antitrust outcomes were not serving the American public. The Federal Trade Commission—tasked, along with the Department of Justice’s Antitrust Division, with enforcing the antitrust laws—was excoriated in numerous reports for ineptness. As summed up by Judge Richard A. Posner, numerous reports issued between 1924 and 1969 had found the FTC was “rudderless,” “politicized,” and “all in all, inefficient and incompetent.”¹²²

All told, it is clear that antitrust law simply never existed in the coherent and successful form that critics of modern antitrust conceive. Indeed, it was plagued with its own ineptitudes and systemic shortcomings.

B. Antitrust and Socio-Political Goals

There are many key factors to weigh in considering the tradeoffs between the consumer welfare regime and a socio-political approach. Perhaps most important, a socio-political approach would necessarily entail a decrease in consumer welfare.¹²³

¹²⁰ Hovenkamp, *supra* note 33, at 121.

¹²¹ See, e.g., Robert Tollison, *Public Choice and Antitrust*, 4 CATO J. 905, 905 (1985) (“[M]any critics have shown[] the historical record of antitrust decisions will not support the public interest theory.”); Dorsey et al., *supra* note 104, at 1, 5-7 (reviewing relevant literature); *United States v. Topco Assocs., Inc.*, 405 U.S. 596, 613 (1972) (Blackmun, J., concurring) (finding the court’s holding “at odds with the public interest”).

¹²² Richard A. Posner, *The Federal Trade Commission*, 37 U. CHI. L. REV. 47, 47 (1969) (citing Gerard Henderson’s 1924 study, the Hoover Commission’s 1949 Report, the 1960 Landis Report, the 1964 Auerbach Report, the 1969 Nader Report, and the 1969 American Bar Association report).

¹²³ Wright et al., *supra* note 2, at 364.

Modern antitrust law reflects the primacy of consumer welfare; its rules, standards, and outcomes are shaped as to maximize the benefits flowing to consumers. While mistakes and missteps may occur, the fundamental goal is to make all consumers better off through healthy competition.

A socio-political approach would, by contrast, subordinate consumer welfare—in whole or in part—to other concerns. Depending upon the particularities of the socio-political rule, consumer welfare may be one of several factors, or may not be an explicit factor at all. In either case, a rule that says consumer welfare is but one benefit to be considered is necessarily willing to trade away some amount of consumer welfare for some other value(s). For instance, a “citizen interest” approach might conclude that the benefit to consumers of lower prices or enhanced innovation is outweighed by factors like dispersing political power. The direct effect of such a decision would be higher prices and less innovation. Indeed, such outcomes were repeatedly observed in the prerevolutionary antitrust regime. Multiple cases demonstrate the Supreme Court’s willingness to tolerate higher consumer prices in search of other values.¹²⁴

In addition to this basic tradeoff, there is the open question regarding antitrust law’s capacity to achieve socio-political benefits. Antitrust enforcement has proven a poor tool for achieving socio-political goals like dispersing political power; so the purported benefit of the rule might not be realized, while the harms (higher prices and diminished innovation) would be. Proponents of the socio-political approach assume that greater antitrust enforcement under this regime would offer a number of benefits, such as reducing concentration and inequality. These arguments tend to focus not on first-order effects—how conduct affects competition in a market—but upon effects further down in the causal chain. They contend, for instance, economic power might ultimately be

¹²⁴ See, e.g., *United States v. Trans-Missouri Freight Ass’n*, 166 U.S. 290, 323-24 (1897); *Brown Shoe Co. v. United States*, 370 U.S. 294, 344 (1962); *Utah Pie Co. v. Cont’l Baking Co.*, 386 U.S. 685, 703 (1967) (reversing a ruling that would have facilitated lower prices).

translated into political power that allows firms to affect laws and law enforcement.¹²⁵

Further, available empirical evidence “offers little to no support” for many new-Brandeisian assumptions.¹²⁶ Indeed, existing data tend to demonstrate a weak, if any, correlation between antitrust enforcement and the socio-political factors, let alone evidence of causal relationships.¹²⁷ And it “simply does not support the conclusion that (1) there is a meaningful concentration problem in the modern United States economy; (2) assuming such a problem, it is caused by a reduction in competition and a corresponding increase in monopoly power that has resulted in harm to consumers; and (3) again assuming such a problem, that lax antitrust enforcement is to blame, as it is for other social effects, including an increase in economic inequality.”¹²⁸

Here again, several decades of enforcement experience tend to undermine assertions that antitrust law is a competent vehicle for furthering socio-political ends. Consider again the plight of small businesses—one of the most frequently cited reasons for condemning conduct in pre-revolution antitrust.¹²⁹ As explained above, conduct by small businesses was summarily condemned by antitrust courts with alarming frequency. They could scarcely engage in any merger or acquisition activity or any joint ventures—even when that conduct would have allowed them to offer innovative

¹²⁵ Zephyr Teachout & Lina M. Khan, *Market Structure and Political Law: A Taxonomy of Power*, 9 DUKE J. CONST. L. & PUB. POL’Y 37 (2014); Khan & Vaheesan, *supra* note 3, at 238, 265-68 (arguing that “economic power often translates into political power”); Ganesh Sitaraman, *Taking Antitrust Away from the Courts*, The Great Democracy Initiative, at 5 (2018), <https://greatdemocracyinitiative.org/wp-content/uploads/2018/09/Taking-Antitrust-Away-from-the-Courts-Report-092018-3.pdf> (“Economic power is also a danger because it turns into political power. Mega-corporations are able to contribute to candidates, lobby legislators and regulators, dominate trade associations, hold cities hostage for economic giveaways, and shape the law to favor their interests at the expense of everyone else.”).

¹²⁶ Wright et al., *supra* note 2, at 313.

¹²⁷ *Id.* at 313-51.

¹²⁸ *Id.* at 351.

¹²⁹ See, e.g., *United States v. Trans-Missouri Freight Ass’n*, 166 U.S. 290, 323-24 (1897); *Brown Shoe Co. v. United States*, 370 U.S. 294, 344 (1962); *Utah Pie Co. v. Cont’l Baking Co.*, 386 U.S. 685, 703 (1967).

products and lower prices and positioned them to compete more aggressively—without running afoul of the antitrust laws. Despite trying to protect “small dealers and worthy men,”¹³⁰ antitrust outcomes often had the perverse effect of undermining their interests, results which were “documented over and over.”¹³¹

Moreover, there are sound reasons to believe the consumer welfare standard, as currently structured, in fact helps to facilitate (albeit indirectly) several of these socio-political goals. The Supreme Court long ago recognized that “the unrestrained interaction of competitive forces will yield the best allocation of our economic resources, the lowest prices, the highest quality and the greatest material progress, while at the same time providing an environment conducive to the preservation of our democratic political and social institutions.”¹³² Focusing the competitive process and the welfare of consumers indeed can benefit political and social institutions.

The primary beneficiaries of competition are consumers. They realize this value in many ways. Competition may lead to lower prices, which means that consumers are able to purchase more or different goods to enhance their wellbeing or to work less to afford the same bundle of goods. Competition may also lead to benefits in quality, services, and innovation, which provide consumers with an easier or more streamlined experience. Such benefits may leave consumers with more time (and energy), to engage in other activities that they were essentially priced out of before. While this includes leisure

¹³⁰ *United States v. Trans-Missouri Freight Ass’n*, 166 U.S. 290, 323–24 (1897).

¹³¹ Hovenkamp, *supra* note 32, at 85; *see also supra* Section I.B; Hovenkamp, *supra* note 33, at 127 (“Ironically, the statute did not even protect small businesses effectively.”).

¹³² *N. Pac. R.R. Co. v. United States*, 356 U.S. 1, 4 (1958); *Nat’l Soc’y of Prof’l Eng’rs v. United States*, 435 U.S. 679, 695 (1978) (“The Sherman Act reflects a legislative judgment that ultimately competition will produce not only lower prices, but also better goods and services. . . . The assumption that competition is the best method of allocating resources in a free market recognizes that all elements of a bargain—quality, service, safety, and durability—and not just the immediate cost, are favorably affected by the free opportunity to select among alternatives.”); *Standard Oil Co. v. FTC*, 340 U.S. 231, 248 (1951) (“The heart of our national economic policy long has been faith in the value of competition.”).

activities like vacationing, it also includes civic activities, such as volunteering and voting.

Moreover, less wealthy citizens benefit disproportionately from lower prices and enhanced access to products and services. They are the most sensitive to increases in price, or quality-adjusted price increases, and forced to make the most tradeoffs in terms of any additional (non-essential) activities. Jason Furman's analysis of the benefits consumers realize from Walmart's participation in the retail sector highlights this point nicely.¹³³ He notes that total savings from Walmart are enormous—estimated to be over \$260 billion in 2004, or over \$2,300 per household.¹³⁴ As he documents, lower income households in fact benefit disproportionately from these lower prices. He takes for example groceries—which comprise an increasing percentage of household budget as income decreases—to demonstrate this disparate benefit.¹³⁵

Table 2

Table 1. Benefits for Food Consumers					
	Income (pre-tax)	Food At Home	Food Share of Income	Total Welfare Increase	Welfare Increase (% of Income)
Bottom Quintile	\$8,201	\$2,119	25.8%	\$530	6.5%
Second Quintile	\$21,478	\$2,713	12.6%	\$678	3.2%
Third Quintile	\$37,542	\$3,114	8.3%	\$779	2.1%
Fourth Quintile	\$61,132	\$3,726	6.1%	\$932	1.5%
Top Quintile	\$127,146	\$4,503	3.5%	\$1,126	0.9%
All	\$51,128	\$3,129	6.1%	\$782	1.5%

Source: Data from Bureau of Labor Statistics, June 2005, *Consumer Expenditures in 2003* and author's calculations.

His results indicate that the lowest income group's gain was more than seven times that of the highest income group's. In other words, the competitive benefits

¹³³ Jason Furman, *Wal-Mart: A Progressive Success Story*, MACKINAC CTR. FOR PUB. POL'Y 1 (Nov. 28, 2005), <https://www.mackinac.org/archives/2006/walmart.pdf>; see also Jerry Hausman and Ephraim Leibtag, *Consumer Benefits from Increased Competition in Shopping Outlets: Measuring the Effect of Wal-Mart* (NBER Working Paper Series No. 11809, 2005), <https://www.nber.org/papers/w11809.pdf>.

¹³⁴ Furman, *supra* note 133, at 1.

¹³⁵ *Id.* at 3.

Walmart creates flow disproportionately to lower income individuals and households. This would seem to be consistent with various social concerns, such as income inequality and progressive distributive effects.¹³⁶ These disproportionate benefits allow wealth-strapped consumers to purchase more with less—meaning the required hours worked to purchase food diminishes, and their purchasing power (in terms of money and time) increases.¹³⁷

The relevant question, then, is whether a socio-political antitrust regime could improve upon the consumer welfare standard.

C. Identifying the Best Path Forward

This discussion highlights the significant questions that remain unanswered in the calls for retrograde antitrust today, as well as the real tradeoffs that would have to be made in any such regime change. As Herbert Hovenkamp recently explained: “To date the strongest and most central claim of the neo-Brandeis movement remains untested; that is its assumption that individuals in our society would really be better off in a world characterized by higher prices but smaller firms.”¹³⁸ This is, indeed, a foundational question yet unanswered. And it presumes the capacity of antitrust to effectively and

¹³⁶ Khan & Vaheesan, *supra* note 3, at 294 (arguing for “restoring antitrust” to achieve “progressive distributive effects”).

¹³⁷ There is also a strain of arguments that increasing antitrust enforcement might help to reduce inequality by reducing the rents deriving from unlawful monopoly that flow to shareholders, who are disproportionately at the higher end of the wealth and income distributions. These arguments tend to call for increasing antitrust enforcement and/or for altering the goals of antitrust in order to increase enforcement. For the reasons discussed, these arguments have their shortcomings, including lack of a clear correlation to antitrust enforcement and the problems inherent to broadening the goals of antitrust law. They also tend to rely on assumptions and effects arising further down in the causal chain. Whereas if prices decrease, lower wealth individuals benefit disproportionately; if a firm earns fewer monopoly rents, that may or may not translate to smaller shareholder payouts, those shareholders may or may not be able to replace any lost payouts with other sources of wealth, etc. *See, e.g.,* Jonathan Klick & Joshua D. Wright, *Antitrust Enforcement and Inequality*, in *WHO WINS, WHO LOSES: INEQUALITY AND THE DISTRIBUTION OF REGULATORY IMPACTS* (Cary Coglianese ed., Brookings Institution Press) (forthcoming).

¹³⁸ Hovenkamp, *supra* note 33, at 103.

coherently protect small businesses—a task at which it proved inept for decades.

As explained, lower income or lower wealth citizens are the most susceptible to the harms from higher prices, reduced output, and other competitive harms. The neo-Brandeisian world would, by necessity, reintroduce these very harms because it would subordinate consumer welfare to other values. The progressive distributive effects being what they are, such a regime would tend to inflict the most economic harm on those who are most vulnerable. For instance, this approach would erase many (if not all) of the billions of dollars per year in benefit that consumers realize from the ability to shop at Walmart alone—benefits that disproportionately benefit lower wealth households.¹³⁹ To justify such costs, we would want to be very sure that any purported benefits would be realized. But whether such an antitrust regime would offer these benefits remains very much in doubt.¹⁴⁰ Neither empirical evidence nor practical experience suggests they are likely to be achieved.

The neo-Brandeis movement focuses, rightly, on preventing political institutions from being coopted by special interests. The best way to prevent political influence and regulatory capture, however, is to establish clear rules and standards that allow the public to hold decision-makers accountable for their actions. Introducing vague or multi-factored standards, such as a “citizen interest standard,” would reintroduce the very conditions that contributed to the corruption of the prerevolutionary antitrust regime.

Notably, Neo-Brandeisians have yet to settle on a standard. Proponents have advocated various retrograde approaches, from bright line or per se rules, echoing those established in the 1968 Horizontal Merger Guidelines; to a full embrace of the big-is-bad era; to public or citizen interest, trading partner welfare, or similar standards that would

¹³⁹ See *supra* Section III.B.

¹⁴⁰ Hovenkamp, *supra* note 33, at 118 (“While the word ‘Luddite’ is probably too strong, the neo-Brandeisians exhibit strong ambivalence about innovation, particularly when the firms who engage in it become large. They show similar antipathies toward cost savings.”).

expressly incorporate distributional concerns. These myriad standards underscore the complications inherent to attempting to inject socio-political goals into antitrust analysis—complications the courts understand well, from decades of just such experience.

Finally, as developed, antitrust law under the consumer welfare standard already does indirectly promote numerous social goals. For these (and other) reasons, Makan Delrahim, the Assistant Attorney General in charge of the Antitrust Division of the Department of Justice, concluded that “enforcement actions purportedly aimed at supporting our democracy carry too great a risk of inadvertently undermining” these fundamental values.¹⁴¹ He further reiterated that antitrust under the consumer welfare standard promotes our democratic values, by facilitating free markets and competition, the benefits of which inure to all Americans—echoing the Supreme Court’s repeated pronouncements. Thus, the relevant comparison on this margin is really whether any of the neo-Brandeisian’s new standards could promote these goals more effectively.

CONCLUSION

Planets in retrograde appear to be moving backwards in their orbits. Of course, they do not actually reverse course. That appearance is merely an illusion. But a casual or uninformed observer might be forgiven for believing they had, in fact, changed their trajectories.

So, too, with the casual observer of the current debate over the suitability of the

¹⁴¹ Makan Delrahim, Assistant Att’y Gen., Antitrust Div., U.S. Dep’t of Justice, *Stand by Me: The Consumer Welfare Standard and the First Amendment*, Remarks at the Open Markets Institute Event: Antitrust and the News (June 12, 2018), <https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-remarks-open-markets-institute-event>. AAG Delrahim also echoed Justice Brandeis’s prescient warning, that “[e]xperience should teach us to be most on our guard to protect liberty when the government’s purposes are beneficent. . . . The greatest dangers to liberty lurk in insidious encroachment by men of zeal, well-meaning but without understanding.” *Id.* (quoting *Olmstead v. United States*, 277 U.S. 438, 479 (1928) (Brandeis, J., dissenting)).

consumer welfare standard. Proponents of the prerevolutionary antitrust approach are loudly vocalizing their discontent and gaining support, suggesting that antitrust is (at least) in retrograde. But their preferred path is marked with pitfalls, shortcomings, and harms. No clear means for avoiding these hazards has yet been proffered, let alone proven.

Appendix A

DOJ Cases cited in Table 1

- US v. Anheuser-Busch InBev SA/NV, Compl. ¶¶ 5, 24, 25, 27
<https://www.justice.gov/atr/case-document/file/1322386/download>.
- US v. Geisinger Health and Evangelical Community Hospital, Compl. ¶¶ 59-63, 75,
<https://www.justice.gov/atr/case-document/file/1313051/download>.
- US v. Odyssey Investment Partners Fund V, LP, Compl. ¶ 31
<https://www.justice.gov/atr/case-document/file/1280201/download>.
- US v. Dairy Farmers of America and Dean Foods Co., Compl. ¶ 33
<https://www.justice.gov/atr/case-document/file/1279226/download>.
- US v. United Technologies Corp. and Raytheon Co., Compl. ¶ 65
<https://www.justice.gov/atr/case-document/file/1262896/download>.
- US v. Olympus Growth Fund VI, LP, Compl. ¶ 37 <https://www.justice.gov/atr/case-document/file/1250316/download>.
- US v. ZF Friedrichshafen AG and WABCO Holdings, Inc., Compl. ¶ 29
<https://www.justice.gov/atr/case-document/file/1238191/download>.
- US v. Symrise AG, Compl. ¶ 24 <https://www.justice.gov/atr/case-document/file/1214021/download>.
- United States v. Novelis, Inc. and Aleris Corp., No. 1:19-cv-02033 (N.D. Ohio filed Sept. 4, 2019), Compl. ¶ 51 <https://www.justice.gov/atr/case-document/file/1199461/download>.
- United States v. Sabre Corp., Sabre GLBL Inc., Farelogix, Inc., and Sandler Capital Partners V, L.P., No. 1:19-cv01548 (D. Del. Aug. 20, 2019), Compl. ¶ 63
<https://www.justice.gov/atr/case-document/file/1196836/download>.
 - See also Fourth Amended Compl. ¶30, <https://www.justice.gov/atr/case-document/file/1218851/download>.
- United States et al v. Nexstar Media Group, Inc. and Tribune Media Co., No. 1:19-cv-02295 (D.D.C. filed July 31, 2019), Compl. ¶ 60 <https://www.justice.gov/atr/case-document/file/1192131/download>.
- United States et al v. Deutsche Telekom AG, T-Mobile US, Inc., Softbank Group Corp. and Sprint Corp., NO. 1:19-cv-02232 (D.D.C. July 26, 2019), Compl. ¶ 30
<https://www.justice.gov/atr/case-document/file/1187751/download>.
- United States et al v. Deutsche Telekom AG, T-Mobile US, Inc., Softbank Group Corp., and Sprint Corp., NO. 1:19-cv-02232 (D.D.C. July 26, 2019), Compl. ¶ 30
<https://www.justice.gov/atr/case-document/file/1187751/download>.
- United States v. Harris Corp. and L3 Technologies, Inc., No. 1:19-cv-01809 (D.D.C. filed June 20, 2019), Compl. ¶ 24 <https://www.justice.gov/atr/case-document/file/1175956/download>.
- United States v. Quad/Graphics, Inc., QLC Merger Sub, Inc. and LSC Communications, Inc., No. 1:19-cv-04153 (N.D. Ill. filed June 20, 2019), Compl. ¶ 39
<https://www.justice.gov/atr/case-document/file/1176426/download>.

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- United States v. Amcor Limited and Bemis Co., Inc., No. 1:19-cv-01592 (D.D.C. filed May 30, 2019), Compl. ¶ 33-35, 40, <https://www.justice.gov/atr/case-document/file/1167276/download>.
- United States v. Thales S.A. and Gemalto N.V., No. 1:19-cv-00569 (D.D.C. filed Feb. 28, 2019), Compl. ¶¶ 24-25 <https://www.justice.gov/atr/case-document/file/1139041/download>.
- United States v. Learfield Communications, LLC, Compl. ¶ 23 <https://www.justice.gov/atr/case-document/file/1132601/download>.

Appendix B

Table 3
FTC Merger Cases: Categories of Effects Alleged
Filed January 2019 through August 2020

Case name	Filing Date	Price	Quality	Innovation	Service	Other contractual terms	Consumer Choice
Elanco Animal Health/Bayer	7/14/20	X					
Eldorado/Caesars	6/25/20	X	X				
Tri Star Energy/Hollingsworth Oil	6/23/20	--	--	--	--	--	--
AbbVie/Allergan	5/5/20	X		X			
Ossur Hf/College Park Industries	4/6/20	--	--	--	--	--	--
Altria/Juul	4/1/20	X		X		X	
Danaher/GE	3/19/20	X	X	X	X		
Thomas Jefferson University	2/27/20	X	X		X		
Peabody Energy/Arch Coal	2/25/20	X					
FXI Holdings/Innocor	2/21/20	--	--	--	--	--	--
Angaten/Compassion First	2/14/20	X	X				
Edgewell Personal Care/ Harry's	2/2/20	X				X	X
Axon Enterprise / Safariland	1/3/20	X	X	X	X		
NEXUS/Generation Pipeline	9/13/19	--	--	--	--	--	--
US Foods/SGA	9/11/19	X	X				
Fidelity/Stewart	9/5/19	X	X		X		
Boston Scientific/BTG	8/6/19	X	X	X			
Evonik/PeroxyChem	8/2/19	X					
Quaker	7/23/19	--	--	--	--	--	--

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Chemical/AMAS Holdings							
UnitedHealth/DaVita	6/19/19	X	X		X		X
Fresenius Medical Care AG/NxStage Medical, Inc.	2/19/19	X	X	X			
Staples/Essendant	1/25/19	X					

Data pulled from FY2019 HSR Report and searches on the FTC’s website. Categories are marked with an “X” only if the complaint specifically identify these effects in the “Effects of the Acquisition” paragraphs. Entries marked “—” did not allege specific categories of effects. Note, when the FTC simultaneously files complaints and settlements, it is less likely to file a detailed complaint incorporating specific categories of alleged harm.

Cases cited:

- In the Matter of Elanco Animal Health, Inc., FTC Dkt. No. C-4725 (compl. filed July 14, 2020), <https://www.ftc.gov/enforcement/cases-proceedings/191-0198/elanco-animal-health-bayer>.
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https://www.ftc.gov/system/files/documents/cases/06_dte-enbridge_complaint_redacted.pdf).
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<https://www.ftc.gov/enforcement/cases-proceedings/181-0127/fidelity-national-financialstewart-information-services>. Compl. ¶¶ 65-78,
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- In the Matter of UnitedHealth Group Inc., FTC Dkt. C-4677 (final order issued on August 12, 2019), <https://www.ftc.gov/enforcement/cases-proceedings/181-0057/unitedhealth-groupdavita-matter>. Compl. ¶¶ 17-20 https://www.ftc.gov/system/files/documents/cases/181_0057_c4677_united_davita_complaint_6-19-19.pdf.
- In the Matter of Fresenius Medical Care AG & Co. KGaA and NxStage Medical, Inc., FTC Dkt. C-4671 (filed on Feb. 19, 2019), <https://www.ftc.gov/enforcement/cases-proceedings/171-0227/fresenius-medical-care-nxstage-medical-matter>. Compl. ¶ 11, https://www.ftc.gov/system/files/documents/cases/1710227_fresenius-nxstage_complaint_2-19-19_0.pdf.
- In the Matter of Sycamore Partners II, L.P., Staples, Inc. and Essendant Inc., FTC Dkt. C-4667 (final order issued on January 25, 2019), <https://www.ftc.gov/enforcement/cases-proceedings/181-0180/sycamore-partners-ii-lp-staples-inc-essendant-inc-matter>. Compl. ¶ 11, https://www.ftc.gov/system/files/documents/cases/1810180_staples_essendant_complaint_1-28-19.pdf.

Network Effects in Action

Christopher S. Yoo*

INTRODUCTION

Network effects, which arise when the value of a product or service increases with the number of people using it, represent one of the most influential concepts in industrial organization over the past half century. Although the concept was invoked during the early twentieth century,¹ serious academic study of the phenomenon did not begin until publication of Jeffrey Rohlfs's seminal paper in 1974.² Starting in the mid-1980s, a vibrant theoretical literature emerged exploring how network effects can affect competition.³ The result was a rich and nuanced body of economic theory.⁴

Over time, network effects began to influence antitrust enforcement policy, forming the basis for the U.S. government's cases against Microsoft⁵ and playing a prominent role in early antitrust cases against social networking sites.⁶ Although recent

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¹ See, e.g., AM. TEL. & TEL. CO., ANNUAL REPORT 21–22 (1908).

² See generally Jeffrey Rohlfs, *A Theory of Interdependent Demand for a Communications Service*, 5 BELL J. ECON. & MGMT. SCI. 16 (1974).

³ See, e.g., W. Brian Arthur, *Competing Technologies, Increasing Returns and Lock-in by Historical Events*, 99 ECON. J. 116 (1989); Paul A. David, *Clio and the Economics of QWERTY*, 75 AM. ECON. REV. (PAPERS & PROC.) 332 (1985); Joseph Farrell & Garth Saloner, *Standardization, Compatibility, and Innovation*, 16 RAND J. ECON. 70 (1985); Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424 (1985).

⁴ For recent surveys, see Daniel Birke, *The Economics of Networks: A Survey of the Empirical Literature*, 23 J. ECON. SURVEYS 762 (2009); Joseph Farrell & Paul Klemperer, *Coordination and Lock-In: Competition with Switching Costs and Network Effects*, in 3 HANDBOOK OF INDUSTRIAL ORGANIZATION 1967, 1971, 1974–76, 2055 (Mark Armstrong & Robert Porter eds., 2007); Oz Shy, *A Short Survey of Network Economics*, 38 REV. INDUS. ORG. 119 (2011).

⁵ *United States v. Microsoft Corp.*, 253 F.3d 34, 49–50, 55–56 (D.C. Cir. 2001); *United States v. Microsoft Corp.*, 147 F.3d 935, 939, 953 (D.C. Cir. 1998).

⁶ See *LiveUniverse, Inc. v. MySpace, Inc.*, No. CV 06-6994 AHM (RZx), 2007 WL 6865852, at *8–10 (C.D. Cal. June 4, 2007), *aff'd*, 304 Fed. Appx. 554 (9th Cir. 2008).

high-profile reports on digital platforms have recognized the ambiguity of the impact of network effects, they have generally placed greater emphasis on their tendency to create winner-take-all markets that can provide first movers with a source of market power.⁷

Even the most casual examination of the history of digital industries reveals that the dynamics must be more complex. Google was founded in 1998, long after Altavista and Yahoo! had established themselves as market leaders. Facebook successfully overcame the early advantages enjoyed by Myspace. The market for travel sites consists of numerous players all vigorously competing with one another without collapsing into monopoly. Uber's first-mover advantage was unable to prevent the emergence of Lyft as a serious competitor.

These examples underscore the inappropriateness of simply equating the presence of network effects with market concentration or entry barriers. Instead, they illustrate the importance of understanding the full range of the dynamics of markets subject to network effects. Even when potential theoretical harms have been identified, anticompetitive effects cannot simply be asserted. Instead, proper application of competition law principles requires that they be validated and quantified empirically.

This Chapter fills this gap by laying out the dynamics underlying network effects and how they have been applied in antitrust and regulatory proceedings. It begins by examining and exploring the theoretical and empirical limits of the possible bases of

⁷ See AUSTRALIAN COMPETITION & CONSUMER COMMISSION, DIGITAL PLATFORMS INQUIRY: FINAL REPORT 66–68 (2019), *available at* <https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>; DIGITAL COMPETITION EXPERT PANEL, UNLOCKING DIGITAL COMPETITION: REPORT OF THE DIGITAL COMPETITION EXPERT PANEL 35 (2019), *available at* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf; JACQUES CRÉMER, YVES-ALEXANDRE DE MONTJOYE, & HEIKE SCHWEITZER, COMPETITION POLICY IN THE DIGITAL ERA: FINAL REPORT 20–24 (2019), *available at* <https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf>; STIGLER CTR. FOR THE STUDY OF THE ECON. AND THE STATE, STIGLER COMMITTEE ON DIGITAL PLATFORMS 38–39 (2019), *available at* <https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf>.

network effects, paying particular attention to the most commonly cited framework known as Metcalfe's Law. It continues by exploring the concept of network externalities, defined as the positive external consumption benefits that the decision to join a network creates for the other members of the network,⁸ which is more ambiguous than commonly realized. It then reviews the structural factors needed for models based on network effects to have anticompetitive effects and identifies other factors that can dissipate those effects. Finally, it identifies alternative institutional forms that can eliminate or mitigate the impact of network effects.

I. THEORETICAL SOURCES OF NETWORK EFFECTS

Network effects exist when the primary determinant of a network's value is the number of other users connected to the network.⁹ The more people that an individual subscriber can reach through the network, the more valuable the network becomes even when the nature of the service and the price paid for it remains the same.¹⁰ The classic example is the telephone system, since the value of a telephone network is largely determined by the number of people with whom one can communicate through that network.¹¹

A critical question is how quickly value grows with network size. Rapid increases would make the demand-side economies of scale associated with network effects extremely influential. More modest increases would render the effects of network size

⁸ Michael L. Katz & Carl Shapiro, *Technology Adoption in the Presence of Network Externalities*, 94 J. POL. ECON. 822, 823 (1986).

⁹ This discussion draws on work previously published as Christopher S. Yoo, *Moore's Law, Metcalfe's Law, and Optimal Interoperability*, 14 COLO. TECH. L.J. 87, 91-94, 96-102 (2015).

¹⁰ Daniel F. Spulber & Christopher S. Yoo, *Access to Networks: Economic and Constitutional Considerations*, 88 CORNELL L. REV. 885, 922 (2003).

¹¹ See, e.g., Neil Gandal, *Compatibility, Standardization, and Network Effects: Some Policy Implications*, 18 OXFORD REV. ECON. POL. 80, 80-81 (2002); Katz & Shapiro, *supra* note 8, at 823 (1986); S.J. Liebowitz & Stephen E. Margolis, *Network Externalities: An Uncommon Tragedy*, 8 J. ECON. PERSP. 133, 139-40 (1994).

less consequential. In addition, the law of diminishing marginal returns dictates that such increases in value are unlikely to persist indefinitely. A proper appreciation of network effects thus depends on understanding their theoretical foundations, as well as their theoretical limits, and the emerging empirical literature attempting to validate which of the various models best describes actual network behavior.

A. Metcalfe's Law and Other Theories of the Relationship Between Network Size and Value

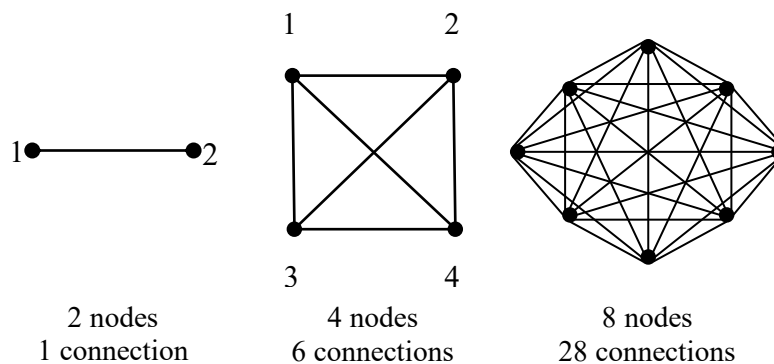
One of the most common ways to model the rapid increase in value associated with network size is known as *Metcalfe's Law*, first articulated in the early 1980s by Bob Metcalfe, the inventor of the Ethernet,¹² and later named in his honor by George Gilder.¹³ Metcalfe's Law is based on the mathematical concept that the number of potential pairwise connections increases quadratically with the number of nodes. Stated more generally, if the number of nodes equals n , the number of potential connections equals $(n^2 - n)/2$. The relationship is illustrated by the examples portrayed in Figure 1. In each case, doubling the number of nodes more than quadruples the number of potential connections.¹⁴

¹² Bob Metcalfe, *Metcalfe's Law After 40 Years of Ethernet*, 46 COMPUTER 26, 26-28 (2013).

¹³ George Gilder, *Metcalfe's Law and Legacy*, FORBES ASAP, Sept. 13, 1993, at 158.

¹⁴ Bob Metcalfe, *Metcalfe's Law: A Network Becomes More Valuable as It Reaches More Users*, INFOWORLD, Oct. 2, 1995, at 53.

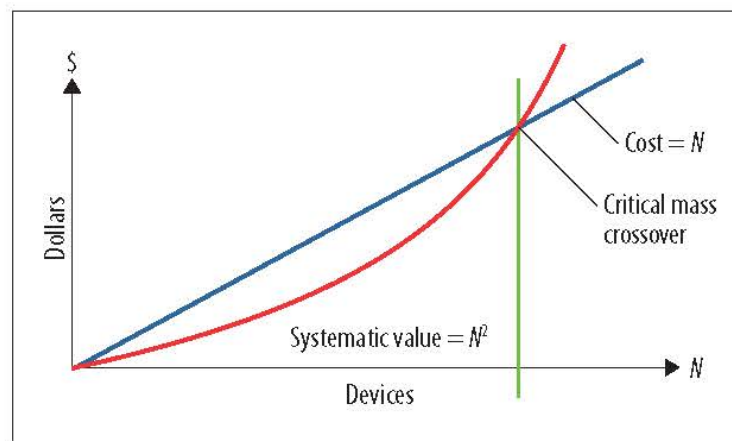
Figure 1: The Relationship Between the Number of Nodes and the Number of Potential Connections



Source: Yoo, *supra* note 9, at 92 fig.1.

If each potential connection increases the value of the network by an equal amount, increases in the number of nodes lead to a quadratic increase in network value. At the same time, the cost of adding nodes is likely to increase linearly with the number of nodes. The relationship between the two effects is depicted in Figure 2, which Metcalfe used during the early 1980s to emphasize the importance of networks quickly reaching critical mass.

Figure 2: Metcalfe's Law and the Systemic Value of the Network



Source: Bob Metcalfe, *Metcalfe's Law After 40 Years of Ethernet*, COMPUTER, Dec. 2013, at 26, 28 fig. 2.

Metcalfe's Law provides a demand-side explanation for the success of the Ethernet, Internet service providers (ISPs), and Internet-based companies such as

America Online,¹⁵ although some have suggested that the recent experiences of eBay and Facebook raise questions about the relationship.¹⁶ By valuing all internal connections, it is best suited to two-way communications networks.

Quadratic growth is not the only way to model the way the value of a network may increase with size. Some are more modest, such as *Sarnoff's Law*, which asserts that the value of a network increases linearly with network size, as befits advertising networks. Another commonly posited relationship, known as *Reed's Law*, is more aggressive, positing exponential growth in value at the rate of 2^n .¹⁷ A more recent candidate known as *Zipf's Law* falls somewhere between Metcalfe and Sarnoff, presuming that if some large collection of elements is ordered by value, the second element in the collection will have about half the value of the first one, the third one will have about one-third the value of the first one, and so forth, with the value of the n th item in the collection being $1/n$ of the first item. The result is a model that projects network value to increase logarithmically, specifically $n \log(n)$.¹⁸ The Briscoe, Odlyzko, and Tilley article proposing Zipf's Law as an alternative spawned a vigorous debate over the merits of Metcalfe's Law.¹⁹

All of these models lead to value curves that increase monotonically with network

¹⁵ Metcalfe, *supra* note 12, at 27-28; Paul Festa, *Andreessen Preaches AOL Religion*, CNET (Jan. 2, 2002, 4:43 PM), <http://www.cnet.com/news/andreessen-preaches-aol-religion/>; Gilder, *supra* note 13.

¹⁶ Anthony Wing Kosner, *Facebook Values Itself Based on Metcalfe's Law, But the Market Is Using Zipf's*, FORBES TECH (May 31, 2012, 1:14 PM), <http://www.forbes.com/sites/anthonykosner/2012/05/31/facebook-values-itself-based-on-metcalfes-law-but-the-market-is-using-zipfs/>; Om Malik, *Metcalfe's Law, Meet Market Reality*, GIGAOM (Jan. 21, 2015, 3:14 AM), <https://gigaom.com/2005/01/21/metcalfes-law-meet-market-reality/>.

¹⁷ David P. Reed, *The Law of the Pack*, HARV. BUS. REV., Feb. 2001, at 23.

¹⁸ Bob Briscoe, Andrew Odlyzko, & Benjamin Tilly, *Metcalfe's Law Is Wrong*, IEEE SPECTRUM, July 2006, at 34, 38.

¹⁹ See *Metcalfe's Law: Right? Wrong?*, IEEE SPECTRUM, Nov. 2006, at 10, <http://spectrum.ieee.org/computing/networks/metcalfes-law-right-wrong/>; Simeon Simeonov, *Metcalfe's Law: More Misunderstood than Wrong?*, HIGH CONTRAST (July 26, 2006), <http://blog.simeonov.com/2006/07/26/metcalfes-law-more-misunderstood-than-wrong/>.

size. That need not be the case, however. Some patterns in the growth of network value (such as 2^{-n}) converge asymptotically to a limited value rather than grow continuously.²⁰ Models assume that network value follows a logistic curve generating S-shaped growth in value.²¹ The results thus depend heavily on the assumptions.

It is unlikely that any one functional form applies to all businesses subject to network effects. The idea that the same returns to scale would apply to search engines, social media, e-commerce, software, streaming media, and companies based on the sharing economy seems impossible.

B. The Theoretical Limits of Metcalfe's Law

The choice among these models plays a critical role in determining the significance of the role played by network effects. One key factor is the fit between a model's assumptions and the business model under consideration. For example, the growth in value envisaged by Metcalfe's Law results from the increase in internal connections among each individual node. This seems appropriate for a two-way communications network such as a telephone network, in which every individual user may wish to contact each other. The value of advertising networks, in contrast, derives from the total number of potential customers that the advertiser can reach through the network and places no value on those potential customers' ability to connect with each other. This implies a value curve that grows linearly as predicted by Sarnoff's Law rather than the quadratic growth in value predicted by Metcalfe's Law.²²

Moreover, the possibility of unending quadratic increases in network value seems too good to be true, and for good reason. Indeed, Metcalfe himself warned that this

²⁰ Joe Weinman, *Is Metcalfe's Law Way Too Optimistic?*, BUS. COMM. REV., Aug. 2007, at 18, 19-20.

²¹ See G.M. Peter Swann, *The Functional Form of Network Effects*, 14 INFO. ECON. & POL'Y 417, 423-25 (2002).

²² Christopher S. Yoo, *Free or Fee?: The Economics of Advertising Support vs. Direct Payments for Media Content*, in MEDIA MARKETS AND COMPETITION LAW: MULTINATIONAL PERSPECTIVES 59, __ (Antonio Bavasso, David S. Evans, & Douglas H. Ginsburg eds., 2019).

relationship was unlikely to hold beyond a certain point.²³ Simply put, models based on inexhaustible geometric progressions are the hallmark of classic pyramid schemes that are mathematically unsustainable. Proper implementation of network effects for competition policy thus depends on an appreciation of the role of diminishing marginal returns resulting from heterogeneity in the value of different connections and potential diseconomies of scale.

1. Differences in the Value of Particular Connections

While it is undeniably true that the number of potential connections increases quadratically with the number of connections, that is not enough to establish the quadratic increase in value implied by Metcalfe's Law. One must also assume that the additional connections each provide the same amount of additional value.

The literature on Metcalfe's Law questions the validity of that assumption. For example, Jeffrey Rohlfs points out that if the first users are the ones who place the highest value on the network, one would expect the addition of later users to provide less value.²⁴ Failure to take this into account is "likely to substantially overstate the value of large networks."²⁵ In addition, "small user sets can embody substantial value."²⁶ Rohlfs then offers a mathematical formulation that can accommodate a wide range of assumptions about consumer heterogeneity and leads to market concentration only in some cases.²⁷ Briscoe, Odlyzko, and Tilly's model based on Zipf's Law provides a specific example of

²³ Metcalfe, *supra* note 14, at 53 ("OK, Metcalfe's Law might overstate the value of a network for a very large N. A user equipped to communicate with 50 million other users might not have all that much to talk about with each of them. So maybe the growth of systemic network value rolls off after some N."); Andrew McAfee & François-Xavier Oliveau, *Confronting the Limits of Networks*, SLOAN MGMT. REV., July 2002, at 86, <http://sloanreview.mit.edu/article/confronting-the-limits-of-networks/> (quoting Metcalfe as recognizing in 1998, "The law may be optimistic as the number of people on a network gets very large.").

²⁴ JEFFREY H. ROHLFS, BANDWAGON EFFECTS IN HIGH TECHNOLOGY INDUSTRIES 29 (2001).

²⁵ *Id.* at 55, 195.

²⁶ *Id.* at 85.

²⁷ *Id.* at 211-16.

this dynamic.²⁸ Network participants who place a particularly high value on a small number of users can realize most of that value simply by clustering on a single network regardless of its size.²⁹

If so, end users may not value the total number of potential connections in the abstract as much as they value particular connections. For example, most people's Internet usage is disproportionately concentrated in a handful of locations, including their email servers, file repositories at work, banks and other financial institutions, utilities for bill payment, and preferred sources of content.³⁰ These users place a higher value on connectivity to the sites they visit the most than their ability to connect to a large number of other locations.³¹

Differences in the value of particular connections can make larger networks easier to displace. A new competitor need not achieve the same scale as the incumbent in order to succeed. Instead, it can successfully enter by targeting a smaller cluster of users who value each other's participation particularly highly.³² For example, customers of ride sharing services care less about the size of the entire network and instead place a high value on a subset of network participants, specifically those located in the same city.³³ Similarly, OpenTable succeeded only after it targeted achieving a critical mass of restaurants in four cities.³⁴ These examples show how a new entrant can succeed

²⁸ Briscoe et al., *supra* note 18, at 37.

²⁹ McAfee & Oliveau, *supra* note 23, at 86.

³⁰ Christopher S. Yoo, *Wickard for the Internet?: Network Neutrality After Verizon v. FCC*, 66 FED. COMM. L.J. 415, 439 (2014).

³¹ *Id.*

³² Feng Zhu et al., *Network Interconnectivity and Entry into Platform Markets* 4–5 (Harv. Bus. Sch. Working Paper 19-062, 2019), https://www.hbs.edu/faculty/Publication%20Files/19-062_ca94ef8a-6589-4210-a598-90900bd772e5.pdf.

³³ Feng Zhu & Marco Iansiti, *Why Some Platforms Thrive and Others Don't*, HARV. BUS. REV., Jan.–Feb. 2019, at 118, 121.

³⁴ DAVID S. EVANS & RICHARD SCHMALENSEE, *MATCHMAKERS: THE NEW ECONOMICS OF MULTISIDED PLATFORMS* 13-14 (2016).

notwithstanding network effects by achieving critical mass with clusters of users who value each other particularly highly.³⁵

Perhaps the most extreme version of variations in the value of particular network connections is the phenomenon known as two-sided markets.³⁶ Two-sided markets involve a particular type of network effects in which the network consists of two different groups of participants and the value to one group is determined not by the size of the entire network, but rather by the size of the other group. Credit card networks represent a classic example of a two-sided market. They consist of two types of participants: merchants and cardholders. The value to merchants is not determined by total network size, but rather by the number of cardholders. Conversely, the networks' value to cardholders is determined by the number of merchants participating in it. Admittedly, cardholders benefit indirectly from having large numbers of other cardholders in that they encourage the participation of a greater number of merchants. But they would be just as happy if the network could attract a large number of merchants in ways that did not depend on having a large number of cardholders.

Pricing in two-sided markets depends on a wide variety of factors.³⁷ Perhaps most striking is what Jean-Charles Rochet and Jean Tirole call the “seesaw principle,” in which any factor that tends to increase the profitability of one side of a two-sided market tends to lower prices on the other side, because the increased margin on the first side increases

³⁵ David S. Evans & Richard Schmalensee, *Debunking the “Network Effects” Bogeyman*, REGULATION, Winter 2017-2018, at 36, 38; Zhu & Iansiti, *supra* note 33, at 122.

³⁶ This discussion draws on work previously published as Christopher S. Yoo, *Network Neutrality, Consumers, and Innovation*, 2008 U. CHI. LEGAL F. 179, 222–27.

³⁷ David S. Evans & Richard Schmalensee, *The Industrial Organization of Markets with Two-Sided Platforms*, COMPETITION POL'Y INT'L, Spring 2007, at 11, <https://www.law.berkeley.edu/wp-content/uploads/2015/04/Evans-Schmalensee-The-Industrial-Organization-of-Markets-with-Two-Sided-Platforms-2007.pdf>; Jean-Charles Rochet & Jean Tirole, *Two-Sided Markets: A Progress Report*, 37 RAND J. ECON. 645, 658–61 (2006).

the benefits of increasing participation on the second side.³⁸ Consistent with this insight, a survey of real-world examples reveals that prices on different sides of two-sided markets tend to be asymmetric, with users on one side often paying little or nothing.³⁹

Asymmetry in the value of particular connections can dissipate the impact of network effects and allow a smaller network to survive despite disadvantages in scale. The U.S. Supreme Court's recent *Amex* decision⁴⁰ provides a useful example: American Express was able to capture more than one quarter of the market for credit card transactions even though it had enrolled 88% fewer cardholders and roughly 30% fewer merchants than had Visa and MasterCard. Rather than compete for the entire market, American Express was able to compensate for its smaller scale by providing higher value services designed to appeal to a subset of the overall population, specifically higher value cardholders.⁴¹

These examples underscore how differences in the value of particular connections can allow firms to enter and survive in markets with network effects notwithstanding their smaller network size. In so doing, they illustrate that the mere presence of network effects does not necessarily give the largest firm a decisive competitive advantage. The clear implication is that any anticompetitive effects stemming from network effects must be based on evidence in particular cases and not simply asserted.

2. Other Ways Network Size Affects Value

The approach to theorizing about network effects discussed above implicitly presumes that network value is strictly increasing in the number of connections and differ only regarding the rate of increase. Any such model assumes away the existence of factors

³⁸ *Id.* at 659.

³⁹ Jean-Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets*, 1 J. EUR. ECON. ASS'N 990, 1013-17 (2003).

⁴⁰ *Ohio v. Am. Express Co.*, 138 S. Ct. 2274 (2018).

⁴¹ *Id.* at 2282, 2288.

that can create diseconomies of scale.

The literature has pointed out the possibility of countervailing considerations. For example, several phenomena can cause network value to decrease with scale, including saturation, cacophony, clustering, and search costs.⁴² Other relevant factors may include limits on time and capacity,⁴³ as well as frictional effects and trust costs.⁴⁴

Presuming inexhaustible returns to scale is arguably both unrealistic and risks making market failure more an artifact of the model than reality. Metcalfe himself emphasizes that his point was to underscore the importance of establishing a critical mass, not to prove inexhaustible returns to network size, and that Zipf's Law also results in inexhaustible returns to scale.⁴⁵ The assumptions that all connections have equal value and diseconomies of scale do not exist have the effect of positing inexhaustible benefits to network size that make the bias towards concentration drive the results of these models more than any aspect of actual markets.⁴⁶

C. The Empirical Literature

These critiques underscore the point that simply assuming that all connections contribute equal value represents a potentially fundamental flaw. Empirical studies indicate that people do not value all connections equally. For example, in traditional telephone service, people tend to make frequent calls to a small group of people.⁴⁷ The

⁴² McAfee & Oliveau, *supra* note 23, at 86.

⁴³ See Weinman, *supra* note 20, at 20.

⁴⁴ Samuel M. Smith, *Meta-Platforms and Cooperative Network-of-Network Effects*, SELF RULE (Mar. 25, 2019), <https://medium.com/selfrule/meta-platforms-and-cooperative-network-of-networks-effects-6e61eb15c586>; Simeon Simeonov, *Metcalfe's Law: More Misunderstood than Wrong?*, HIGH CONTRAST (July 26, 2006), <http://blog.simeonov.com/2006/07/26/metcalfes-law-more-misunderstood-than-wrong/>.

⁴⁵ Metcalfe, *supra* note 12, at 29; Bob Metcalfe, *Metcalfe's Law Recurses Down the Long Tail of Social Networking*, VCMIKE'S BLOG (Aug. 18, 2006), <https://vc mike.wordpress.com/2006/08/18/metcalfe-social-networks/>.

⁴⁶ S.J. Liebowitz & Stephen E. Margolis, *Are Network Externalities a New Source of Market Failure?*, 17 RES. LAW & ECON. 1, 14–15 (1995).

⁴⁷ Douglas Galbi, *Telephone Social Networks*, PURPLE MOTES (Nov. 29, 2009), <http://purplemotes.net/2009/11/29/telephone-social-networks/> (empirically concluding that the average American calls only

same appears to be true for Internet-based communications, as shown by studies indicating that the average Facebook user actively exchanges personal messages with no more four people per week and six people per month.⁴⁸ Furthermore, the fact that the average Facebook user has 150 friends is consistent with Dunbar's number, which suggests that the human brain can maintain no more than 150 close relationships at any one time.⁴⁹

The debate over the relative merits of Metcalfe's and Zipf's Law has led to the first attempts to validate those principles empirically. Metcalfe himself kicked off this line of research by presenting an empirical analysis based on Facebook data finding that value growth more resembled Metcalfe's Law than Zipf's Law,⁵⁰ a result that other scholars subsequently confirmed.⁵¹ Another empirical study found that seven user capabilities followed Metcalfe's Law, while two others followed Zipf's.⁵² A subsequent analysis disputed that finding once four correcting factors are taken into account.⁵³ Still another regression analysis of the market value of thirty-eight public firms suggested that Zipf's Law performs better than Metcalfe's.⁵⁴

five people more than once in a given month).

⁴⁸ PAUL ADAMS, GROUPED: HOW SMALL GROUPS OF FRIENDS ARE THE KEY TO INFLUENCE ON THE WEB 23 (2012).

⁴⁹ R.I.M. Dunbar, *Coevolution of Neocortex Size, Group Size and Language in Humans*, 16 BEHAV. & BRAIN SCI. 681, 685-87 (1993).

⁵⁰ Metcalfe, *supra* note 12, at 30.

⁵¹ Xing-Zhou Zhang, Jing-Jie Liu, & Zhi-Wei Xu, *Tencent and Facebook Data Validate Metcalfe's Law*, 30 J. COMPUTER SCI. & TECH. 246 (2015); Leo Van Hove, *Metcalfe's Law and Network Quality: An Extension of Zhang et al.*, 31 J. COMPUTER SCI. & TECH. 117 (2016) (confirming this result when controlling for changes in network quality over time). Interestingly, the Zhang et al. study found that the costs reported in Facebook's and Tencent's financial reports grew quadratically with network size instead of linearly as Metcalfe hypothesized, although the authors simply reported this empirical finding without offering any explanation for it. Zhang et al., *supra* note 51, at 247, 248-49, 250. The surprising nature of this finding calls for further investigation.

⁵² António Madureira et al., *Empirical Validation of Metcalfe's Law: How Internet Usage Patterns Have Changed Over Time*, 25 INFO. ECON. & POL'Y 246 (2013).

⁵³ Leo Van Hove, *Testing Metcalfe's Law: Pitfalls and Possibilities*, 37 INFO. ECON. & POL'Y 67 (2016).

⁵⁴ Zhou & Marshall van Alstyne, *Platform Value and Network Effects* 14-15 (2019) (unpublished manuscript),

The nascent state of the empirical literature and the theoretical connection between the type of business model (advertising and Sarnoff's Law, pairwise communication and Metcalfe's Law, and group-forming networks and Reed's Law) underscore the dangers of simply presuming network effects lead to concentrated markets. This is consistent with modern competition policy's insistence that adverse economic effects must be demonstrated instead of simply being asserted.

II. THE THEORETICAL AMBIGUITY OF NETWORK EXTERNALITIES

Many of the concerns raised by network effects focus on the theoretical possibility of *network externalities*.⁵⁵ Proponents of this viewpoint suggest that network users' inability to appropriate all of the benefits generated by their decision to join a new network represents a positive externality that will cause them not to adopt the network even when doing so would be socially beneficial. These theorists also suggest that network externalities can turn network incompatibility into a competitive weapon. Network effects gives users forced to choose among incompatible networks strong incentives to flock to the largest network. This can create a positive feedback loop that confers competitive advantages to first movers and large players.⁵⁶

In addition, other scholars argue that network externalities can cause a related market failure known as technology lock-in, in which markets adhere to previous technology commitments notwithstanding the arrival of new, more efficient network technologies. If users cannot capture all of the benefits created by their decision to adopt a new technology, they may refrain from making a technological change even when

http://questromworld.bu.edu/platformstrategy/files/2019/07/PlatStrat2019_paper_44.pdf.

⁵⁵ This discussion draws on work previously published as Christopher S. Yoo, *Vertical Integration and Media Regulation in the New Economy*, 19 YALE J. ON REG. 171, 278–85 (2002); and Spulber & Yoo, *supra* note 10, at 921–31.

⁵⁶ Joseph Farrell & Garth Saloner, *Installed Base and Compatibility: Innovation, Product Preannouncements, and Predation*, 76 AM. ECON. REV. 940 (1986); Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSP. 93, 94–95, 105–06 (1994).

doing so would increase total welfare.⁵⁷ These interpretations suggest that network industries may be uniquely susceptible to market failures.

A close examination of the foundational literature on network effects reveals that reducing network externalities to the harms to innovation associated with these phenomena is far too simplistic. As Joseph Farrell and Garth Saloner point out in their seminal work, a consumer's decision to join a new network actually gives rise to not one, but two distinct and countervailing externalities. On the one hand, it enhances the value of the network that the user is joining. As noted earlier, the inability to capture all of the benefits created by his or her adoption decision may make the market reluctant to adopt a new technology, even when doing so is in society's best interest. This can cause markets to become locked in to obsolete technologies, a phenomenon that Farrell and Saloner refer to as "excess inertia."⁵⁸

At the same time, the adoption of a new technology also gives rise to a countervailing negative externality that may produce precisely the opposite effect. This is because any decision to adopt a new technology simultaneously lowers the value of the old network by reducing the number of people using it. Just as individuals switching networks do not internalize the increase in value they confer on participants in the new network, they also do not fully internalize the costs they impose on participants in the old network. If the negative externalities exceed the positive externalities, an individual would be willing to adopt a new network even when the net costs to society exceed the net benefits, a situation variously called "excess momentum" or "insufficient friction."⁵⁹ Indeed, under network effects, the departure of a few network participants can touch off

⁵⁷ Farrell & Saloner, *supra* note 56, at 941; Katz & Shapiro, *supra* note 56, at 100.

⁵⁸ Farrell & Saloner, *supra* note 56, at 941–42.

⁵⁹ Compare *id.* at 942 (defining "excess momentum" as "the inefficient adoption of a new technology"), with Michael L. Katz & Carl Shapiro, *Product Introduction with Network Externalities*, 40 J. INDUS. ECON. 55, 73 (1992) (defining "insufficient friction" as "a bias towards new technology").

a negative feedback cycle that accelerates a network's decline.

The early literature on network effects has largely overlooked the potential for network externalities to accelerate the decline of incumbents. The history of the digital industry is littered with former market leaders such as America Online, MSN Messenger, Friendster, Myspace, and Orkut that experienced the negative side of network effects.⁶⁰

It is thus theoretically possible that the presence of network economic effects may make markets tend to displace networks more easily or less easily than is socially optimal. The overall effect is largely determined by which of the two opposing externalities dominates the other. This means that network effects cannot simply be invoked as inevitably leading to winner-take-all markets or first-mover advantages that restrict competition. Instead, any market power enjoyed by large networks is properly regarded as an empirical question that must be shown in individual cases instead of simply being asserted.

III. THE DEPENDENCE ON STRUCTURAL FACTORS

Both the literature around Metcalfe's Law and the seminal articles on network effects illustrate that the net impact of network effects is ambiguous as a theoretical matter. In addition, a close examination of the literature reveals that any anticompetitive effects depend on the presence or absence of certain structural factors. The dependence of network effects models on these structural preconditions provide a further reason for rejecting attempts to equate the mere presence of network effects with market failure.

A. Market Structure

Because so much of the literature on network economic effects focuses on the potentially anticompetitive consequences of tipping and lock-in, it is often overlooked that the primary effect of network economic effects is to provide powerful incentives to

⁶⁰ Evans & Schmalensee, *supra* note 35, at 38.

interconnect.⁶¹ The formal economic models that show how network effects can create market failure depend on the assumption that the relevant markets are either dominated by a single firm or are highly concentrated.⁶² In the absence of such market structures, the primary impact of network economic effects is to provide powerful incentives for network owners to make their network compatible and interconnect with one another.⁶³

For example, in a market in which five equally sized players are part of a compatible network, any player that opted for incompatibility would put itself at a tremendous competitive disadvantage.⁶⁴ In the absence of market concentration, a firm cannot plausibly use its interconnection policies to harm competition.

This conclusion is reflected in the FCC's policy toward wireless-to-wireless interconnection, in which the FCC declined to intervene because in the absence of a dominant player, competition already provides wireless providers with sufficient incentives to interconnect.⁶⁵ The FCC took a similar position with respect to backbone interconnection when approving the Verizon-MCI and SBC-AT&T mergers, concluding that "[s]o long as there is 'rough equality' among backbone providers, each has an

⁶¹ This discussion draws on work previously published as Daniel F. Spulber & Christopher S. Yoo, *Mandating Access to Telecom and the Internet: The Hidden Side of Trinko*, 107 COLUM. L. REV. 1822, 1889–96 (2007).

⁶² Stanley M. Besen & Joseph Farrell, *Choosing How to Compete: Strategies and Tactics in Standardization*, 8 J. ECON. PERSP. 117, 119–29 (1994); Jacques Crémer, Patrick Rey & Jean Tirole, *Connectivity in the Commercial Internet*, 48 J. INDUS. ECON. 433, 444 (2000); Katz & Shapiro, *supra* note 11, at 839–40; Rohlfs, *supra* note 2, at 32.

⁶³ Katz & Shapiro, *supra* note 56, at 109.

⁶⁴ Gerald R. Faulhaber, *Bottlenecks and Bandwagons: Access Policy in the New Telecommunications*, in 2 HANDBOOK OF TELECOMMUNICATIONS ECONOMICS 487, 501–02 (Sumit K. Majumdar et al. eds., 2005); *see also* Nicholas Economides, *The Economics of the Internet Backbone*, in 2 HANDBOOK OF TELECOMMUNICATIONS ECONOMICS, *supra* note 64, at 373, 390 (recognizing that network economic effects give firms strong incentives to interconnect); Katz & Shapiro, *supra* note 3, at 429 (noting that "[a]s the number of firms becomes increasingly large," equilibrium in which all firms interconnect converges to perfectly competitive equilibrium); Katz & Shapiro, *supra* note 56, at 105 (noting that "[i]n markets with network effects, there is natural tendency toward de facto standardization . . .").

⁶⁵ Interconnection & Resale Obligations Pertaining to Commercial Mobile Radio Services, Fourth Report and Order, 15 FCC Rcd. 13523, 13534 ¶ 28 (2000).

incentive to peer with the others to provide universal connectivity to the Internet.”⁶⁶ It reiterated this position when approving AT&T’s acquisition of BellSouth.⁶⁷ Conversely, in approving WorldCom’s acquisition of MCI, the FCC was concerned that the merged company would have a sufficiently dominant market share to harm competition in the backbone market. Consequently, the FCC made divestiture of MCI’s backbone business a condition to its approval of the merger. At the same time, the FCC declined to mandate interconnection as a separate merger condition. The divestiture of MCI’s backbone business ensured that the market would remain sufficiently competitive to make direct regulation of interconnection unnecessary.⁶⁸

The theoretical literature does identify one scenario in which participants in a market without a dominant player may nonetheless refuse to interconnect. If the market consists of two players of equal size, they may reject compatibility and instead engage in a race for the market. Interestingly, though, this type of competition does not necessarily lead to the delays in technology adoption and supracompetitive returns associated with refusals to interconnect by dominant firms.⁶⁹ It also has the virtue of promoting the rapid buildout of new network technologies and yields substantial consumer benefits while the race is ongoing.⁷⁰

⁶⁶ Verizon Communications, Inc. and MCI, Inc. Applications for Approval of Transfer of Control, Memorandum Opinion and Order, 20 FCC Rcd. 18433, 18496 ¶ 118 (2005); SBC Communications, Inc. and AT&T Corp. Applications for Approval of Transfer of Control, Memorandum Opinion and Order, 20 FCC Rcd. 18290, 18354 ¶ 117 (2005).

⁶⁷ AT&T Inc. and BellSouth Corp. Application for Transfer of Control, Memorandum Opinion and Order, 22 FCC Rcd. 5662, 5731 ¶ 129, 5734-36 ¶¶ 140-144 (2007).

⁶⁸ Application of WorldCom, Inc. and MCI Communications Corp. for Transfer of Control of MCI Communications Corp. to WorldCom, Inc., Memorandum Opinion and Order, 13 FCC Rcd. 18025, 18108-11 ¶¶ 150-151, 18115 ¶ 155 (1998).

⁶⁹ Besen & Farrell, *supra* note 62, at 119-20, 122-24 (noting how competition between incompatible networks can accelerate as well as delay market growth, may dissipate any supracompetitive returns, and may lead to penetration pricing and long-term commitments to lower prices)

⁷⁰ Thomas W. Hazlett, *Private Monopoly and the Public Interest: An Economic Analysis of the Cable Television Franchise*, 134 U. PA. L. REV. 1335, 1351-55 (1986).

Indeed, this appears to be what was occurring between 1893 and 1907, when the Bell System and the independent telephone systems engaged in what amounted to a race for the market by investing heavily in providing service to the smaller cities, suburbs, and rural areas that the Bell System's focus on long distance commercial traffic had caused it to bypass.⁷¹ This competition emerged even though patent protection allowed the Bell System to enjoy a large initial lead.

Even if one large firm emerges, smaller groups can compensate by cooperating to form a network of equal or larger size. Customers that are reluctant to leave themselves vulnerable to being exploited by an emerging monopolist have additional reasons to adopt the network supported by the consortium.⁷² Many scholars believe that this dynamic played a key role in the battle between Betamax and VHS to become the standard for video cassette recorders. What is sometimes forgotten is that Betamax launched first and was able to capture a large initial lead. The simplistic vision of network effects would conclude that the larger size of its network would create a competitive advantage that later standards could not match. JVC countered by using licensing to recruit a large consortium of equipment manufacturers willing to support VHS.⁷³ In this way, smaller players can cooperate to counterbalance disadvantages in size.

This dynamic also puts the lie to the oft-asserted claim that network effects allowed the Bell System to drive its competitors out of business simply by refusing to interconnect with them.⁷⁴ A close analysis of the market conditions renders this

⁷¹ MILTON L. MUELLER, JR., *UNIVERSAL SERVICE* 39–42, 55–60, 70–71, 74–75 (1997); Richard Gabel, *The Early Competitive Era in Telephone Communications, 1893–1920*, 34 *LAW & CONTEMP. PROBS.* 340, 344–45 (1969).

⁷² Smith, *supra* note 44.

⁷³ Michael A. Cusumano, Yiorgis Mylonadis, & Richard S. Rosenbloom, *Strategic Maneuvering and Mass-Market Dynamics: The Triumph of VHS over Beta*, 66 *BUS. HIST. REV.* 51, 72–76 (1992); Masaaki Kotabe, Arvind Sahay, & Preet S. Aulakh, *Emerging Role of Technology Licensing in the Development of Global Product Strategy: Conceptual Framework and Research Propositions*, 69 *J. MARKETING* 73, 77 (1996).

⁷⁴ See, e.g., Mark A. Lemley, *Antitrust and the Internet Standardization Problem*, 28 *CONN. L. REV.* 1041, 1046 n.19 (1996) (arguing that refusing to interconnect with its smaller rivals allowed the Bell System to acquire

perspective implausible. Because the independents had captured 51% of the market by 1907,⁷⁵ the independents could have defeated whatever advantage the Bell System might have gained from its refusal to interconnect simply by banding together to make a network of equal size.⁷⁶ In addition, the independents were the dominant providers of local telephone service in many parts of the Midwest. Given that the vast majority of calling was local, network effects should have given the independents the competitive advantage in those areas.⁷⁷

The traditional account is also belied by the business strategy pursued by the independents. If the Bell System had been in a dominant position, one would have expected the independents to have been clamoring to interconnect with it. In fact, the independents did not want to interconnect with the Bell System any more than the Bell System wanted to interconnect with the independents. In many cases, having been the first to establish connections to surrounding areas and a strong position in regions such as the Midwest, the independents were able to use network economic effects to their advantage. Any suggestion that the Bell System was able to use refusal to interconnect as a competitive weapon is further belied by the fact that the Bell System began to regain its dominance only after it abandoned its policy of refusing to interconnect with the independents.⁷⁸

nearly 90% of the market by 1920); Howard A. Shelanski & J. Gregory Sidak, *Antitrust Divestiture in Network Industries*, 68 U. CHI. L. REV. 1, 8 (2001) (pointing to AT&T's refusal to interconnect with independent competitors during the early twentieth century as an example of how network effects can lead to monopoly).

⁷⁵ Robert Bornholz & David S. Evans, *The Early History of Competition in the Telephone Industry*, in *BREAKING UP BELL: ESSAYS ON INDUSTRIAL ORGANIZATION AND REGULATION* 7, 13 (David S. Evans ed., 1983); see also Gabel, *supra* note 71, at 344 (reporting 3.0 million independent lines in 1907, compared with 3.1 million Bell lines).

⁷⁶ Roger G. Noll & Bruce M. Owen, *The Anticompetitive Uses of Regulation: United States v. AT&T*, in *THE ANTITRUST REVOLUTION* 290, 292 (John E. Kwoka, Jr. & Lawrence J. White eds., 1989).

⁷⁷ Peter Decherney, Nathan Ensmenger, & Christopher S. Yoo, *Are Those Who Ignore History Doomed to Repeat It?*, 78 U. CHI. L. REV. 1627, 1632–33 (2011).

⁷⁸ MUELLER, *supra* note 71, at 10, 51, 55–60, 72–80, 107–10, 115–17, 121–22; Bornholz & Evans, *supra* note 75,

Instead, the reemergence of the telephone monopoly was driven by a change in strategy in 1907. Recognizing that its attempt to outbuild the independents had failed, the Bell System pursued two classic anticompetitive strategies. First, it sought to merge to monopoly by acquiring independent systems. Second, if the independent refused to be acquired, the Bell System would instead adopt the equally classic anticompetitive practice of dividing the market with the independent by offering to withdraw from the territory in return for the independent's promise to restrict its activities to a "small and compact" territory and to interconnect exclusively with the Bell System's long distance network. The biggest problem with the disappearance of competition was pricing. Therefore, the Bell System dropped its previous opposition to government intervention and instead embraced rate regulation as an alternative to competition as a means for reining in price. As part of this regulatory compact, the Bell System insisted on protection against entry.⁷⁹ Although the Justice Department initially erected the Kingsbury Commitment to prevent such acquisitions, adherence to sound antitrust principles would disappear when the federal government took over the telephone network during World War I, when Postmaster General Albert Burleson sought to adopt the postal solution to universal service through rate averaging by ensuring each provider enjoyed a monopoly area.⁸⁰

In the end, the regulatory regime created by the Kingsbury Commitment was abolished (with the full support of the independents) by the enactment of the Willis-Graham Act, which shifted responsibility for reviewing telephone mergers from the

at 25–27; Gabel, *supra* note 71, at 353–54; David F. Weiman & Richard C. Levin, *Preying for Monopoly? The Case of Southern Bell Telephone Company, 1894–1912*, 102 J. POL. ECON. 103, 115, 118 (1994).

⁷⁹ MUELLER, *supra* note 71, at 78, 99–100, 107–13, 127–28; Gabel, *supra* note 71, at 355–58; Weiman & Levin, *supra* note 78, at 118, 120–25.

⁸⁰ Michael A. Janson & Christopher S. Yoo, *The Wires Go to War: The U.S. Experiment with Government Ownership of the Telephone System During World War I*, 91 TEX. L. REV. 983, 1013–17 (2013).

antitrust authorities to the Interstate Commerce Commission (ICC).⁸¹ The ICC became a rubber stamp that approved essentially all telecommunications mergers.⁸² During this period, both the Bell System and the independents also endorsed rate regulation of local telephone services by state public utility commissions.⁸³

The eventual emergence of a telephone monopoly was thus the result of classic anticompetitive strategies that were unfortunately condoned by the government because price competition would be replaced by rate regulation. When properly understood, this history shows that the market dominance typically attributed to the use of the refusal to interconnect to leverage network effects was actually the result of other factors.

B. Size of Technical Improvements

Another factor that can enable a new technology to dislodge an incumbent despite network effects is the provision of additional value that exceeds the value derived from the size of the old network.⁸⁴ The larger the increase in value, the easier it is to overcome the impact of network effects.⁸⁵ This is particularly true given that in sufficiently large networks, the marginal benefit from adding another subscriber is likely to be low, which greatly reduces network economic effects' marginal impact.⁸⁶

⁸¹ Ch. 20, 42 Stat. 27 (1921).

⁸² BUREAU OF STATISTICS, INTERSTATE COMMERCE COMM'N, INTERSTATE COMMERCE COMMISSION ACTIVITIES, 1887-1937, at 201 (1937); Glen O. Robinson, *The Federal Communications Act: An Essay on Origins and Regulatory Purpose*, in A LEGISLATIVE HISTORY OF THE COMMUNICATIONS ACT OF 1934, at 3, 8 n.25 (Max D. Paglin ed., 1989).

⁸³ MUELLER, *supra* note 71, at 99–100; Gabel, *supra* note 71, at 357; Robinson, *supra* note 82, at 6–7.

⁸⁴ This discussion draws on work previously published as Spulber & Yoo, *supra* note 10, at 928, 931.

⁸⁵ Katz & Shapiro, *supra* note 56, at 106 (observing that new, incompatible standards may emerge despite the presence of network externalities if “consumers . . . care more about product attributes than network size.”); S.J. Liebowitz & Stephen E. Margolis, *The Fable of the Keys*, 33 J.L. & ECON. 1, 4 (1990) (“The greater the gap in performance between two standards, . . . the more likely that a move to the efficient standard will take place.”).

⁸⁶ BRIDGER M. MITCHELL & INGO VOGELSANG, TELECOMMUNICATIONS PRICING: THEORY AND PRACTICE 55 (1991); A. de Fontenay & J.T. Lee, *B.C./Alberta Long Distance Calling*, in ECONOMIC ANALYSIS OF TELECOMMUNICATIONS: THEORY AND APPLICATIONS 199, 207–09 (Léon Courville et al. eds. 1983); G. Yarrow,

Technical superiority is what allowed Sega to overcome Nintendo's large preexisting installed base by releasing a 16-bit video game platform that represented a clear advance over Nintendo's 8-bit technology⁸⁷ and helped Xbox enter despite the large scale enjoyed by PlayStation 2.⁸⁸ Another example is the role that consumers' preferences for VHS's ability to deliver longer playing times over Betamax's greater portability played a large role in allowing VHS to overcome the fact that Betamax launched one year earlier and established an early lead.⁸⁹ Superior quality allowed Excel to displace Lotus 1-2-3, Quicken to displace Managing Your Money, and Word to displace WordStar and WordPerfect, despite being at significant size disadvantages.⁹⁰

An oft-cited supposed counterexample is the QWERTY keyboard, which supposedly represents an obsolete technology locked into place by network effects despite the emergence of a superior technology.⁹¹ This assertion is belied by the fact that QWERTY consistently beat its competitors in typing speed competitions, with the only evidence to the contrary being tests riddled with conflicts of interest conducted by the inventor and chief proponent of a rival keyboard.⁹²

Dealing with Social Obligations in Telecoms, in REGULATING UTILITIES: A TIME FOR CHANGE? 67 (S. Sayer et al. eds., 1996).

⁸⁷ Robert Pitofsky, Chairman, Fed. Trade Comm'n, Antitrust Analysis in High-Tech Industries: A 19th Century Discipline Addresses 21st Century Problems, Remarks before American Bar Association Section of Antitrust Law's Antitrust Issues in High-Tech Industries Workshop (Feb. 25, 1999) (transcript available at <http://www.ftc.gov/speeches/pitofsky/hitch.htm>).

⁸⁸ Feng Zhu & Marco Iansiti, *Entry into Platform Markets*, 33 STRATEGIC MGMT. J. 88, 98–100 (2012).

⁸⁹ S.J. Liebowitz & Stephen E. Margolis, *Path Dependence, Lock-In, and History*, 11 J.L. ECON. & ORG. 205, 218–20 (1995). *But see* Hiroshi Ohashi, *The Role of Network Effects in the US VCR Market, 1978-1986*, 12 J. ECON. & MGMT. STRATEGY 447, 475 (2003) (attributing VHS's success to its superiority in the characteristics domain through 1982, but finding that network effects during late years); Sangin Park, *Quantitative Analysis of Network Externalities in Competing Technologies, The VCR Case*, 86 REV. ECON. & STAT. 937, 944 (2004) (same).

⁹⁰ Gerald J. Tellis, Eden Yin, & Rakesh Niraj, *Does Quality Win? Network Effects Versus Quality in High-Tech Markets*, 44 J. MKTG. RES. 135, 140–43 (2009).

⁹¹ David, *supra* note 3.

⁹² Liebowitz & Margolis, *supra* note 85, at 8–21; Neil M. Kay, *Rerun the Tape of History and QWERTY Always Wins*, 42 RES POL'Y 1175 (2013).

Perhaps most importantly for the current debate, the superiority of Google's PageRank algorithm helped it overcome any advantages given by Altavista's and Yahoo!'s greater initial network size despite the fact that Google was a relative latecomer to the search engine game.⁹³ Development of a superior product is also reported to have played a role in Facebook's success in overcoming the multiyear head start enjoyed by Myspace.⁹⁴ The iPhone's (and later Android's) superior user interface allowed it to displace Nokia's dominant Symbian platform notwithstanding Symbian's dominant market position.

More systematic empirical research confirms the key role of technological superiority. A study of nineteen products and services relating to personal computers found frequent changes in market leadership driven by improvements in quality, a result inconsistent with simple winner-take-all inferences from being the first to market.⁹⁵ Furthermore, although both network effects and quality affect market share, quality proves more important. Network effects may delay higher-quality products from taking over the market.⁹⁶ Subsequent empirical work has confirmed how product quality can overcome first-mover advantages and network size.⁹⁷

C. Market Growth

Another structural feature that can dissipate the impact of network effects is explosive growth in demand.⁹⁸ In growing markets, the number of users who have

⁹³ Justus Haucap & Ulrich Heimeshoff, *Google, Facebook, Amazon, eBay: Is the Internet Driving Competition or Marketplace Monopolization?*, 11 INT'L ECON. & ECON. POL'Y 49, 55 (2014).

⁹⁴ Alexia Tsotsis, *Sean Parker on Why Myspace Lost to Facebook*, TECHCRUNCH (June 28, 2011, 7:42 PM EDT), <https://techcrunch.com/2011/06/28/sean-parker-on-why-myspace-lost-to-facebook/>.

⁹⁵ Tellis et al., *supra* note 90, at 147.

⁹⁶ *Id.*

⁹⁷ David P. McIntyre, *In a Network Industry, Does Product Quality Matter?*, 28 J. PRODUCT INNOVATION MGMT. 99 (2011); Zhu & Iansiti, *supra* 88.

⁹⁸ This discussion draws on work previously published as Yoo, *supra* note 55, at 280.

already made commitments to a particular technology is small compared to the number who will do so in the future. In such cases, the current market shares of particular firms are of little consequence. In short, networks' value depends on the size they will attain in the future rather than the size that they have attained today.⁹⁹

Expectations about future growth played a role in VHS's ability to overtake the early lead established by Betamax.¹⁰⁰ The importance of rapid market growth also helps explain how late-arriver Google (launched in 1998) was able to displace early market leaders such as Altavista, since it was only in the mid-1990s, following the development of hypertext market language (HTML) and the first graphic-oriented browser (Mosaic), that the number of U.S. Internet users began to take off.¹⁰¹ The existence of a large percentage of users who had not yet adopted social networking similarly helps explain how Facebook was able to overcome Myspace's initial market dominance.¹⁰²

D. Variations in Consumer Preferences for Different Network Designs

Much as differences in the value placed on the ability to connect with particular endpoints can dissipate the impact of network effects, so can heterogeneity in consumer preferences in network architecture.¹⁰³ As Michael Katz and Carl Shapiro note:

Customer heterogeneity and product differentiation tend to limit tipping and sustain multiple networks. If the rival systems have distinct features sought by certain customers, two or more systems may be able to survive by catering to consumers who care more about product attributes than network size. Here, market equilibrium with multiple incompatible products

⁹⁹ Katz & Shapiro, *supra* note 59, at 67, 73; S.J. Liebowitz & Stephen E. Margolis, *Should Technology Choice Be a Concern of Antitrust Policy?*, 9 HARV. J.L. & TECH. 283, 292, 312 (1996); Carl Shapiro, *Aftermarkets and Consumer Welfare: Making Sense of Kodak*, 63 ANTITRUST L.J. 483, 490 (1995).

¹⁰⁰ Park, *supra* note 89, at 944.

¹⁰¹ CHRISTOPHER S. YOO, THE DYNAMIC INTERNET: HOW TECHNOLOGY, USERS, AND BUSINESSES ARE TRANSFORMING THE NETWORK 21 (2012).

¹⁰² Gil Press, *Why Facebook Triumphed Over All Other Social Networks*, FORBES (Apr. 8, 2018, 4:11 PM EDT), <https://www.forbes.com/sites/gilpress/2018/04/08/why-facebook-triumphed-over-all-other-social-networks/#2afa2ffe6e91>.

¹⁰³ This discussion draws on work previously published as Yoo, *supra* note 55, at 280–81; and Christopher S. Yoo, *Beyond Network Neutrality*, 19 HARV. J.L. & TECH. 1, 34–36 (2005).

reflects the social value of variety.¹⁰⁴

Indeed, if what consumers want from the network is sufficiently heterogeneous, they will derive greater value from using a network better tailored to their preferences than from belonging to a larger network, and the equilibrium and welfare maximizing outcome will be multiple incompatible networks.

The point is demonstrated eloquently by a simple model put forth by Joseph Farrell and Garth Saloner, who wrote some of the pioneering papers on network economic effects. Assume that two different populations of end users each would prefer a slightly different standard and that both would benefit from network economic effects if they were part of the same network. Each group has two options: It can join the other group's standard, in which case it gains from being part of a larger network, but loses value from adopting a standard that it prefers less. Or it can adhere to its preferred standard, in which case it benefits from consuming its preferred standard, but foregoes the benefits of network economic effects should the other group adhere to its preferred standard as well.¹⁰⁵

The considerations driving the equilibrium are clear. If the value that either group derives from consuming its preferred standard is sufficiently large, the greater value will induce it to adopt its preferred standard even if it means being part of a smaller network. Any welfare losses from network fragmentation are more than offset by gains in allowing groups of end users to consume a standard that is a better fit with their preferences. Thus, much as monopolistic competition shows how heterogeneity in consumer preferences for different products can allow multiple firms to compete despite the presence of supply-side economies of scale caused by declining average costs, these models show how this same factor can overcome the demand-side economies of scale associated with network

¹⁰⁴ Katz & Shapiro, *supra* note 56, at 106; Liebowitz & Margolis, *supra* note 99, at 292 ("Where there are differences in preference regarding alternative standards, coexistence of standards is a likely outcome.").

¹⁰⁵ Joseph Farrell & Garth Saloner, *Standardization and Variety*, 20 ECON. LETTERS 71 (1986).

effects.

Allowing for the possibility of heterogeneity in consumer preferences for different network architectures can cause the bias towards a single network to disappear and permits stable equilibria with multiple networks each serving a subsegment of the overall market. The classic example is the co-existence of IBM and Apple as manufacturers of personal computers (PCs) during the 1980s and 1990s notwithstanding the presence of network effects and IBM's significantly larger scale. The same dynamics appear to be allowing iOS to survive despite Android's larger installed base.

E. Large Customers

The presence of large customers and suppliers can alleviate the impact of network effects. Firms that occupy a large proportion of a particular network may make that network less susceptible to becoming locked into any particular technology because their sheer size allows them to internalize a large proportion of the benefits of their network adoption decisions.¹⁰⁶ The existence of large players thus represents one way in which the problems of network externalities may be circumvented. A prime example is how quickly the standards battle between Blu-ray and HD-DVD ended after Walmart committed to Blu-ray.¹⁰⁷

* * *

The theory and empirics on network effects, thus, reinforce the idea that certain structural preconditions must be satisfied before network effects can harm competition. Network effects cannot be simply equated with market concentration and market failure without the development of a detailed factual record, as required by traditional antitrust principles.

¹⁰⁶ Katz & Shapiro, *supra* note 56, at 102–03.

¹⁰⁷ Raju Mudhar, *The Terminal Cost of Failing to Launch*, TORONTO STAR, June 30, 2015, at S6.

IV. ALTERNATIVE INSTITUTIONAL FORMS

Even in cases where the structure of network effects, the size of the countervailing externalities, and the structural conditions can support plausible claims that the presence of network effects can lead to market failure, a complete analysis requires consideration of whether alternative institutional forms exist that can counteract or mitigate these problems. Indeed, many networks contain institutional features that provide other ways to offset the impact of network effects.

A. Classic Responses to Positive Externalities

1. Coasean Markets

As noted earlier, a major source of potential problems is the presence of positive network externalities that confer benefits on others that the actor joining the network does not internalize. Positive externalities can lead to activity levels that fall below welfare-maximizing levels.

One classic solution to positive network externalities follows from Coase.¹⁰⁸ In response to Pigou's claim that all positive externalities should be subsidized by the government, Coase showed how private parties can bargain around externalities so long as sufficient markets exist to enable them to do so.¹⁰⁹

This suggests a straightforward solution to positive network externalities. Network owners can allow users who are joining a new network to internalize all of the benefits of their adoption decision simply by giving those users a discount equal to the benefits they are conferring on existing network participants.¹¹⁰ The fact that the benefits resulting from any increase in the network's value would accrue directly to the network

¹⁰⁸ This discussion draws on work previously published as Christopher S. Yoo, *Network Neutrality and the Economics of Congestion*, 94 GEO. L.J. 1847, 1891 (2006).

¹⁰⁹ R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

¹¹⁰ Liebowitz & Margolis, *supra* note 46, at 11-13; Liebowitz & Margolis, *supra* note 11, at 137.

owner effectively aligns social benefits with private benefits. Such introductory pricing schemes are legion.

2. Vertical Integration and Restraints

Although Coasean markets work for direct network effects, which arise when value is determined by the number of people who have adopted the same technology, other solutions are possible when the network effects are indirect, which arise when value is determined by the number of people who have adopted complementary goods and services.¹¹¹ The literature on network effects emphasizes how vertical integration can incentivize production of both the primary and complementary products.¹¹² The literature on General Purpose Technologies (GPTs), a related concept that also focuses on technologies that generate positive externalities, similarly indicates that vertical integration can allow the producers of the platform technology to internalize more of the positive externalities they generate for complementary products.¹¹³

This argument fits into a long tradition of theories exploring how the degree of vertical integration varies over the course of an industry's life cycle. The best-known theory was offered by Nobel laureate George Stigler. Stigler argues that vertical integration in an industry follows a "U" shape over time, beginning as vertically integrated, transitioning to vertically disintegrated as the industry matures, and then returning once again to vertically integrated as the industry declines. Because young industries often employ new materials and technologies that are typically unavailable on the open market, firms operating in these industries must produce all of their key inputs

¹¹¹ This discussion draws on work previously published as Christopher S. Yoo, *Is There a Role for Common Carriage in an Internet-Based World?*, 51 HOUS. L. REV. 545, 557–58 (2013); Yoo, *supra* note 77, at 1668–70; and Christopher S. Yoo, *Technological Determinism and Its Discontents*, 127 HARV. L. REV. 914, 942 (2014).

¹¹² Katz & Shapiro, *supra* note 56, at 103–04.

¹¹³ Timothy F. Bresnahan & M. Trajtenberg, *General Purpose Technologies: "Engines of Growth"?*, 65 J. ECONOMETRICS 83, 94–96 (1995).

themselves. As demand for the product becomes better established, production becomes sufficiently large, and risk drops to the point where third parties have strong incentives to begin providing these inputs. When the industry enters its decline phase, the decline in sales volume causes third-party input providers to disappear, and firms operating in this industry must once again provide these inputs for themselves.¹¹⁴ Indeed, two-sided markets that require the simultaneous development of complementary products often rely on a single, vertically integrated player to get both sides on board.¹¹⁵

History has many examples of this dynamic. The broadcasting and cable industries relied on vertical integration to meet the need for expanded content during their early years.¹¹⁶ Other examples include the fact that Apple relied on its proprietary software provider Claris to produce the first generation of software for the Macintosh.¹¹⁷ Such practices are likely to benefit consumers. Several recent surveys of the empirical literature of vertical integration and restraints found that the overwhelming majority of studies found the practice to be neutral or welfare enhancing.¹¹⁸

B. Multihoming and Gateways

Another oft-overlooked consideration that can mitigate the problems associated

¹¹⁴ George Stigler, *The Division of Labor Is Limited by the Extent of the Market*, 59 J. POL. ECON. 185, 190 (1951).

¹¹⁵ Bernard Caillaud & Bruno Jullien, *Chicken & Egg: Competition among Intermediation Service Providers*, 34 RAND J. ECON. 309, 310–11, 322–23 (2003); Rochet & Tirole, *supra* note 39, at 990, 1013, 1018.

¹¹⁶ ITHIEL DE SOLA POOL, TECHNOLOGIES OF FREEDOM 35 (1983); Bruce M. Owen & Gregory L. Rosston, *Local Broadband Access: Primum Non Nocere or Primum Processi? A Property Rights Approach*, in NET NEUTRALITY OR NET NEUTERING: SHOULD BROADBAND INTERNET SERVICES BE REGULATED? 163, 164–65 (Thomas M. Lenard and Randolph J. May eds, 2006); Alfred E. Kahn, A Democratic Voice of Caution on Net Neutrality 3 (Progress Snapshot, Release 2.24, Oct. 2006)).

¹¹⁷ Claris Corporation, *Presenting Claris 1.0*, INFOWORLD, Sept. 26, 1988, at S8-S9.

¹¹⁸ James C. Cooper et al., *Vertical Antitrust Policy as a Problem of Inference*, 23 INT'L J. INDUS. ORG. 639, 648–58 (2005); Francine Lafontaine & Margaret Slade, *Exclusive Contracts and Vertical Restraints: Empirical Evidence and Public Policy*, in HANDBOOK OF ANTITRUST ECONOMICS 391, 408–09 (Paolo Buccirossi ed., 2008); Francine Lafontaine & Margaret Slade, *Vertical Integration and Firm Boundaries: The Evidence*, 45 J. ECON. LIT. 629, 680 (2007).

with network effects is the presence of *gateways* between networks (also sometimes called *adapters* or *converters*).¹¹⁹ Indeed, one of the seminal articles on network effects by Katz and Shapiro conclude that if gateways allow perfect compatibility, all anticompetitive effects disappear.¹²⁰ Carmen Matutes and Pierre Regibeau similarly find that if gateways exist that allow different actors to decide unilaterally whether their components are compatible with other systems by building gateways, “compatibility arises and is always socially optimal provided that there are no costs to achieving standardization.”¹²¹ Paul David and Julie Bunn likewise conclude that “initial technical incompatibilities between variant formulations of such technologies . . . can have their economic importance mitigated as a result of the ex post introduction of gateway innovations.”¹²² In effect, perfect gateways obviate the need to choose one network or the other by turning all component networks into one large network.

Even imperfect gateways can provide improved economic welfare. Joseph Farrell and Garth Saloner present a model that enables them to explore the implications of imperfect gateways. After confirming Katz and Shapiro’s conclusion that costless and perfect gateways eliminate any adverse impact of network effects, Farrell and Saloner demonstrate that the welfare impact is ambiguous when gateways are imperfect.¹²³

Multihoming is a related practice that allows individual users to belong to multiple networks at the same time. For example, many users maintain accounts with both Uber and Lyft instead of choosing between them. Much like gateways, multihoming prevents

¹¹⁹ This discussion draws on work previously published as Christopher S. Yoo, *When Antitrust Met Facebook*, 19 GEO. MASON L. REV. 1147, 1153–54 (2012).

¹²⁰ Katz & Shapiro, *supra* note 3, at 435–36, 439.

¹²¹ Carmen Matutes & Pierre Regibeau, “Mix and Match”: Product Compatibility Without Network Externalities, 19 RAND J. ECON. 221, 232 (1988).

¹²² Paul A. David & Julie Ann Bunn, *The Economics of Gateway Technologies and Network Evolution: Lessons from Electricity Supply Industry*, 3 INFO. ECON. & POL’Y 165, 197 (1988).

¹²³ Joseph Farrell & Garth Saloner, *Converters, Compatibility, and the Control of Interfaces*, 40 J. INDUS. ECON. 9, 32 (1992).

network adoption from being an either-or decision. Eliminating the potential for winner-takes-all dynamics reduces any one network's ability to exercise market power.¹²⁴ The dynamics can be complex. For example, independent decision-making about multihoming can actually make the decisionmaker worse off.¹²⁵

There is a long history of gateways helping to dissipate the impact of network effects. For example, the ability to read WordPerfect files facilitated the entry of Word.¹²⁶ Excel's capacity to read Lotus 1-2-3 files helped enable it to overcome Lotus's large advantage in installed base.¹²⁷ The functionality of Apple computers to read DOS-formatted floppy disks helped its adoption, as did the inclusion of chips that allowed them to run software created for Windows.¹²⁸ Similarly, multihoming prevented Uber from forestalling the emergence of Lyft.¹²⁹ The ability of users to subscribe to multiple messaging services simultaneously prevented America Online from dominating the market.¹³⁰ The ability for users to maintain multiple zero-cost browsers and media players undercut the winner-take-all dynamics that lay at the heart of the Microsoft cases.¹³¹

Together these analyses suggest that creating gateways and multihoming can dissipate any monopoly power enjoyed by large networks. They provide another reason

¹²⁴ Bernard Caillaud & Bruno Julien, *Chicken and Egg: Competing Matchmakers*, 34 RAND J. ECON. 309 (2003); Zhu & Iansiti, *supra* note 35, at 124–25.

¹²⁵ Benjamin E. Hermalin & Michael L. Katz, *Your Network or Mine? The Economics of Routing Rules*, 37 RAND J. ECON. 692 (2006).

¹²⁶ Farrell & Saloner, *supra* note 123, at 10.

¹²⁷ Neil Gandal, *Hedonic Price Indexes for Spreadsheets and an Empirical Test for Network Externalities*, 25 RAND J. ECON. 160, 168–69 (1994).

¹²⁸ Thomas R. Eisenmann, Geoffrey Parker, & Marshall Van Alstyne, *Opening Platforms: How, When, and Why?*, in PLATFORMS, MARKETS AND INNOVATION 131, 138 (Annabelle Gawer ed., 2009); CARL SHAPIRO & HAL VARIAN, INFORMATION RULES 287 (1999).

¹²⁹ Catherine Tucker, *Network Effects and Market Power: What Have We Learned in the Last Decade?*, ANTITRUST, Spring 2018, at 77, 78–79; Zhu & Iansiti, *supra* note 33, at 124.

¹³⁰ Toker Godanoglu & Julian Wright, *Multihoming and Compatibility*, 24 INT'L J. INDUS. ORG. 45, 58–59 (2006).

¹³¹ Nicholas Petit & Norman Neyrinck, *Back to Microsoft I and II: Tying and the Art of Secret Magic*, 2 J. EUR. COMPETITION L & PRACTICE 117, 118 (2011).

that competition law cases require more than the mere assertion of the presence network effects.

CONCLUSION

Despite attempts by recent reports to equate network effects with market failure, an examination of both the theoretical and empirical literature make clear that the relationship between network effects and market failure is more complex. Indeed, history is littered with once-leading digital companies that can attest to the reality that network effects are not sufficient by themselves to protect the dominance of early-market leaders. Considerations such as variation in the value of connections and the existence of countervailing externalities make the relationship between network effects and market failure ambiguous. In addition, network-effects based theories depend on the satisfaction of structural preconditions that must be shown in individual cases. Even when those preconditions are met, alternative institutional solutions exist that can mitigate or even dissipate the impact of network effects. All of this is informed by the history of antitrust and regulatory enforcement along with an emerging empirical literature showing that network effects can lead to a wide range of results.

Antitrust law has long required plaintiffs to produce a clear theory supported by evidence sufficient to show that a particular practice is likely to harm consumers. The literature and enforcement history make clear that the mere presence of network effects is not by itself sufficient to establish the presence of entry barriers, market dominance, or harm to competition. Enforcement officials should resist the temptation to treat the mere assertion of network effects as the basis for an enforcement action and should continue to rely on the traditional tools of competition law. Doing so requires doing the hard work to build cases, but that is nothing new and is necessary if antitrust law is to fulfill its responsibility of promoting the welfare of consumers.

Technology Economics: Innovation, Licensing, and Antitrust

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I. THE WELFARE TRADE-OFF OF INNOVATION

In the *Northern Pacific* decision, Supreme Court Justice Hugo Black declared that the Sherman Act “rests on the premise that the unrestrained interaction of competitive forces will yield the best allocation of our economic resources, the lowest prices, the highest quality and the greatest material progress.”¹ And it was during the *Northern Pacific* litigation that Kenneth Arrow and Gérard Debreu laid a theoretical foundation on which this premise now rests by demonstrating that a perfectly competitive economy optimally allocates resources.² A few years after the *Northern Pacific* decision, however, Kenneth Arrow also explained that the peculiar economics of information-based commodities, including inventions, prevent a perfectly competitive economy from optimizing the resources allocated to innovation.³

Information is a public good in that there is no rivalry in consumption; when one person “consumes” a piece of information, no less information is available to others. Information also can be reproduced at a marginal cost approaching zero,⁴ so achieving a socially optimal utilization of information requires making information freely available to everyone without charging anyone. While giving information away optimizes the utilization of information, it undermines the production of information, since no one has

¹ *N. Pac. Ry. Co. v. United States*, 356 U.S. 1, 4 (1958).

² Kenneth J. Arrow & Gérard Debreu, *Existence of an Equilibrium for a Competitive Economy*, 22 *ECONOMETRICA* 265 (1954). Arrow and Debreu proved that the equilibrium for an entire competitive economy (as opposed to a single competitive market) is Pareto optimal, i.e., no one in the economy can be made better off without making someone worse off.

³ Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY* 609, 622–24 (Richard R. Nelson ed., 1962).

⁴ Arrow additionally posited that a purchaser of information could not know its value without examining it closely, and that markets, consequently, would be unable to price information accurately. *Id.* at 615.

a profit incentive to produce information that will be given away.

Although governments provide substantial funding for basic research, the production of information is funded mostly out of fees paid by users of the information, and reliance on such fees precludes efficient utilization of the information. Moreover, the distribution of information can be limited because information derives value from the fact that relatively few people possess it; indeed, a piece of information can have the greatest value when possessed by a single person. Thus, “the unrestrained interaction of competitive forces” cannot be relied upon to “yield the best allocation of our economic resources” with respect to information generally, and with respect to innovation in particular.

Inventors typically are compensated with a share of the proceeds from the sale of goods and services incorporating their inventions.⁵ A man who builds a better mousetrap might manufacture it himself and sell it at a premium over inferior mousetraps, or he might license it to a mousetrap manufacturer and receive a royalty on the sale of mousetraps that embody his invention. In either event, the inventor’s reward is a wedge separating the price consumers pay from the marginal cost of production. The existence of that wedge prevents inventions from being utilized as fully as is socially desirable, even if the use of the technology is restricted in no other manner.

Public policy toward innovation confronts a trade-off: Increasing the compensation of successful inventors spurs technical progress but reduces the efficiency of static resource allocation by enlarging the wedge between the prices of goods and services and their marginal costs of production. A key economic insight that guides public policy with respect to this trade-off is that economic growth is the prime driver of

⁵ If an invention is sold outright to someone who licenses to implementers, the acquiror steps into the inventor’s shoes and typically shares in the proceeds from the sale of goods and services. Particularly in the digital economy, the reward to invention sometimes is indirect: Services produced using an invention are given away, but revenue is generated by selling advertising or ancillary goods and services.

social welfare gains. More than a century ago, John Bates Clark and his son John Maurice Clark observed that:

*It is not a large present social income that is the chief desideratum but a constantly enlarging income. Progress is in itself the *summum bonum* in economics, and that society is essentially the best which improves the fastest. No state can be good if it is stationary, or fundamentally bad if it is now advancing at a satisfactory rate. It is the direction and the rate of social progress which afford the supreme test of the quality of an economic system.*⁶

More recently, Robert Solow explained that: “Adding a couple of tenths of a percentage point to the growth rate is an achievement that eventually dwarfs in welfare significance any of the standard goals of economic policy.”⁷

Solow was awarded the 1987 Nobel Prize for his contributions to the theory of economic growth. Decades earlier, he presented evidence suggesting that technical progress accounted about seven-eighths of the growth in U.S. GDP between 1909 and 1949.⁸ Later research, using different methods, focused on later periods when productivity increased more slowly. That research typically found that technological change accounted for half of GDP growth.⁹ And the welfare gains from new technologies surely are undercounted by the GDP, which totes up sales value of goods and services, and not the consumer benefits derived from their consumption.¹⁰

⁶ JOHN BATES CLARK & JOHN MAURICE CLARK, *THE CONTROL OF TRUSTS* 134–35 (1912).

⁷ Robert M. Solow, Lecture for the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 1987: Growth Theory and After (Addendum, Aug. 2001), https://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/1987/solow-lecture.html.

⁸ Robert M. Solow, *Technical Change and the Aggregate Production Function*, 39 REV. ECON. & STAT. 312, 314–15 (1957). Follow-on research refined Solow’s analysis, but did not overturn his basic conclusion. See Richard R. Nelson, *Research on Productivity Growth and Productivity Differences: Dead Ends and New Departures*, 19 J. ECON. LITERATURE 1029 (1981).

⁹ See, e.g., Charles I. Jones, *Sources of U.S. Economic Growth in a World of Ideas*, 92 AM. ECON. REV. 220 (2002); Michael J. Boskin & Lawrence J. Lau, *Capital, Technology, and Economic Growth*, in *TECHNOLOGY AND THE WEALTH OF NATIONS* 17 (Nathan Rosenberg et al. eds., 1992). During the 1990s, improvements in information technology were found to have contributed more than half of the increase in industrial productivity in the United States. Stephen D. Oliner & Daniel E. Sichel, *The Resurgence of Growth in the Late 1990s: Is Information Technology the Story?*, 14 J. ECON. PERSP. 3, 18–19 (2000).

¹⁰ For further discussion of GDP and the digital economy, see Avinash Collis, *Consumer Welfare in the Digital Economy*, in *THE GAI REPORT ON THE DIGITAL ECONOMY* (2020).

Capitalist economies, and the United States in particular, have a remarkable track record for developing and implementing new and improved methods of production and new and improved goods and services. The central reason is that innovation is the key to success in marketplace competition. John Bates Clark might have been the first economist to make this observation:

There is a law of survival which, when competition rules, eliminates poor methods and introduces better ones in endless succession. . . . In order to survive, any producer must keep pace with the aggressive and growing ones among his rivals in the march of improvement, whether it comes by improved tools of trade or improved generalship in the handling of men and tools.¹¹

Joseph Schumpeter similarly explained that:

The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers' goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates. . . . This process of Creative Destruction is the essential fact about capitalism.¹²

More recently, William Baumol declared that: "Under capitalism, innovative activity—which in other types of economy is fortuitous and optional—becomes mandatory, a life-and-death matter for the firm . . . The capitalist economy can usefully be viewed as a machine whose primary product is economic growth."¹³

Another reason for the technological track record of capitalist economies is that inventors are rewarded in rough proportion to their social welfare contributions.¹⁴ Most inventions are neither implemented to any significant extent nor spawn other useful inventions; they generally yield little social benefit and little compensation for inventors.

¹¹ JOHN BATES CLARK, *ESSENTIALS OF ECONOMIC THEORY* 368–69 (1907).

¹² JOSEPH A. SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* 82–83 (Taylor & Francis e-Library 2003) (1943).

¹³ WILLIAM J. BAUMOL, *THE FREE MARKET INNOVATION MACHINE: ANALYZING THE GROWTH MIRACLE OF CAPITALISM* 1 (2002). Baumol distinguished invention from innovation, which implements invention in a tangible way. He argued that capitalism has excelled in innovation. *Id.* at 10.

¹⁴ See William F. Baxter, *Legal Restrictions on Exploitation of the Patent Monopoly: An Economic Analysis*, 76 *YALE L.J.* 267, 313 (1966) ("The only justification for using monopoly as opposed to direct government subsidy to induce innovation is to utilize the competitive processes of the private economy to assess and reward proportionately the value of each particular invention.").

The bulk of the social benefits are associated with the relatively few inventions that are widely utilized, and they generate the bulk of the compensation to inventors. The relationship between social value and compensation is imperfect, however, especially for basic inventions.¹⁵ Basic inventions often are not implemented commercially during the patent term, but follow-on inventions are implemented.¹⁶

Despite the technological track record of capitalist economies, empirical research generally finds too little investment in research and development.¹⁷ The main reason is that inventors appropriate far less than the entire social value of their inventions. Much of the value of inventions is realized as consumers' surplus because new and improved goods and services are sold for significantly less than many consumers would be willing to pay for them. In addition, important inventions often lead to other inventions for which the original inventors get no compensation. Finally, patent rights have limited duration and might not prevent all copying during the patent term.

Other factors tend toward overinvestment in research and development. First, competition among inventors results in duplicative efforts, although the competition has the value of introducing inventions sooner. Second, introducing inventions sooner might be all an inventor can achieve, yet the reward system presumes that the invention would not have been introduced at all. Third, new products and new production methods destroy value in assets dedicated to the old products and production methods, and those

¹⁵ See, e.g., Arrow, *supra* note 3, at 618 ("Thus basic research, the output of which is only used as an informational input into other inventive activities, is especially unlikely to be rewarded. In fact, it is likely to be of commercial value to the firm undertaking it only if other firms are prevented from using the information obtained. But such restriction on the transmittal of information will reduce the efficiency of inventive activity in general and will therefore reduce its quantity also.").

¹⁶ Examples of basic inventions that did not generate much short-term financial benefit are the transistor and the laser.

¹⁷ See, e.g., Charles I. Jones & John C. Williams, *Too Much of a Good Thing? The Economics of Investment in R&D*, 5 J. ECON. GROWTH 65, 75–76 (2000); Charles I. Jones & John C. Williams, *Measuring the Social Return to R&D*, 113 Q.J. ECON. 1119, 1132–34 (1998).

investing in research and development account for this destruction of value only to the extent that they own assets that are destroyed.

II. ECONOMIC RATIONALE OF THE PATENT SYSTEM

The public policy of the United States has always been to aid inventors and authors. The Constitution granted Congress the power “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”¹⁸ By defining intellectual property rights, patent and copyright law have helped inventors and authors appropriate a significant share of the value of their inventions and writings.

The U.S. patent system “promote[s] the Progress of Science and useful Arts” in two distinct ways: 1. Protecting inventors’ property rights increases the rewards to invention, thereby increasing research and development and enhancing the pace of technical change. 2. To further stimulate invention, patent protection is given only in exchange for immediate disclosure of inventions, many of which otherwise would be kept secret.¹⁹ The patent system’s plan to facilitate invention by encouraging disclosure was premised on the historical observation that scientists and inventors have built on the work of those who came before them. Sir Isaac Newton famously wrote: “If I have seen further it is by standing on the shoulders of giants.”²⁰

¹⁸ U.S. CONST., art. I, § 8, cl. 8. For early debates on rationales for patents, see generally Fritz Machlup & Edith Penrose, *The Patent Controversy in the Nineteenth Century*, 10 J. ECON. HIST. 1 (1950).

¹⁹ For many years, inventors could delay disclosure by not filing patent applications until their inventions became commercial. They faced no risk of losing priority to another patent application because a patent could be awarded only to the first to invent. Inventors also could drag out the application process, thereby extending patent protection and postponing disclosure. Beginning March 16, 2013, the United States followed the rest of the world in awarding patent to the first to file. Leahy-Smith America Invents Acts, 35 U.S.C. § 102(a) (2018). And patent applications filed after November 29, 2000 generally have been published 18 months after filing even if no patent had issued. American Inventors Protection Act of 1999, 35 U.S.C. § 122(b) (2018).

²⁰ Letter from Isaac Newton to Robert Hooke (Feb. 5, 1675), <https://digitallibrary.hsp.org/index.php/Detail/objects/9792>. For a discussion of earlier versions of the adage, see Umberto Eco, *Foreword* to ROBERT K.

The Supreme Court has always recognized both rationales. In 1829 Justice Joseph Story declared that “one great object” of the Patent Act was “to stimulate the efforts of genius” by providing “a reasonable reward to inventors,” while the “main object” was “to promote the progress of science and useful arts” by “giving the public at large a right to make, construct, use, and vend the thing invented, at as early a period as possible,” which requires that an inventor not be permitted “to hold back from the knowledge of the public the secrets of his invention.”²¹ In 1998, the Supreme Court more succinctly stated that “the patent system represents a carefully crafted bargain that encourages both the creation and the public disclosure of new and useful advances in technology, in return for an exclusive monopoly for a limited period of time.”²²

Mainstream economic thought has long held that some protection from copying is essential to incentivize applied research and development.²³ John Bates Clark declared: “Not only on *a priori* grounds, but on grounds of actual experience and universal practice, we may say that patents are an indispensable part of a dynamic system of industry.”²⁴ He explained:

Why should one *entrepreneur* incur the cost and the risk of experimenting with a new machine if another can look on, ascertain whether the device works well or not, and duplicate it if it is successful? Under such conditions the man who watches others, avoids their losses, and shares

MERTON, ON THE SHOULDERS OF GIANTS: A SHANDEAN POSTSCRIPT, at xiii–xv (1993) (1965).

²¹ *Pennock v. Dialogue*, 27 U.S. (2 Pet.) 1, 19 (1829). Chief Justice John Marshall explained that a patent is “the reward stipulated for the advantages derived by the public for the exertions of the individual [inventor], and is intended as a stimulus to those exertions.” *Grant v. Raymond*, 31 U.S. (6 Pet.) 218, 242 (1832).

²² *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 63 (1998). *See also* *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150–51 (1989) (“The federal patent system . . . embodies a carefully crafted bargain for encouraging the creation and disclosure of new, useful, and nonobvious advances in technology and design in return for the exclusive right to practice the invention for a period of years.”).

²³ For a comprehensive, but dated, review of economic thought on the patent system, see FRITZ MACHLUP, AN ECONOMIC REVIEW OF THE PATENT SYSTEM 22–44 (Study No. 15 of the Subcomm. on Patents, Trademarks, and Copyrights of the Senate Comm. on the Judiciary, 85th Cong., 2d sess., 1958). For a recent review, see Adam Karbowski & Jacek Prokop, *Controversy Over the Economic Justifications for Patent Protection*, 5 *PROCEDIA ECON. & FIN.* 393 (2013).

²⁴ CLARK, *supra* note 11, at 366.

their gains is the one who makes money; and the system which gave a man no control over the use of his inventions would result in a rivalry in waiting for others rather than an effort to distance others in originating improvements. This fact affords a justification for one variety of monopoly. The inventor in any civilized state is given an exclusive right to make and sell an economical appliance for a term of years that is long enough to pay him for perfecting it and to pay others for introducing it. Patents stimulate improvement, and the general practice of the nations indicates their recognition of this fact.²⁵

Clark observed that patents act as both a shield and a sword in the competitive arena:

While a patent may sometimes sustain a powerful monopoly it may also afford the best means of breaking one up. Often have small producers, by the use of patented machinery, trenched steadily on the business of great combinations, till they themselves became great producers, secure in the possession of a large field and abundant profit.²⁶

This is not to say that the stream of new inventions would dry up without patent protection. The authors of the classic study, *The Sources of Invention*, stressed the variety of paths taken by inventions.²⁷ Major inventions sometimes are made without incurring large costs; secrecy sometimes is preferred to disclosure; and imitation sometimes is difficult. But patent protection certainly attracts resources into research and development, which is bound to increase the pace of invention. Nevertheless, some economists doubt that patents do much to increase the pace of invention,²⁸ and others

²⁵ *Id.* at 360. Irving Fisher, who has been called the greatest economist the United States ever produced, similarly explained that, when a “business involves a large sunk cost,” the fear of imitative competition will cause firms to “avoid sinking capital in the enterprise” and that it “is largely in recognition of this fact and in order to encourage such investment that patents and copyrights are given.” IRVING FISHER, *ELEMENTARY PRINCIPLES OF ECONOMICS* 331 (1912). And the magnum opus of libertarian icon Ludwig von Mises argued that “inventors . . . and authors . . . are burdened with the costs of production, while the services of the product they have created can be gratuitously enjoyed by everybody . . . If there are neither copyrights nor patents, the inventors and authors . . . have the chance to earn profits [only] in the time interval until . . . the invention or the content of the book are publicly known.” LUDWIG VON MISES, *HUMAN ACTION: A TREATISE ON ECONOMICS* 657 (Scholars Edition 1998) (1949).

²⁶ CLARK, *supra* note 11, at 367–68.

²⁷ See generally JOHN JEWKES, DAVID SAWERS & RICHARD STILLERMAN, *THE SOURCES OF INVENTION* (2d ed. 1969).

²⁸ Empirical evidence cited in Section IV of this chapter typically does not find that patents promote innovation.

argue that aspects of the patent system have the opposite effect.²⁹

III. THE PATENT-ANTITRUST INTERSECTION

In the mid-20th Century, patent and antitrust law generally were understood to work at cross purposes. The Supreme Court rationalized the two bodies of law by reading patent law to create a statutory antitrust exemption,³⁰ which like all antitrust exemptions was construed narrowly.³¹ The Supreme Court explained that: “The patent laws . . . are *in pari materia* with the antitrust laws and modify them *pro tanto*.”³² But a modern view of the patent-antitrust intersection emerged with the work of Ward Bowman. His influential 1970s monograph began by explaining:

Antitrust and patent law are frequently viewed as standing in diametric opposition. How can there be compatibility between antitrust law, which promotes competition, and patent law, which promotes monopoly? In terms of the economic goals sought, the supposed opposition between these laws is lacking. Both antitrust law and patent law have a common economic goal: *to maximize wealth by producing what consumers want at the lowest cost*.³³

Although the Supreme Court has not yet adopted the modern view,³⁴ the Federal Circuit, which exercises exclusive jurisdiction over patent appeals, did so in the 1980s: “The patent system, which antedated the Sherman Act by a century, is not an ‘exception’ to the antitrust laws, and patent rights are not legal monopolies in the antitrust sense of

²⁹ See, e.g., Joseph E. Stiglitz, *Economic Foundations of Intellectual Property Rights*, 57 DUKE L.J. 1693 (2008).

³⁰ See *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 177 (1965) (a patent “is an exception to the general rule against monopolies” (quoting *Precision Instrument Mfg. Co. v. Auto. Maint. Mach. Co.*, 324 U.S. 806, 816 (1945)); *United States v. Line Material Co.*, 333 U.S. 287, 309 (1948) (“The Sherman Act was enacted to prevent restraints of commerce but has been interpreted as recognizing that patent grants were an exception.” (citing *E. Bement & Sons v. Nat’l Harrow Co.*, 186 U.S. 70, 92 (1902))).

³¹ See Brief for the United States as Amicus Curiae Supporting Petitioner at 6, *Gen. Talking Pictures Corp. v. W. Elect. Co.*, 305 U.S. 124 (1938) (No. 38-1) (“A grant of monopoly is an exception to the general law against restraints in trade. As such an exception the patent privilege should be construed strictly.” (capitalization altered)) (brief signed by Solicitor General Robert H. Jackson and Assistant Attorney General Thurman Arnold).

³² *Simpson v. Union Oil Co. of Cal.*, 377 U.S. 13, 24 (1964).

³³ WARD S. BOWMAN, JR., *PATENT AND ANTITRUST LAW* 1 (1973).

³⁴ See *FTC v. Actavis, Inc.*, 570 U.S. 136, 160 (2013) (“A patent carves out an exception to the applicability of antitrust laws.”) (Roberts, C.J., dissenting).

that word.”³⁵ “[T]he aims and objectives of patent and antitrust laws may seem, at first glance, wholly at odds. However, the two bodies of law are actually complementary, as both are aimed at encouraging innovation, industry and competition.”³⁶ The patent-antitrust intersection is the locus of tension in antitrust law, but it is the inherent tension between static and dynamic competition, and between static and dynamic economic efficiency.

A patent holder normally requires no exception from Section 2 of the Sherman Act because it prohibits neither monopoly nor charging monopoly prices. As Justice Scalia explained:

The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system. The opportunity to charge monopoly prices—at least for a short period—is what attracts “business acumen” in the first place; it induces risk taking that produces innovation and economic growth. To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive conduct.³⁷

And patent licensing does not offend Section 1 of the Sherman Act just by failing to create competition. Judge William Howard Taft explained in 1898 that, “to promote the free purchase and sale of property,” the common law permitted a man to guard against an “increase of competition of his own creating.”³⁸ Antitrust law has operated on much the same principle: Only conduct that harms the competitive process can be redressed.³⁹

³⁵ *Am. Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1367 (Fed. Cir. 1984).

³⁶ *Atari Games Corp. v. Nintendo of Am., Inc.*, 897 F.2d 1572, 1576 (Fed. Cir. 1990).

³⁷ *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004).

³⁸ *United States v. Addyston Pipe & Steel Co.* 85 F. 271, 281 (6th Cir. 1898).

³⁹ See *NYNEX Corp. v. Discon, Inc.*, 525 U.S. 128, 135 (1998) (holding that, even in a per se case, a plaintiff “must allege and prove harm, not just to a single competitor, but to the competitive process, *i.e.*, to competition itself”); GREGORY J. WERDEN, *THE FOUNDATIONS OF ANTITRUST: EVENTS, IDEAS, AND DOCTRINES* 249 (2020) (“The [Supreme] Court has always articulated and applied the rule of reason in a manner that makes the dispositive issue the impact of the conduct on the competitive process, not the impact of the conduct on concrete measures of market performance.”). See also *Geneva Pharm. Tech. Corp. v. Barr Labs. Inc.*, 386 F.3d 485, 489 (2d Cir. 2004) (“The antitrust laws, however, safeguard consumers by protecting the competitive process.”); *Clamp-All Corp. v. Cast Iron Soil Pipe Inst.*, 851 F.2d 478, 486 (1st Cir. 1988) (Breyer, J.) (antitrust law reserves the label “anticompetitive” for “actions that harm the competitive process”).

The “antitrust laws do not negate the patentee’s right to exclude others from patent property.”⁴⁰ As explained by the Federal Circuit in *CSU, L.L.C. v. Xerox Corp.*, a patent infringement action can give rise to an antitrust claim only if “the asserted patent was obtained through knowing and willful fraud” or if “the infringement suit was a mere sham to cover what is actually no more than an attempt to interfere directly with the business relationships of a competitor.”⁴¹ An antitrust scholar protested that the Federal Circuit’s “approach prevents antitrust from playing any legitimate role in the attempt to increase welfare.”⁴² But it was not the Federal Circuit’s approach that did that: Antitrust law never empowered courts to do whatever might increase welfare.

Although a “patent empowers the owner to exact royalties as high as he can negotiate with the leverage of that monopoly[],”⁴³ holders of standard essential patents contract away that power when they commit to license on FRAND (fair, reasonable, and non-discriminatory) terms. A FRAND commitment can be enforced by standards implementers as third-party beneficiaries to the contract,⁴⁴ and breaching a FRAND commitment does not violate antitrust law.⁴⁵ Antitrust law protects the competitive process, and breaching a FRAND commitment normally harms no competitive process.⁴⁶

⁴⁰ *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1362 (Fed. Cir. 1999). *See Schering-Plough Corp. v. FTC*, 402 F.3d 1056, 1067 (11th Cir. 2005) (“a patent holder does not incur antitrust liability when it chooses to exclude others from producing its patented work”); *Abbott Labs. v. Brennan*, 952 F.2d 1346, 1354 (Fed. Cir. 1991) (“The commercial advantage gained by new technology and its statutory protection by patent do not convert the possessor thereof into a prohibited monopolist.”).

⁴¹ *In re Indep. Service Org. Antitrust Litig.*, 203 F.3d 1322, 1326 (Fed. Cir. 2000) (citation omitted).

⁴² Michael A. Carrier, *Unraveling the Patent-Antitrust Paradox*, 150 U. PA. L. REV. 761, 778 (2002).

⁴³ *Brulotte v. Thys Co.*, 379 U.S. 29, 33 (1964). *See United States v. General Electric Co.*, 272 U.S. 476, 489 (1926) (Taft, C.J.) (“the patentee may grant a license to make, use and vend articles under the specifications of his patent for any royalty”).

⁴⁴ *See Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1033 (9th Cir. 2015).

⁴⁵ *See FTC v. Qualcomm Inc.*, __ F.3d __, __ [slip at 39] (9th Cir. 2020) (referring to “the general rule that breaches of [FRAND] commitments do not give rise to antitrust liability”); Gregory J. Werden & Luke M. Froeb, *Why Patent Hold-Up Does Not Violate Antitrust Law*, 27 TEX. INTELL. PROP. L.J. 1 (2019).

⁴⁶ The Third Circuit recognized the possibility of Sherman Act Section 2 liability when an implementer can prove that a patent holder made an “intentionally false promise” to license on FRAND terms, the standard-

The D.C. Circuit rejected the FTC's contention that deception to avoid a FRAND commitment was anticompetitive conduct even absent any impact on competition among technologies,⁴⁷ and no circuit has held to the contrary.

IV. ECONOMIC INSIGHTS ON INNOVATION AND PATENTS

Kenneth Arrow analyzed the incentive to invest in an innovation that reduces the marginal cost of production. He showed that a monopolist completely protected from competition and unable to price discriminate in the sale of its product would innovate less than is socially optimal.⁴⁸ The monopolist would have too little incentive to invest for the simple reason that it produces less than the socially optimal quantity, which concomitantly reduces the benefit of a reduction in unit production cost.

Richard Gilbert and David Newbery analyzed a stylized innovation competition between a potential entrant and a monopoly incumbent producer that owns the current technology.⁴⁹ They bid against each other to acquire a patent for a new technology that reduces marginal cost. If the incumbent wins the auction, it remains a monopoly producer; if the potential entrant wins the auction, it becomes the lower-cost producer in a duopoly market. Gilbert and Newbery showed that the monopolist will outbid the potential entrant and introduce the new technology to preempt duopoly competition.

The foregoing results highlight the two opposing forces that drive the relationship between monopoly and innovation. Monopoly profits provide an incentive for a

setting organization relied on the promise, and the patent holder breached the promise. *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 314 (3d Cir. 2007). But these conditions are not met as long as it is plausible that the patent holder believed the FRAND royalty was a high royalty. Moreover, all the elements of a Section 2 case must be established, which means that the plaintiff must prove that a good alternative for the patent holder's technology was available when the standard was set.

⁴⁷ *Rambus Inc. v. FTC*, 522 F.3d 456 (D.C. Cir. 2008).

⁴⁸ Arrow, *supra* note 3, at 619–22.

⁴⁹ Richard J. Gilbert & David Newbery, *Preemptive Patenting and the Persistence of Monopoly*, 72 AM. ECON. REV. 514 (1982). For a similar preemption result, see Partha Dasgupta & Joseph Stiglitz, *Uncertainty, Industrial Structure, and the Speed of R&D*, 11 BELL J. ECON. 1, 13–14 (1980).

monopolist to innovate when necessary to retain the monopoly, but the output reduction due to monopoly creates a disincentive for innovation by a monopolist. Depending on the precise question posed and assumptions made, monopoly can be said either to enhance or retard innovation.

Jennifer Reinganum analyzed oligopolistic competition through uncertain research and development, assuming that a successful innovator captured a large share of the market.⁵⁰ With perfect patent protection, she showed that increasing the number of symmetric firms competing to innovate increased not just the total investment in research and development, but also each firm's investment. With imperfect patent protection, which allows imitators to appropriate some of the value of an innovation, she found that the effect of increased competition on innovation was ambiguous.⁵¹

The patent system raises many policy issues, and economic theory offers insights on all of them. The most important issue might be what should be patentable, and on that question, economic theory has the least to say. The main economic insight is that patents should be granted only when necessary to generate the investment needed to produce an invention.⁵² This insight is consistent with patent law's nonobviousness requirement.⁵³

⁵⁰ Jennifer F. Reinganum, *A Dynamic Game of R and D: Patent Protection and Competitive Behavior*, 50 *ECONOMETRICA* 671 (1982). For a similar analysis, see Tom Lee & Louis L. Wilde, *Market Structure and Innovation: A Reformulation*, 94 *Q.J. ECON.* 429 (1980).

⁵¹ Other researchers analyzed asymmetric models in which knowledge gained from past research effort affected current investment. Many outcomes were found to be possible. See Drew Fudenberg et al., *Preemption, Leapfrogging and Competition in Patent Races*, 22 *EUR. ECON. REV.* 3 (1983); Ulrich Doraszelski, *An R&D Race with Knowledge Accumulation*, 34 *RAND J. ECON.* 19 (2003).

⁵² See Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 *J.L. & ECON.* 265, 280–84 (1977).

⁵³ See 35 U.S.C. § 103(a) ("A patent for a claimed invention may not be obtained . . . if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains."); *KSR Int'l Co v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) ("When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices

Economic theory has had more to say about patent length and breadth, but as is so often is the case, economics shows that the best policy depends on the circumstances, so patent length and breadth should differ for different inventions.⁵⁴ For example, William Nordhaus showed that optimal patent length for processes is greater for inventions that drastically lower cost than for inventions that marginally lower costs,⁵⁵ and Paul Klemperer argued that the optimal trade-off between length and breadth of utility patents depends on the degree of heterogeneity in willingness of consumers to substitute to alternatives outside the scope of the patent.⁵⁶

A large economics literature has empirically examined the inter-industry relationship between market structure and either the inputs to innovation (e.g., research and development expenditures) or indicia of innovative output (e.g., patents). Although the studies could not observe innovation directly, they generally claimed support for the “inverted-U” hypothesis, i.e., that innovation is greatest with moderate market concentration, while the most and least concentrated market structures exhibit less innovation.⁵⁷ Recent studies of innovation within a single industry over time have avoided some of the problems inherent in the prior inter-industry studies, and they found

in the same way, using the technique is obvious unless its actual application is beyond his or her skill.”).

⁵⁴ See Lawrence M. DeBrock, *Market Structure, Innovation and Optimal Patent Life*, 28 J. L. & ECON. 223 (1985). Richard J. Gilbert & Carl Shapiro, *Optimal Patent Length and Breadth*, 21 RAND J. ECON. 106 (1990); Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839 (1990); Ted O'Donoghue, Suzanne Scotchmer & Jacques-François Thisse, *Patent Breadth, Patent Life, and the Pace of Technological Progress*, 7 J. ECON. & MGMT. STRATEGY 1 (1998); Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. ECON. PERSP. 29 (1991).

⁵⁵ See William D. Nordhaus, *The Optimal Life of a Patent: Reply*, 62 AM. ECON. REV. 428 (1972).

⁵⁶ See Paul Klemperer, *How Broad Should the Scope of Patent Protection Be?*, RAND J. ECON. 113 (1990).

⁵⁷ For reviews of this literature to 1990, see F.M. SCHERER & DAVID ROSS, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 644–57 (3d ed. 1990); Wesley M. Cohen & Richard C. Levin, *Empirical Studies of Innovation and Market Structure*, in 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 1059 (Richard Schmalensee & Robert D. Willig, eds. 1989). For a more recent contribution, see Philippe Aghion et al., *Competition and Innovation: An Inverted-U Relationship*, 120 Q.J. ECON. 701 (2005).

that mergers reduced innovation.⁵⁸ Recent research garnering much publicity concludes that 5.3–7.4% of pharmaceutical mergers are “killer acquisitions” that cause the drugs in Phase I development not to proceed to Phase II.⁵⁹

Economists have employed several notable surveys to investigate aspects of the patent system. A survey conducted by Edwin Mansfield in the early 1980s asked respondents what percentage of their new products would not have been developed absent patent protection.⁶⁰ He found that the percentage varied from 60% in pharmaceuticals and 38% in chemicals down to 0% in several industries. Contemporaneously, a survey conducted by Yale economists also found that the importance of patents varied greatly across industries, and it found that first-mover advantages were the most important means, overall, for appropriating the value of innovation.⁶¹

Roughly a decade later, Carnegie Mellon researchers got the same general findings as the Yale economists using an improved survey methodology.⁶² The Carnegie Mellon

⁵⁸ See, e.g., Justus Haucap, Alexander Rasch & Joel Stiebale, *How Mergers Affect Innovation: Theory and Evidence*, 63 INT’L J. INDUS. ORG. 283 (2019) (examining the impact of pharmaceutical mergers); Mitsuru Igami & Kosuke Uetake, *Mergers, Innovation, and Entry-Exit Dynamics: Consolidation of the Hard Disk Drive Industry, 1996–2016*, REV. ECON. STUD. (forthcoming). Experimental evidence points in the same direction. See Philippe Aghion et al., *The Causal Effects of Competition on Innovation: Experimental Evidence*, 34 J.L., ECON. & ORG. 162 (2018).

⁵⁹ Colleen Cunningham, Florian Ederer & Song Ma, *Killer Acquisitions*, J. POL. ECON. (forthcoming), <https://ssrn.com/abstract=3241707>. As a result of this paper, “killer acquisitions” became a hot topic in antitrust, for example, the subject of a June 2020 session of the OECD’s Competition Committee. See Amelia Fletcher, Colleen Cunningham, Erik Hovenkamp, & Wim Holterman, OECD Policy Panel: Start-Ups, Killer Acquisitions, & Merger Control (June 11, 2020), <http://www.oecd.org/daf/competition/start-ups-killer-acquisitions-and-merger-control.htm>. See also John M. Yun, *Potential Competition, Nascent Competitors, and Killer Acquisitions*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁶⁰ Edwin Mansfield, *Patents and Innovation: An Empirical Study*, 32 MGMT. SCI. 173 (1986).

⁶¹ Richard C. Levin et al., *Appropriating the Returns from Industrial Research and Development*, 3 BROOKINGS PAPERS ON ECON. ACTIVITY (MICROECONOMICS) 783 (1987).

⁶² Wesley M. Cohen, Richard R. Nelson, & John P. Walsh, *Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (or Not)* (NBER Working Paper No. 7552, Feb. 2000), <https://nber.org/w7552>.

researchers, however, found that patents had become more important since the Yale survey, and they found that the importance of secrecy had increased even more than the importance of patents. A 2008 survey conducted by researchers at Berkeley found similar results for high-technology start-ups, although those firms viewed patents as more important than the large firms previously surveyed.⁶³

A review of the surveys and other economic literature concluded that the most robust findings were that the use of patents is highly heterogeneous across industries and that patents were most important in the pharmaceutical and chemical industries.⁶⁴ Another robust finding was that firms in nearly all other industries rely more on informal protection mechanisms, especially first-mover advantages. In addition, firms treat various protection mechanisms as complementary and use multiple methods.

Economists have used a variety of methods to determine whether patent protection actually encourages innovation. Petra Moser focused on technology exhibitions beginning with London's 1851 Great Exhibition in the Crystal Palace.⁶⁵ She found that relatively few of the inventions on display were patented, and that countries without patent protection contributed many prize-winning inventions. On the other hand, she also found evidence that inventive activity in countries without patent protection was concentrated in industries that did not rely on patents for appropriability. She also found that late 19th Century advances in chemistry had made reverse engineering easy in the chemical industry and thus made patent protection important.⁶⁶

⁶³ Stuart J.H. Graham et al., *High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkeley Patent Survey*, 24 BERKELEY TECH. L.J. 1255 (2009).

⁶⁴ Bronwyn Hall et al., *The Choice between Formal and Informal Intellectual Property: A Review*, 52 J. ECON. LITERATURE 375 (2014).

⁶⁵ Petra Moser, *Patents and Innovation: Evidence from Economic History*, 27 J. ECON. PERSP. 23 (2013); Petra Moser, *How Do Patent Laws Influence Innovation? Evidence from Nineteenth-Century World's Fairs*, 95 AM. ECON. REV. 1214 (2005).

⁶⁶ Petra Moser, *Innovation without Patents: Evidence from World's Fairs*, 55 J.L. & ECON. 43 (2012).

Economists also have used cross-country comparisons to examine the impact of increased patent protection. Josh Lerner examined changes in the rate of patent applications associated with 177 changes in patent protection across 60 countries and 150 years.⁶⁷ He found that stronger patent protection had not increased patenting, and he concluded that reason could be measurement problems and could be an absence of a direct link between patent protection and invention. Yi Qian looked only at the pharmaceutical industry, in which patents were known to be important. Using patent citations to weight their significance, she found no effect when a country introduced patent protection.⁶⁸

One controversy in patent policy is whether the disclosure function of the patent system works as intended, and some legal scholars have argued that it does not.⁶⁹ Survey evidence, however, finds that patents are an important source of information for U.S. inventors,⁷⁰ especially in biotechnology and chemistry.⁷¹ In addition, Deepak Hegde and Hong Luo found that accelerating disclosure under the 1999 American Inventors Protection Act (AIPA) caused biomedical patents to be licensed, on average, ten months sooner.⁷² Deepak Hegde, Kyle Herkenhoff, and Chnqi Zhu estimated that the AIPA

⁶⁷ Josh Lerner, *The Empirical Impact of Intellectual Property Rights on Innovation: Puzzles and Clues*, 99 AM. ECON. REV. 343 (2009).

⁶⁸ Yi Qian, *Do National Patent Laws Stimulate Domestic Innovation in a Global Patenting Environment? A Cross-Country Analysis of Pharmaceutical Patent Protection, 1978–2002*, 89 REV. ECON. & STAT. 436 (2007).

⁶⁹ Jeanne C. Fromer, *Patent Disclosure*, 94 IOWA L. REV. 539 (2009); Benjamin N. Roin, *The Disclosure Function of the Patent System (or Lack Thereof)*, 118 HARV. L. REV. 2007 (2005).

⁷⁰ Wesley M. Cohen et al., *R&D Spillovers, Patents and the Incentives to Innovate in Japan and the United States*, 31 RES. POL'Y 1349, 1363 (2002) (49% of U.S. survey respondents reported that patents were “moderately” or “very” important as a source of information for recent research and development projects).

⁷¹ Lisa L. Ouellete, *Who Reads Patents?*, 35 NATURE BIOTECH. 421 (2017).

⁷² Deepak Hegde & Hong Luo, *Patent Publication and the Market for Ideas*, 64 MGMT. SCI. 495 (2018). As observed in note 18, under the AIPA, patent applications normally are published 18 months after filing. Previously, applications were kept secret, and patents were published when issued, which on average took about two years longer than the current 18-month lag.

caused patenting and research and development investment to increase by about 6%.⁷³ Current research finds that the government's program to establish a Patent and Trademark Depository Library in each state led to a substantial increase in patenting,⁷⁴ and that temporary secrecy during World War II reduced follow-on innovation.⁷⁵

Another controversy in patent policy is whether, on balance, patents enhance or retard follow-on innovation. Michael Heller and Rebecca Eisenberg gained notoriety by asserting that a proliferation of biomedical patents resulted in splintered and overlapping ownership rights effectively preventing researchers from standing on anyone's shoulders, and by dubbing this as the "anticommons."⁷⁶ Recent contributions to the debate have observed that voluntary cooperation often avoids the anticommons problem.⁷⁷ In addition, survey evidence indicates that patents are less a hinderance in biomedical research than access to cell lines, reagents, and unpublished information.⁷⁸ Empirical research by Bhaven Sampat and Heidi Williams found that gene patents had no impact on follow-on innovation.⁷⁹

⁷³ Deepak Hegde, Kyle Herkenhoff, & Chenqi Zhu, Patent Publication and Innovation (unpublished paper, June 8, 2020), <https://ssrn.com/abstract=3158031>.

⁷⁴ Jeffrey L. Furman, Markus Nagler & Martin Watzinger, Disclosure and Subsequent Innovation: Evidence from the Patent Depository Library Program (NBER Working Paper No. 24660, May 2018), <https://nber.org/papers/w24660>.

⁷⁵ Daniel P. Gross, The Consequences of Invention Secrecy: Evidence from the USPTO Patent Secrecy Program in WWII (NBER Working Paper No. 25545, Feb. 2020), <https://nber.org/papers/w25545>.

⁷⁶ Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCI. 698 (1998).

⁷⁷ See, e.g., Jonathan M. Barnett, *The Anti-Commons Revisited*, 29 HARV. J.L. & TECH. 127 (2015); Jorge L. Contreras, *The Anticommons at Twenty: Concerns for Research Continue*, 361 SCI. 335 (2018); Charles R. McManis & Brian Yagi, *The Bayh-Dole Act and the Anticommons Hypothesis: Round Three*, 21 GEO. MASON L. REV. 1049 (2014).

⁷⁸ John P. Walsh, Wesley M. Cohen & Charlene Cho, *Where Excludability Matters: Material versus Intellectual Property in Academic Biomedical Research*, 36 RES. POL'Y 1184 (2007); see also Heidi L. Williams, *Intellectual Property Rights and Innovation: Evidence from the Human Genome*, 121 J. POL. ECON. 1 (2013) (Celera, a leader in sequencing the human genome, limited the disclosure of its data, and that reduced subsequent scientific research and product development roughly 20–30%).

⁷⁹ Bhaven Sampat & Heidi L. Williams, *How Do Patents Affect Follow-On Innovation? Evidence from the Human*

Controversy over whether patents enhance or retard follow-on invention is not limited to biomedical patents. Some scholars have argued that “patent thickets” in other industries frustrate product market competition and innovation.⁸⁰ However, an analysis of patent litigation data by Alberto Galasso and Mark Schankerman found that patent thickets were associated with more rapid resolution of litigation, although that effect was diminished substantially by the 1982 creation of the Federal Circuit and the resulting strengthening of patent rights.⁸¹ In later work, Galasso and Schankerman found that the Federal Circuit’s invalidation of patents increased citations to the invalidated patents in subsequent patents, although only in computers and communications, electronics, and medical devices.⁸² Thus, those industries might have problematic patent thickets.

V. INVENTORS’ FAIR SHARE

Patent royalties are negotiated in the shadow of possible infringement litigation, as anyone found to have infringed a valid patent is ordered to pay damages that are no less than a reasonable royalty.⁸³ In addition, courts sometimes determine what does, or does not, constitute a reasonable royalty in litigation arising under FRAND commitments. In this later context, courts have tended to take a “top down” approach by first determining an appropriate aggregate percentage royalty for all patents practiced in implementing a standard.⁸⁴ We analyze the closely related problem of how inventors and

Genome, 109 AM. ECON. REV. 203 (2019).

⁸⁰ E.g., Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools and Standard Setting*, in 1 INNOVATION POLICY AND THE ECONOMY 119 (Adam B. Jaffe, Josh Lerner & Scott Stern, eds. 2001).

⁸¹ Alberto Galasso & Mark Schankerman, *Patent Thickets, Courts, and the Market for Innovation*, 41 RAND J. ECON. 472 (2010).

⁸² Alberto Galasso & Mark Schankerman, *Patents and Cumulative Innovation: Causal Evidence from the Courts*, 130 Q.J. ECON. 317 (2015).

⁸³ See 35 U.S.C. § 284 (“Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer . . .”).

⁸⁴ See *TCL Commc’n Tech. Holdings Ltd. v. Telefonaktiebolaget LM Ericsson*, 943 F.3d 1360, 1367–69 (Fed.

implementers divide the joint gain or “surplus” from their licensing agreements. Any such division could be implemented through a percentage royalty.⁸⁵

It might make sense for all of the inventors and implementers associated with a standard to agree on royalties before a standard is set, but they do not.⁸⁶ Nor do standard setting organizations provide a forum for later discussions of royalties or the fair division of the gains from implementing technology subject to a standard. One reason that inventors and implementers do not all negotiate collectively is the risk of an antitrust suit alleging a Sherman Act violation. A judge might (wrongly) construe the joint negotiations as per se illegal price fixing.

Cooperative game theory offers solutions to the problem of fairly allocating a surplus generated by cooperation, and one such solution presumably would be the outcome of all-inclusive royalty negotiations. The only solution having certain reasonable properties is the Shapley Value,⁸⁷ which gives each party a share of the surplus proportional to that party’s marginal contribution to the surplus. What this means can be seen through a simple example involving an inventor, A, and two symmetric licensees, M₁ and M₂—manufactures implementing the invention.

To make matters concrete, we use a numerical example in which licensing both manufacturers produces a surplus of 100, which derives from profitable sales of their

Cir. 2019).

⁸⁵ Real-world patent licenses normally set the royalty as a percentage of a royalty base, which typically is gross sales revenue for products embodying the licensed patents. To simplify matters, assume that the patent and any product implementing it have the same life span. Implementing a given division of the surplus through a percentage royalty, then, first requires determining the ratio of the surplus (i.e., sales revenue net of manufacturing and distribution costs) to the royalty base. That ratio is then multiplied by an inventor’s share of the surplus to yield that inventor’s percentage royalty.

⁸⁶ Exceptions to this general rule are standard setting organizations that insist on royalty-free licensing. For more on Standard Setting Organizations, see Joanna Tsai, *Standard Setting Organizations, Intellectual Property, and Standardization: Fundamentals and Recent Proposals*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁸⁷ See Lloyd S. Shapley, *A Value for n-Person Games*, in CONTRIBUTIONS TO THE THEORY OF GAMES 307 (Harold W. Kuhn & Albert W. Tucker, eds. 1953).

products. If the manufacturers' products are perfect substitutes, licensing either of them also generates the full surplus of 100, and if the manufacturers' products are not substitutes at all, licensing either of them generates a surplus of 50, as an implication of the symmetry assumption. We consider two intermediate cases: With "close substitutes," licensing either M_1 or M_2 generates a surplus of 80, and with "weak substitutes," licensing either M_1 or M_2 generates a surplus of 60.

Table 1 computes the Shapley Values for these two cases. The marginal contributions are defined by imagining that the parties act in sequence and attributing the full surplus from an agreement to whichever party to the agreement comes later in the sequence and thus makes the agreement possible. Consider the sequence A, M_1 , M_2 : With A coming first, it makes no contribution because no surplus is generated unless A reaches agreement with one of the manufacturers. With M_1 coming after A, it makes the first agreement possible and thus makes a marginal contribution of 80 with close substitutes and 60 with weak substitutes. With M_2 coming last, it makes a smaller marginal contribution of 20 or 40 by making the second agreement possible. The Shapley Value of the game is the arithmetic mean of the marginal contributions of the three parties over all possible sequences, as shown in the last row of Table 1.

Table 1
Shapley Values with
One Inventor and Two Implementers

Sequence	Marginal Contributions with Close Substitutes			Marginal Contributions with Weak Substitutes		
	A	M_1	M_2	A	M_1	M_2
A, M_1 , M_2	0	80	20	0	60	40
A, M_2 , M_1	0	20	80	0	40	60
M_1 , A, M_2	80	0	20	60	0	40
M_1 , M_2 , A	100	0	0	100	0	0
M_2 , A, M_1	80	20	0	60	40	0
M_2 , M_1 , A	100	0	0	100	0	0
Shapley Value	60	20	20	$53 \frac{1}{3}$	$23 \frac{1}{3}$	$23 \frac{1}{3}$

The Shapley Value was proposed as a solution to a cooperative game, but real-world inventors and implementers do not engage in multilateral bargaining.⁸⁸ It turns out, however, that the Shapley Value is a solution to some noncooperative games with bilateral bargaining.⁸⁹ We will return to the Shapley Value after exploring the economic theory of noncooperative bilateral bargaining. This theory was pioneered by John F. Nash, Jr.,⁹⁰ and its central teaching is the maxim—“the alternatives to agreement determine the terms of agreement.” To get its fair share of the surplus, each party threatens to walk away from the bargaining table. The potency of a party’s threat is determined by its best alternative to reaching agreement, and both parties are assumed to be fully informed about the alternatives and associated payoffs. Each party’s payoff absent the agreement under negotiation is its “threat point.”

To illustrate how the threat points affect the terms of agreement, we posit an inventor that can generate a profit of 40 by implementing an invention itself. The inventor’s threat point, thus, is 40. We also posit a manufacturer that cannot produce a product implementing the invention without a license, nor can it use freely available technology to produce a close substitute. The manufacturer’s threat point, thus, is 0. Finally, we posit that the manufacturer can generate a profit of 100 (before royalties) by

⁸⁸ Multilateral bargaining to determine patent royalties is analyzed by David J. Salant, *Formulas for Fair, Reasonable, and Non-Discriminatory Royalty Determination*, 7 INT’L J. IT STANDARDS & STANDARDIZATION RES. 66 (2009); Anne Layne-Farrar, A. Jorge Padilla, & Richard Schmalensee, *Pricing Patents in Standard-Setting Organizations: Making Sense of FRAND Commitments*, 74 ANTITRUST L.J. 671 (2007).

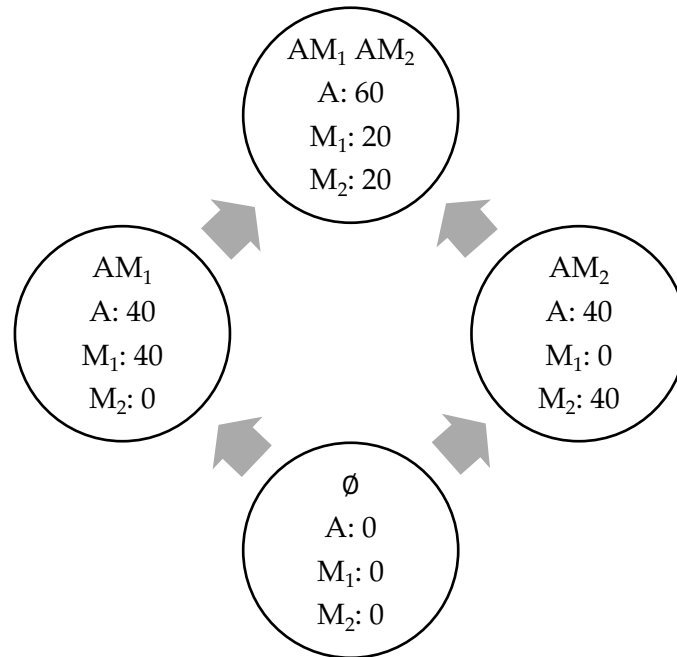
⁸⁹ See Roman Inderst & Christian Wey, *Bargaining, Mergers, and Technology Choice in Bilaterally Oligopolistic Industries*, 34 RAND J. ECON. 1 (2003); Noemí Navarro & Andres Perea, *A Simple Bargaining Procedure for the Myerson Value*, 13 B.E. J. THEORETICAL ECON. 131 (2013); Luke M. Froeb, Vladimir Mares & Steven T. Tschantz, *Nash-in-Shapley: Bilateral Bargaining with Recursive Threat Points* (unpublished) (June 9, 2019), <https://ssrn.com/abstract=3304179>; Xiaowei Yu & Keith Waehrer, *Recursive Nash-in-Nash Bargaining Solution* (unpublished) (Feb. 3, 2019), <https://ssrn.com/abstract=3319517>.

⁹⁰ See John Nash, *Two-Person Cooperative Games*, 21 ECONOMETRICA 128 (1953); John Nash, *The Bargaining Problem*, 18 ECONOMETRICA 155 (1950).

implementing the invention under a license. As compared with the threat points, agreement between the two parties generates an incremental surplus of 60. Nash bargaining theory predicts that the surplus is divided equally, and the inventor also gets the 40 it earns absent agreement. Thus, the manufacturer pays the inventor 70 out of the proceeds from selling the patented product and retains a net profit of 30.

Externalities complicate bargaining when the surplus generated by one agreement serves as a threat point for other agreements, as often is true with technology licensing. To account for externalities, economists have developed generalizations of Nash bargaining theory. We apply what was dubbed the Nash-in-Shapley solution in which the parties enter into bilateral agreements that give the parties the Shapley Value. The agreements emerge from “bargaining competition,” in which inventors have the opportunity to enter into bilateral agreements with some but not necessarily all potential implementers, and in which implementers have the opportunity to enter into bilateral agreements with some but not necessarily all inventors.

The process of bargaining competition is in equilibrium when every inventor and every implementer is happy about which agreements it has entered into and as to their terms, in view of all other actual or potential agreements. Economic theory does not specify a dynamic process through which equilibrium is reached, but we can imagine that all agreements are subject to renegotiation and that the parties iterate to equilibrium. Alternatively, we can imagine that the parties reach equilibrium in one step by negotiating bilateral contingent contracts that specify distinct terms for each possible set of other bilateral agreements that could be reached.



Using the diagram above,⁹¹ we now reexamine the scenario analyzed in Table 1 through the lens of bargaining competition, and we first consider the close substitutes case. The bottom circle represents the absence of agreement, signified by the symbol for the null set, \emptyset . Each party gets 0. The arrows emanating from the bottom circle reflect that it is the threat point for the two agreements at the next level above. Agreement between A and M_1 , signified AM_1 , is represented by the left circle, and agreement between A and M_2 , signified AM_2 , is represented by the right circle. With either agreement, the parties reaching agreement equally split the surplus of 80. The top circle represents A reaching agreement with both manufacturers. As A bargains with M_2 , the left circle is the threat point, and as A bargains with M_1 , the right circle is the threat point, both as indicated by the top two arrows. In both threat points, A gets 40 more than the manufacturer with which it is bargaining, so the payoffs when both agreements are reached must satisfy $A = M_1 + 40 = M_2 + 40$. The parties divide the total surplus of 100, which provides a third equation that must hold in equilibrium: $A + M_1 + M_2 = 100$. The solution is the Shapley

⁹¹ The diagram is from Froeb, Mares & Tschantz, *supra* note 89.

Value: $A = 60$, $M_1 = M_2 = 20$.

In the weak substitutes case, the surplus generated by a single agreement is 60, and the marginal surplus from a second agreement is 40. With the manufacturers' products being weaker substitutes, the inventor's threat point is just 30 (half of 60). The equations that must be solved for the equilibrium payoffs are $A = M_1 + 30 = M_2 + 30$ and $A + M_1 + M_2 = 100$. The solution again is the Shapley Value: $A = 53 \frac{1}{3}$, $M_1 = M_2 = 23 \frac{1}{3}$. The main insight from the two forgoing examples is that the inventor benefits from competition among implementers, and the intensity of that competition relates to both the number of implementors and the substitutability of their products in the downstream market.

Now, consider the case of two complementary inventors, A and B, bargaining with one implementer, M, and assume that inventors cannot themselves produce a marketable product. The analysis of this case is simple because the technologies are strictly complementary; a single agreement between A and M or between B and M has a payoff of 0, just as no agreement. Only the party that comes last in the sequence makes any marginal contribution, so the parties share the joint surplus equally. This means that two-thirds of the surplus goes to the two inventors. This insight can be highly significant in FRAND disputes involving telecommunications technology because multiple parties typically hold complementary standard essential patents.

Table 2
**Shapley Values with Two Inventors
and Two Implementers**

Party	Close Substitutes	Weak Substitutes
A	$38 \frac{1}{3}$	35
B	$38 \frac{1}{3}$	35
M_1	$12 \frac{2}{3}$	15
M_2	$12 \frac{2}{3}$	15

Finally, consider the case of two complementary inventors, A and B, bargaining with manufacturers of substitute products, M_1 and M_2 . Because the inventions are entirely complementary, this case is much like the case of one inventor and two implementers. With the numerical values assumed above, the Shapley Values are shown in Table 2.

Key insights from the foregoing can be seen in Table 3, which recapitulates the proportion of the surplus realized by inventors in all the examples. This proportion increases with the intensity of product market competition among implementers, and it increases with the number of separate inventions that must be licensed to produce a successful product. Critically, the division of the surplus tilts more toward inventors the more of them are needed for successful implementation.

Table 3
Proportion of Surplus Realized by Inventors

Number of Patentees	Number of Licensees	Close Substitutes	Weak Substitutes
1	1	.500	.500
1	2	.600	.533
2	1	.667	.667
2	2	.767	.700

“The purpose of the FRAND requirements . . . is to confine the patentee’s royalty demand to the value conferred by the patent itself as distinct from the additional value—the hold-up value—conferred by the patent’s being designated as standard-essential.”⁹² Thus, a FRAND royalty is the amount that would have been produced in bargaining “just before the patented invention was declared essential to compliance with the industry standard.”⁹³ A theory of bargaining competition could prove useful in disputes over

⁹² *Apple, Inc. v. Motorola, Inc.*, 869 F. Supp. 2d 901, 913 (N.D. Ill. 2012) (Posner, J.) (citing *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 313–14 (3d Cir. 2007)).

⁹³ *Id.*

FRAND licensing commitments, even if calculating the Shapley Value would be challenging because the threat points cannot be observed directly.

A standard essential technology might have had a good substitute when the standard was set. In bargaining competition just before the standard is set, owners of technologies with good substitutes get small shares of the surplus because they make small marginal contributions. If every technology incorporated into a standard had a good substitute, the inventors' aggregate fair share of surplus could be much less than half; however, the inventors' aggregate share would be more than half if any standard essential technology had no good substitutes when incorporated into the standard, and that condition seems likely to hold for most standards.

CONCLUSION

Public policy toward innovation faces a trade-off: Increasing the compensation of successful inventors increases dynamic efficiency by spurring technological progress, but it decreases static efficiency by enlarging a wedge between price and marginal cost. In making this trade-off, public policy is guided by two insights—economic growth is the prime driver of social welfare gains, and technological progress is the prime driver of economic growth. Patent and copyright law, therefore, were designed to help inventors and authors appropriate a significant share of the value of their inventions and writings. Antitrust law neither revokes nor restricts any right granted by patent law, and antitrust law can contribute little in resolving disputes arising from commitments to license on FRAND terms.

Economic theory and empirical research into innovation and the patent system reveal a complex and varied landscape. Two robust conclusions are that too little is invested in innovation and that both the innovation process and the role of patents in the process vary greatly across industries and inventions. Depending on the precise question posed, theory predicts that monopoly can enhance or retard innovation, and data

generally support the hypothesis that both monopolies and unconcentrated markets are relatively inhospitable to innovation. Although patents are critical to innovation in the pharmaceutical and chemical industries, they are unimportant in many industries, and patent protection generally has been found to have no effect on the pace of innovation.

The application of bargaining theory potentially can go a long way toward solving contentious disputes between inventors and implementors on the division of the gains from the introduction of new technologies. In principle, bargaining theory provides a concrete solution to the problem of determining a FRAND royalty, i.e., the royalty that would have come out of bargaining just before a patented invention was incorporated into a standard. The abstract application of bargaining theory in Section V of this chapter suggests that inventors should get most of the gains from introducing new technology, although many commentators have presumed quite the opposite.

The Role of Big Data in Antitrust

John M. Yun*

INTRODUCTION

There is an astounding amount of data generated every moment.¹ While the use of data has always been essential for a well-functioning market economy, the current scale, scope, and speed at which data is collected, organized, and analyzed is unprecedented—leading to the apt label of “big data.”² Importantly, an entire infrastructure has been built around data including cloud computing, machine learning, artificial intelligence, and the 5G wireless network.³

* This chapter builds on a number of prior works including the GAI Comment on The Federal Trade Commission’s Hearings on Competition and Consumer Protection in the 21st Century, Big Data, and Competition, Nov. 5, 2018; the GAI Comment on the Canadian Competition Bureau’s White Paper, “Big Data and Innovation: Implications for Competition Policy in Canada,” Nov. 17, 2017; and John M. Yun, *Antitrust After Big Data*, 4 CRITERION J. ON INNOVATION 407 (2019), which was published with kind permission from the BALTIC Y.B. INT’L L. (forthcoming). I thank Scalia Law student Rachel Burke for excellent research assistance.

¹ See, e.g., *Data Never Sleeps 6.0*, DOMO (2018), <https://www.domo.com/learn/data-never-sleeps-6> (“By 2020, it’s estimated that for every person on earth, 1.7 MB of data will be created every second.”). In 2018, the International Data Corporation (IDC) estimated the global volume of data to be 33 zettabytes, which is equivalent to 33 trillion gigabytes—forecasting it to grow to 175 zettabytes in 2025. DAVID REINSEL, JOHN GANTZ & JOHN RYDNING, *THE DIGITIZATION OF THE WORLD: FROM EDGE TO CORE 6* (2018), <https://www.seagate.com/files/www-content/our-story/trends/files/idc-seagate-dataage-whitepaper.pdf>.

² The phrase “big data” likely first entered the economic lexicon in 2000, when economist Francis Diebold used the term. Francis X. Diebold, *On the Origin(s) and Development of “Big Data”: The Phenomenon, the Term, and the Discipline* 2 (Feb. 13, 2019) (unpublished manuscript), https://www.sas.upenn.edu/~fdiebold/papers/paper112/Diebold_Big_Data.pdf. Regardless of its origin, most definitions of big data are similar to the one provided by the OECD: “Big Data is commonly understood as the use of large scale computing power and technologically advanced software in order to collect, process and analyse data characterised by a large volume, velocity, variety and value.” OECD Directorate for Financial and Enterprise Affairs, Competition Committee, *Big Data: Bringing Competition Policy to the Digital Era* 2, No. DAF/COMP(2016)14 (Nov. 2016), [https://one.oecd.org/document/DAF/COMP\(2016\)14/en/pdf](https://one.oecd.org/document/DAF/COMP(2016)14/en/pdf).

³ See, e.g., OECD, *Private Equity Investment in Artificial Intelligence* 1, Going Digital Policy Note (Dec. 2018), <https://www.oecd.org/sti/ieconomy/private-equity-investment-in-artificial-intelligence.pdf> (“... AI start-ups have so far attracted around 12% of all worldwide private equity investments in the first half of 2018, a steep increase from just 3% in 2011.”).

In this chapter, we discuss the role of big data in antitrust with a particular focus on the rise and success of large digital platforms—as the importance of data has caught the attention of various reports on the digital economy⁴ and also raises issues involving privacy.⁵ We begin with an economic overview of data and what sets it apart from other firm assets. In this discussion, we will also assess the question of whether big data represents a sizeable barrier to entry that hinders the ability of entrants to compete on equal footing.⁶

Next, we discuss data in the context of network effects. While network effects traditionally are associated with a network of people, some have hypothesized that the advantages that data confers to platforms can also be framed as type of network effect. The idea is that data creates a feedback loop of more data, which ultimately results in an impregnable bulwark against competition. We aim to demonstrate that, while there are

⁴ See, e.g., AUSTRALIAN COMPETITION & CONSUMER COMMISSION, DIGITAL PLATFORMS INQUIRY FINAL REPORT 11 (2019), [hereinafter ACCC Report], <https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf> (“While user data is not rare, and a large number of businesses track consumers’ digital footprints, no other businesses come close to the level of tracking undertaken by Google and Facebook.”); DIRECTORATE-GENERAL FOR COMPETITION, EUROPEAN COMMISSION, COMPETITION POLICY FOR THE DIGITAL ERA 4 (2019), [hereinafter Cr  mer Report], <https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf> (“...any discussion of market power should analyse, case by case, the access to data available to the presumed dominant firm but not to competitors, and the sustainability of any such differential access to data.”); DIGITAL COMPETITION EXPERT PANEL, UNLOCKING DIGITAL COMPETITION 23 (2019), [hereinafter Furman Report], https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf (“... the scale and breadth of data that large digital companies have been able to amass, usually generated as a by-product of an activity, is unprecedented.”); STIGLER COMMISSION ON DIGITAL PLATFORMS, STIGLER CENTER, FINAL REPORT 111 (2019) [hereinafter Stigler Report], <https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf> at 17 (“DPs [digital platforms] use their control over specific types of data to increase their market power and, more importantly, their political power.”).

⁵ Professor James C. Cooper analyzes privacy issues in-depth in his chapter, *Antitrust and Privacy*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁶ See, e.g., ACCC Report, *supra* note 4, at 11 (“The breadth and depth of user data collected by the incumbent digital platforms provides them with a strong competitive advantage, creating barriers to rivals entering and expanding in relevant markets, and allowing the incumbent digital platforms to expand into adjacent markets.”); Stigler Report, *supra* note 4, at 40 (“Barriers to equivalent data resources, a side effect of not having the history, scale, or scope of the incumbent, can inhibit entry, expansion, and innovation.”).

commonalities between using data and network effects, there are important differences and distinctions worth highlighting.

We also explore a number of relevant legal considerations involving big data and antitrust. Generally, should courts administer cases that involve big data differently? Should there be a stronger presumption of market power when a large platform possesses big data? On the other side of the coin, can combining big data assets result in merger-specific efficiencies?

Finally, big data is increasingly discussed as a potential remedy for competition problems involving platforms. Proposals range from allowing users to more easily port their data across platforms to forced data sharing and interoperability.⁷ We examine the incentive effects from imposing such remedies and potential unintended consequences.⁸ Ultimately, these proposals are putting the cart before the horse, as remedies without an actual showing of an antitrust violation is not antitrust enforcement but sector regulation.

I. UNDERSTANDING BIG DATA

There is a long tradition of using data to increase efficiency and create value. Mid-twentieth century grocery giant A&P used customer data, *inter alia*, to discern regional preferences and to forecast demand in order to reduce food waste.⁹ An article from

⁷ See, e.g., ACCC Report, *supra* note 4, at 11 (“The ACCC considers that opening up the data, or the routes to data, held by the major digital platforms may reduce the barriers to competition in existing markets and assist competitive innovation in future markets. This could be achieved by requiring leading digital platforms to share the data with potential rivals Another is to require the platforms to provide interoperability with other services.”); Furman Report *supra* note 4, at 76 (“The digital markets unit should use data openness as a tool to promote competition, where it determines this is necessary and proportionate to achieve its aims privacy One model would be to require a dataset to be shared in a controlled environment, with access granted to approved businesses.”).

⁸ Professor Justin (Gus) Hurwitz provides a more thorough treatment of various proposals in his chapter, *Digital Duty to Deal, Data Portability, and Interoperability*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁹ See Timothy J. Muris & John E. Nuechterlein, *Antitrust in the Internet Era: The Legacy of United States v. A&P*, 54 REV. INDUS. ORG. 651, 657 (2018) (“A&P also succeeded because it did what many tech companies do today, albeit amid much controversy: use data to create greater consumer value.”).

Harper's Magazine in the late 1980s used the term "big data" to refer to the variety of customer data lists used to increase the effectiveness of direct mail advertisements.¹⁰ The article found that direct mail services had access to data from credit-reporting agencies, magazine subscriptions, catalog purchases, customer questionnaires, real estate records, and other sources that could sketch a picture of the likely preferences of millions of individuals.

Today, continuing in the tradition of A&P, Walmart analyzes over 2.5 petabytes of data every hour in its Data Café in Bentonville.¹¹ In addition to helping it personalize advertisements, Walmart's data analysis helps it run pharmacies more efficiently, speed up checkout, manage its supply chain, and optimize placement on store shelves.¹²

Yet, the sense that advances in data science are leading to an "overwhelming deluge of information" is not a new phenomenon.¹³ That feeling traces back, at least, to the "avalanche of numbers" that occurred in the 1820s and 1830s, when national governments began accumulating more data than ever before to classify and tabulate information about the population in an attempt to improve governance.¹⁴ Sociologist David Beer explains that, while "features of the current data movement are in some ways novel," data has been scaling up for hundreds of years.¹⁵

¹⁰ See Erik Larson, *What Sort of Car-rt-sort Am I? Junk Mail and the Search for Self*, HARPER'S MAG., Jul. 1989, at 64.

¹¹ Bernard Marr, *Really Big Data at Walmart: Real-Time Insights from Their 40+ Petabyte Data Cloud*, FORBES (Jan. 23, 2017), <https://www.forbes.com/sites/bernardmarr/2017/01/23/really-big-data-at-walmart-real-time-insights-from-their-40-petabyte-data-cloud/#44ea45156c10>.

¹² Kim Souza, *Wal-Mart Works to Use Big Data to Improve Checkout Process, Manage Supply Chain*, TALK BUS. & POL. (Aug. 10, 2017), <https://talkbusiness.net/2017/08/wal-mart-works-to-use-big-data-to-improve-checkout-process-manage-supply-chain/>.

¹³ David Beer, *How Should We Do a History of Big Data?*, 3 BIG DATA & SOC'Y 1, 2–4 (2016) ("[T]he sense that we are being faced with a deluge of data about people is not new, in fact it has a long history.").

¹⁴ *Id.*

¹⁵ *Id.*

Not only do firms have more data than ever, there are increasingly sophisticated methods for analyzing it including the use of machine learning and artificial intelligence. Routinely, firms collect and store data from incongruent sources such as website traffic, credit card purchases, smart phones and wearables, and numerous other data streams to create a profile of their user base.¹⁶ These advances benefit consumers by, among other things, allowing firms to improve products and lower costs, and enabling the growth of the free-to-consumers model widely employed in the online space.¹⁷ The growth in the importance of data has also led to concerns that incumbent firms' access to data can create barriers to entry in many industries. We address these issues below.

A. Role of Big Data in the Production Process

In digital markets, while there is little doubt that big data represents an important factor of production, it is not an end in and of itself.¹⁸ Just as labor, innovation, capital and entrepreneurial skill differentiate firms, so too does the ability to turn "big data" into something useful. For example, a website might track and store every click that its users make while on the site. This data, in turn, could allow the website to better tailor advertisements to a specific user's interests; determine which features to promote and which features to drop; and improve the overall design of the site.

As in other areas of business, some firms are more proficient than others to use and organize assets, as the value of big data can only be unlocked when combined with other inputs. Thus, rather than simply assuming that the sheer volume of data is what

¹⁶ See Joshua D. Wright & Elyse Dorsey, *Antitrust Analysis of Big Data*, 2 COMPETITION L. & POL'Y DEBATE 35, 36 (2016).

¹⁷ See D. Daniel Sokol & Roisin Comerford, *Antitrust and Regulating Big Data*, 23 GEO. MASON L. REV. 1129, 1133–40 (2016). The use of "free" in this context is simply to identify the common phrasing associated with this business model—as sensitivities have grown around the use of "free" versus "zero price." See, e.g., David S. Evans, *Antitrust Economics of Free*, 7 COMPETITION POL'Y INT'L 71, 72 (2011).

¹⁸ See, e.g., Catherine Tucker, *Digital Data as an Essential Facility: Control*, CPI ANTITRUST CHRON., Feb. 2020 at 11 ("... ultimately the value of data is not the raw manifestation of the data itself, but the ability of a firm to use this data as an input to insight.).

explains outcomes, it is also worth considering whether it is the skill and talent needed to combine the data with other inputs to produce something of value which differentiates firms.

Firms are also differentiated in the characteristics of their final product and in the mix of inputs used in their production processes. Thus, to produce a given level of quality, one firm might use a mix of big data, intellectual property, and highly skilled labor, while another firm might achieve a similar level of quality, using the same set of ingredients but in different proportions—relying on its particular comparative advantage. Professor Harold Demsetz observed that conditions frequently considered barriers to entry, such as scale economies, capital requirements, and advertising expenditures, are not the fundamental source of barriers; the fundamental barriers are rather the cost of information and the uncertainty that an entrant has to overcome.¹⁹ In other words, it is not big data per se that represents the barrier to entry, but rather what big data helps a firm accomplish. This point is consistent with the observation that, over time, incumbents inevitably change how they combine their various inputs to achieve their levels of output and quality. For instance, an incumbent might have originally entered with a lower cost curve, a superior algorithm, or a valuable patent but, over time, to improve its product, it uses big data more extensively than when it first entered the market. Similarly, an entrant might initially operate with “small” or “medium” data but improve quality over time as its installed base of users grows.²⁰

The larger point is that the use of big data is not, in of itself, an indication that big data is required to compete effectively or that having significantly more data results in

¹⁹ See Harold Demsetz, *Barriers to Entry*, 72 AM. ECON. REV. 47, 51 (1982).

²⁰ See, e.g., Darren S. Tucker & Hill B. Wellford, *Big Mistakes Regarding Big Data*, ANTITRUST SOURCE, Dec. 2014, at 7 (“Entering the market and then collecting and analyzing user data is not a theoretical approach but rather the very model followed by many of the leading online firms when they were startups or virtual unknowns, including Google, Facebook, Yelp, Amazon, eBay, Pinterest, and Twitter.”).

an insurmountable competitive advantage.²¹ Consequently, for the purpose of competition policy, it is important to consider why a product produced with the aid of big data might be successful. For example, an innovative algorithm could be the primary reason a product is successful in gaining and retaining consumers. Superior design can also make the difference between a successful product and an unsuccessful one. Even if the use of big data is the primary reason for a firm's success, a relevant question is whether comparable, but not necessarily equivalent, data are costly to acquire.

B. Is Big Data a Barrier to Entry?

The prior discussion leads one naturally to a question of whether big data is itself a “barrier to entry.” While a useful shorthand, it is not always entirely clear what constitutes a barrier to entry—as the term has a long history in economics with various scholars emphasizing different aspects of entry in order to create a definition. Below, we briefly summarize some of the key developments.²² Ultimately, rather than focus on definitions per se, it is more pertinent to directly analyze the specific entry conditions for each relevant market; although, walking through the key developments can give useful insights into that analysis.

In the 1950s, Professor Joseph Bain defined barriers to entry as structural factors that allow incumbents to persistently price above the competitive level without incurring

²¹ See, e.g., OECD, *Big Data: Bringing Competition Policy to the Digital Era* 3, No. DAF/COMP/M(2016)2/ANN4/FINAL (Apr. 2017), [https://one.oecd.org/document/DAF/COMP/M\(2016\)2/ANN4/FINAL/en/pdf](https://one.oecd.org/document/DAF/COMP/M(2016)2/ANN4/FINAL/en/pdf) (“The control over a large volume of data is a not sufficient factor to establish market power, as nowadays a variety of data can be easily and cheaply collected by small companies—for instance, through point of sale terminals, web logs and sensors—or acquired from the broker industry.”).

²² For a more in-depth discussion of barriers to entry in economics, see generally R. Preston McAfee et al., *What is a Barrier to Entry?*, 94 AM. ECON. REV. 461 (2004). For a thorough discussion of entry in antitrust, see generally Jonathan B. Baker, *Responding to Developments in Economics and the Courts: Entry in the Merger Guidelines*, Jun. 10, 2002, <https://www.justice.gov/archives/atr/responding-developments-economics-and-courts-entry-merger-guidelines>.

the threat of entry.²³ Thus, Bain considered the following to be examples of barriers to entry: economies of scale that require large capital expenditures, product differentiation, and absolute cost advantages. About a decade later, Professor George Stigler considered barriers to entry as costs that an entrant must incur but incumbents do not.²⁴ Examples include patents and grandfathered government regulations but not economies of scale to the extent that an entrant has access to the same cost function. The appeal of Stigler's definition is its recognition that incumbents can earn supra-normal profits over the long-term only if they have some persistent advantage over potential rivals. What is missing from both Bain and Stigler, however, is an assessment of welfare.

About a decade after Stigler, both Professors Franklin Fisher and C.C. von Weizsäcker filled this void with normative definitions that incorporate social welfare.²⁵ Fisher found "a barrier to entry exists when entry would be socially beneficial but is somehow prevented."²⁶ Similarly, von Weizsäcker explained, "a barrier to entry is a cost of producing which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry and which implies a distortion in the allocation of resources from the social point of view."²⁷ If economies of scale can increase overall welfare *and* we associate entry barriers with inefficiencies, then, von Weizsäcker asks, "in which sense can we speak of a barrier to entry?"²⁸ According to Fisher, "the right issue is not whether there are barriers to entry into the production of a particular mousetrap, but

²³ See JOSEPH BAIN, BARRIERS TO NEW COMPETITION 3 (1956).

²⁴ GEORGE J. STIGLER, THE ORGANIZATION OF INDUSTRY 67 (1968) ("A barrier to entry may be defined as a cost of producing (at some or every rate of output) which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry.").

²⁵ Franklin M. Fisher, *Diagnosing Monopoly*, 19 Q. REV. ECON. & BUS. 7, 23 (1979); C.C. von Weizsäcker, *A Welfare Analysis of Barriers to Entry*, 11 THE BELL J. ECON. 399, 400–401 (1980).

²⁶ Fisher, *supra* note 25, at 23.

²⁷ von Weizsäcker, *supra* note 25, at 400.

²⁸ *Id.* at 401.

whether there are barriers to entry into innovation in mousetraps.”²⁹

The tension in defining barriers to entry is that there are really two ways in which the term is discussed in the context of antitrust. As Professor Dennis Carlton clarifies, “Trying to use ‘barriers to entry’ to refer to both the factors that influence the time it takes to reach a new equilibrium and to whether there are excess long-run profits is confusing.”³⁰ Therefore, for the purpose of competition policy, Carlton recommends that “rather than focusing on whether an entry barrier exists according to some definition, analysts should explain how the industry will behave over the next several years . . . [which] will force them to pay attention to uncertainty and adjustment costs.”³¹

Consequently, we find that it is best to avoid suggesting that big data is or is not a barrier to entry.³² Rather, the use of data is one potential factor when examining “the timeliness, likelihood, and sufficiency of entry efforts an entrant might practically employ.”³³ There are clearly impediments that an entrant must overcome in order to compete effectively. Common examples include regulatory compliance costs, expenditures on specialized equipment, developing intellectual property, and hiring skilled labor. Some obstacles are nominal. Some obstacles are substantial. Attempting to classify these impediments as entry barriers or not creates the confusion mentioned by Carlton.

It is also relevant to note that big data is not an exogenous factor that dictates the

²⁹ Fisher, *supra* note 25, at 27.

³⁰ Dennis W. Carlton, *Barriers to Entry*, 1 ISSUES IN COMPETITION L. & POL’Y 601, 606 (2008).

³¹ *Id.* at 615.

³² See, e.g., W. KIP VISCUSI, JOHN M. VERNON & JOSEPH E. HARRINGTON, JR., *ECONOMICS OF REGULATION AND ANTITRUST* 168 (4th ed., 2005) (“There is perhaps no subject that has created more controversy among industrial organization economists than that of barriers to entry. At one extreme, some economists argue that the only real barriers are government related . . . At the other end of the spectrum, some economists argue that almost any large expenditure necessary to start up a business is a barrier to entry.”).

³³ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, *HORIZONTAL MERGER GUIDELINES* § 9 (2010) (hereinafter *Horizontal Merger Guidelines*).

number of firms in a market, which in turn determines the degree of competition and the rate of return. Rather big data is endogenous, as are other dimensions of non-price competition.³⁴ For instance, if a firm invests heavily in research and development, which allows it to introduce a new product or to substantially improve an existing product, we would not normally view this as anticompetitive conduct or even conduct that ultimately leads to anticompetitive results. Rather, we would consider investment in innovation to be procompetitive. Similarly, investments in big data can create competitive distance between a firm and its rivals, including potential entrants, but this distance is the result of a competitive desire to improve one's product. Moreover, the observation that a firm is making large margins gives no indication whether this reflects supra-competitive pricing if we properly consider the rate of return required over the whole production process, including its investment in big data.³⁵

Even if big data represents an important component to the success of an incumbent, entrants can differentiate their products along other dimensions important to consumers. For instance, a grocery store entrant might focus more on carrying locally made produce or products that cater to specific diets. An online firm might focus more on building network effects or greater integration with complementary products rather than the use of big data. Additionally, a social media platform could focus narrowly on a particular format and demographic in order to expand its user base.³⁶ As Tucker &

³⁴ See Carlton *supra* note 30, at 604 (“Models that focus on only price competition may fail miserably to correctly predict industry concentration and consumer welfare when there are other product dimensions along which competition occurs. This is likely to be particularly true in industries requiring investment and creation of new products.”).

³⁵ See Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSPECTIVES 93, 107 (1994) (“[M]erely observing a firm with a position of market dominance does not imply that the firm is earning super-normal profits: the firm's quasi-rents may merely reflect costs incurred earlier to obtain the position of market leadership.”).

³⁶ Snapchat and TikTok are recent examples. Among users aged 12 to 17, Snapchat is the social media market leader with 16.8 million users, while Instagram and Facebook are second and third at 12.8 million and 11.5 million, respectively. See *Facebook is Tops with Everyone but Teens*, EMARKETER (Aug. 28, 2018), <https://www.emarketer.com/content/facebook-is-tops-with-everyone-but-teens>. In terms of daily active

Wellford explain, “[t]he fact that some established online firms collect a large volume of data from their customers or other sources does not mean that new entrants must have the same quantity or type of data in order to enter and compete effectively . . . [L]ack of asset equivalence should not be a sufficient basis to define a barrier to entry.”³⁷

In assessing the prospect of entry into any given market, an important consideration is the actual history of entry in that market.³⁸ The evidentiary value of prior instances of entry, however, depends upon the extent to which current entry conditions are similar to prior entry conditions. The fact that entry occurred previously does not establish that entry is currently easy. On the other hand, one has to be cautious before inferring that long periods without entry implies that entry would not occur if incumbents raised prices or reduced quality and innovation.

With these caveats in mind, we highlight some recent entry episodes, where the entrants successfully overtook incumbents with arguably big data. While the examples of Google disrupting Yahoo and Facebook displacing MySpace are well-documented,³⁹ they are far from the only instances of an incumbent with a seemingly significant big data advantage losing market share to a newcomer.

Apple’s iTunes is an example of a once powerful incumbent that was dethroned from its market leading position. Started in 2001, iTunes sold digital copies of songs, and eventually audiobooks, eBooks, movies, and television shows.⁴⁰ By 2010, Apple’s iTunes

users, TikTok has grown to 800 million users, which is nearly 50 percent of Facebook’s 1.7 billion users. See Mike Vohaus, *ByteDance, Chinese Digital Giant and Owner of TikTok, Reported to Have Revenues of \$17 Billion*, FORBES (May 27, 2020), <https://www.forbes.com/sites/mikevorhaus/2020/05/27/bytedance-chinese-digital-giant-and-owner-of-tiktok-reported-to-have-revenues-of-17-billion>.

³⁷ Tucker & Wellford, *supra* note 20, at 7.

³⁸ See Horizontal Merger Guidelines, *supra* note 33, § 9 (“The Agencies consider the actual history of entry into the relevant market and give substantial weight to this evidence.”).

³⁹ See, e.g., Tucker & Wellford, *supra* note 20, at 7.

⁴⁰ See Kirk McElhearn, *15 Years of iTunes: a Look at Apple’s Media App and Its Influence on an Industry*, MACWORLD (Jan. 9, 2016), <https://www.macworld.com/article/3019878/15-years-of-itunes-a-look-at-apples-media-app-and-its-influence-on-an-industry.html>.

had roughly 70 percent of the U.S. online music market.⁴¹ With years in the market, along with the massive sales of Apple iPhones, iPods, and Mac computers, the company inevitably amassed large amounts of data.

That, however, did not stop Spotify from entering the market in 2008.⁴² Along with others, Spotify changed the online music industry by offering a music streaming service, where customers could listen free of charge with advertisements or pay for a premium service with the ability to download songs and make their own playlists.⁴³ One might argue that Apple's iTunes is not exactly the same product as Spotify's streaming service; consequently, it is not an apples-to-apples comparison. However, Spotify's differentiation from iTunes actually proves the larger point that markets evolve in ways that are not easily forecasted. Apple's recent decision to discontinue iTunes in favor of its Apple Music product, among others, further proves the point. Spotify's pivot towards a streaming service caused rivals to launch similar services to more effectively compete, such as, Apple Music and Amazon Music. Thus, despite being a relative newcomer in the market, and taking on the incumbent Apple, Spotify currently has double the number of subscribers compared to Apple Music.⁴⁴

Similarly, at the start of 2010, Internet Explorer and Firefox had a combined 86 percent market share in web browsers. Yet, between 2011 and 2012, Chrome overtook both Firefox and Internet Explorer as the predominant web browser even though Chrome

⁴¹ See Gregg Keizer, *Apple Controls 70% of U.S. Music Download Biz*, COMPUTERWORLD (May 26, 2010), <https://www.computerworld.com/article/2518165/apple-controls-70--of-u-s--music-download-biz.html>.

⁴² See *Company Info*, SPOTIFY, <https://newsroom.spotify.com/company-info> (last visited Aug. 19, 2020).

⁴³ See, e.g., Ingrid Lunden, *In Europe, Spotify Royalties Overtake iTunes Earnings by 13%*, TECHCRUNCH (Nov. 4, 2014), <https://techcrunch.com/2014/11/04/in-europe-spotify-royalties-overtake-itunes-earnings-by-13/>; Mark Mulligan, *Mid-Year 2018 Streaming Market Shares*, MIDIA (Sept. 13, 2018), <http://www.midiaresearch.com/blog/mid-year-2018-streaming-market-shares>.

⁴⁴ See Evan Niu, *Is Apple Music at 70 Million Subscribers Yet?*, THE MOTLEY FOOL (Feb. 6, 2020), <https://www.fool.com/investing/2020/02/06/is-apple-music-at-70-million-subscribers-yet.aspx>.

had a 6 percent share at the start of 2010.⁴⁵ Given that web browsers collect a tremendous amount of data on user behavior,⁴⁶ under a big data-centric view of entry barriers, Firefox and Internet Explorer should never have relinquished their market leading positions.

These episodes should perhaps not be surprising as Professors Leslie Chiou and Catherine Tucker find little empirical evidence that the possession of historical data provides an advantage to firms, in terms of their market shares.⁴⁷ As Schepp & Wambach point out, “[T]he origin of many innovative start-ups illustrates that companies with smaller but possibly more specialized datasets and analytical expertise may be able to challenge established companies.”⁴⁸ Importantly, referencing these prior episodes and research are not intended to suggest that data cannot confer a competitive advantage to digital platforms; yet, there should be no presumption that it creates an insurmountable barrier to entry and the associated conclusion that there is a lack of competition due to data.

II. DATA DRIVEN NETWORK EFFECTS

We next move to a discussion of data in the context of network effects—as there is a view that the advantages of big data can be framed as a data-driven network effect.⁴⁹

⁴⁵ See *Desktop, Mobile & Tablet Browser Market Share Worldwide*, STATCOUNTER GLOBALSTATS, <http://gs.statcounter.com/browser-market-share/desktop-mobile-tablet/worldwide/#monthly-200901-201904> (last visited Aug. 19, 2020). Of course, one could argue that Chrome’s ownership by Google and its trove of data are responsible for its success. According to one research paper, however, Chrome’s success was due to its sheer technical superiority. See Jonathan Tamary & Dror G. Feitelson, *The Rise of Chrome*, PEERJ COMPUTER SCIENCE (Oct. 28, 2015), <https://peerj.com/articles/cs-28>.

⁴⁶ See, e.g., Dan Price, *10 Types of Data Your Browser is Collecting About You Right Now*, MAKEUSEOF (Oct. 12, 2018), <https://www.makeuseof.com/tag/data-browser-collects-about-you>.

⁴⁷ Leslie Chiou & Catherine Tucker, *Search Engines and Data Retention: Implications for Privacy and Antitrust* 19–20 (NBER Working Paper No. 23815, 2017), <https://www.nber.org/papers/w23815.pdf>.

⁴⁸ Nils-Peter Schepp & Achim Wambach, *On Big Data and Its Relevance for Market Power Assessment*, 7 J. EUR. COMP. L. & PRAC. 120, 122 (2016).

⁴⁹ See Cédric Argenton & Jens Prüfer, *Search Engine Competition with Network Externalities*, 8 J. COMP. L. & ECON. 73, 74 (2012); Jens Prüfer & Christoph Schottmüller, *Competing with Big Data* 6 (Tilburg L. Sch. Legal Stud. Res. Paper Series No. 06/2017, 2017), <http://ssrn.com/abstract=2918726>.

The idea is that the collection and use of data creates a feedback loop of more data,⁵⁰ which ultimately insulates incumbent platforms from entrants who, but for their data disadvantage, might offer a better product. We aim to establish that, while there are commonalities between using data and network effects, there are important differences and distinctions that should be considered.

The data-driven network effect argument is summarized in numerous reports on the digital economy.⁵¹ The central idea is that having more data begets more data—all the while improving the quality of the platform for all the groups involved including users and advertisers, which causes them to use the platform more. The apparent concern from the reports is that these data advantages create an unstoppable snowball effect, which prevents or hinders new entry since entrants cannot hope to match the quality of incumbents due to their data advantages.⁵²

While this theory of incumbent strength is intuitively appealing, there are a number of relevant points to consider as it applies to antitrust enforcement and policy. First, assuming *arguendo* that this effect exists, it is entirely based on increased platform

⁵⁰ See, e.g., MAURICE E. STUCKE & ALLEN P. GRUNES, BIG DATA AND COMPETITION POLICY 170 (2016) (“[T]he more people actively or passively contribute data, the more the company can improve the quality of its product, the more attractive the product is to other users, the more data the company has to further improve its product, which becomes more attractive to prospective users.”).

⁵¹ See Furman Report, *supra* note 4, at 33 (“The mechanism through which data provide incumbent businesses with a competitive advantage is known as a feedback loop . . . user feedback loops occur when companies collect data from users which they use to improve the quality of their product or service, which then draws in more users, creating a virtuous circle.”); ACCC Report, *supra* note 4, at 11 (“The multiple touch points that Google and Facebook each have with their users enable them to collect more user data, improve their services and attract more users and advertisers, creating a virtuous feedback loop.”); Stigler Report, *supra* note 4, at 40 (“A data advantage over rivals can enable a company to achieve a virtuous circle of critical economies of scale leading to network effects, and a competitive balance in its favor, leading to the gathering of yet more data.”).

⁵² See Furman Report, *supra* note 4, at 33–34 (“Data can act as a barrier to entry in digital markets. A data-rich incumbent is able to cement its position by improving its service and making it more targeted for users, as well as making more money by better targeting its advertising . . . The extent to which data are of central importance to the offer but inaccessible to competitors, in terms of volume, velocity or variety, may confer a form of unmatched advantage on the incumbent business, making successful rivalry less likely.”).

quality and innovation. While an increased level of quality and innovation makes life considerably more difficult for rivals, this is an example of meritorious competition that antitrust laws should not be disincentivizing. Further, the primary effect will be on undifferentiated entry, that is, entry based on trying to exactly replicate the incumbent's product, rather than differentiated entry, which relies less on the type of data that the incumbent has an advantage over.

This also puts a finer point on von Weizsäcker's work on barriers to entry.⁵³ What is the point of defining barriers to entry if welfare-enhancing activities like improving a product now constitutes a "barrier to entry"? What purpose does the definition serve? Such a broad, and indiscriminate, use of the term does not differentiate between welfare-enhancing or reducing activities. It would seem that all activities that create a competitive advantage become a barrier to entry including innovations from R&D; learning by doing and trade secrets;⁵⁴ and hiring skilled labor and training them to increase productivity. We could add the development and maintenance of strong brand names and lower marginal costs. It seems that every conduct or practice that separates a firm from the pack could be classified as a barrier to entry and, consequently, would imply a poor outcome for markets.⁵⁵

⁵³ See von Weizsäcker, *supra* note 25.

⁵⁴ Learning by doing is an economic concept based on the idea that firms enjoy lower costs of production due to the cumulative effects of experience in production, which means a more efficient production process. See Kenneth J. Arrow, *The Economic Implications of Learning by Doing*, 29 REV. ECON. STUDIES 155, 156 (1962). See also Peter Thompson, *Learning by Doing*, in HANDBOOK OF ECONOMICS OF INNOVATION (Bronwyn Hall & Nathan Rosenberg, eds., 2010). Similar to using big data, learning by doing is not a passive activity as it involves investment in data collection, analysis, and experimentation. See Steven D. Levitt et al., *Toward an Understanding of Learning by Doing: Evidence from an Automobile Assembly Plant*, 121 J. POL. ECON. 643, 647 (2013); see also John M. Dutton & Annie Thomas, *Treating Progress Functions as a Managerial Opportunity*, 9 ACAD. MGMT. REV. 235, 235 (1984).

⁵⁵ An example of an improper condemnation of greater efficiencies is the decision in *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 431 (2d Cir. 1945) ("Nothing compelled [Alcoa] to keep doubling and redoubling its capacity before others entered the field. It insists that it never excluded competitors; but we can think of no more effective exclusion than progressively to embrace each new opportunity as it opened, and to face every newcomer with new capacity already geared into a great organization, having the

Second, while no one would seriously dispute that having more data is better than having less, the idea of a data-driven network effect is focused too narrowly on a single factor improving quality. As mentioned in *supra* Section I.A, there are a variety of factors that enter a firm’s production function to improve quality. For example, by all accounts, Google’s own entry into search and its ability to displace the market leading incumbents Yahoo Search and Alta Vista was due to the superiority of its “PageRank” algorithm.⁵⁶ In a nutshell, the problem with data-driven network effects is that it presumes that having more data results in market success or, alternatively, incumbents enjoy their market position due to their size and data advantage.

Relatedly, even if data is primarily responsible for a platform’s quality improvements, these improvements do not simply materialize with the presence of more data—which differentiates the idea of data-driven network effects from direct network effects.⁵⁷ A firm needs to intentionally transform raw, collected data into something that provides analytical insights.⁵⁸ This transformation involves costs including those associated with data storage, organization, and analytics, which moves the idea of collecting more data away from a strict network effect to more of a “data opportunity.”⁵⁹

advantage of experience, trade connections and the elite of personnel.”).

⁵⁶ Sergey Brin & Lawrence Page, *The Anatomy of a Large-Scale Hypertextual Web Search Engine*, 30 COMPUTER NETWORKS & ISDN SYSTEMS 107, 109 (1998).

⁵⁷ Direct network effects occur when, for instance, adding more people to a communications network (such as, telephone, fax machine, email) results in greater value to all the participants on the network, as there are now a greater number of possible connections.

⁵⁸ Of course, there can be situations where the data provided by users is in a more direct format, such as user reviews on Amazon and TripAdvisor. In these instances, the platform does not need to engage in extensive processing of the data to transform it to something of value to other users. However, these instances are more analogous to a traditional, direct network effect than to a data-driven network effect. The reason is that the benefits from a direct network effect derive, not just from the mere presence of other users on the network, but also from their active participation (in this example, through reviews).

⁵⁹ See, e.g., John M. Yun, *Does Antitrust Have Digital Blind Spots?*, 72 S.C. L. REV. 1, 25 (forthcoming 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3593467. See also Alexander Krzepicki et al., *The Impulse to Condemn the Strange: Assessing Big Data in Antitrust*, CPI ANTITRUST CHRON., Feb. 2020, at 16.

This data opportunity is a production opportunity based on residuals of consumption.⁶⁰ Firms that can take advantage of that opportunity and invest in innovation and quality achieve a competitive advantage—yet, as with all investments, there is no certain return.

Third, data has diminishing returns.⁶¹ While it is ultimately an empirical and case-specific question regarding when diminishing returns sets in and its severity, this consideration should be a factor in all cases where data plays a major role. Additionally, depending on the specific market and platform, there are large, commercially available datasets on users,⁶² which can supplement and bolster firm-specific data. Relatedly, there is an ever-increasing amount of “open data” that is being made available, which is public and private data that is available for use without an explicit license.⁶³ Perhaps one of the

⁶⁰ See Hal Varian, *Use and Abuse of Network Effects*, in TOWARD A JUST SOCIETY: JOSEPH STIGLITZ AND TWENTY-FIRST CENTURY ECONOMICS 227, 232 (Martin Guzman ed., 2018) (“The key claim here is that ‘more users lead to more data leads to more product improvements which leads to more users.’ This is not really a network effect, direct or indirect. It is a supply side effect: more data allows the search engine to produce higher quality products which in turn attract more users . . . Mere data by itself doesn’t confer a competitive advantage; that data has to be translated into information, knowledge, and action.”).

⁶¹ See, e.g., Xavier Amatriain, *Mining Large Streams of User Data for Personalized Recommendations*, 14 SIGKDD EXPLORATIONS 37, 43 (2013) (Discussing his research at Netflix: “The previous discussion on models vs. data has recently become a favorite—and controversial—topic. The improvements enabled thanks to the availability of large volumes of data together with a certain Big Data ‘hype’ have driven many people to conclude that it is ‘all about the data’. But in most cases, data by itself does not help in making our predictive models better.”). See also Enric Junqué de Fortuny et al., *Predictive Modeling with Big Data*, 1 BIG DATA 215, 219 (2013) (“for most of the datasets the performance keeps improving even when we sample more than millions of individuals for training the models. One should note, however, that the curves do seem to show some diminishing returns to scale.”).

⁶² See, e.g., Anja Lambrecht & Catherine Tucker, *Can Big Data Protect a Firm from Competition?*, CPI ANTITRUST CHRON., Jan. 2017, at 12 (“This type of commercially available big data typically has broad reach and coverage, allowing many firms whose business does not usually generate big data to gain insights similar to those available to firms that own big data on a large number of customers. There are many examples for very big commercially available data sets.”).

⁶³ In 2009, the U.S. government created Data.gov, which is a repository of open data, and is part of a larger U.S. federal government initiative to have an open data policy. While predominantly federal agency data, Data.gov also includes data from states, counties, cities, universities, private entities, and non-profits. See *Data Catalog*, DATA.GOV, https://catalog.data.gov/dataset#sec-organization_type (last visited Aug. 19, 2020). Cities such as New York also have their own open data portals. See NYC OPEN DATA, <https://opendata.cityofnewyork.us>.

most important sources of open data is existing social media posts.⁶⁴ In short, there is a massive amount of data available, both free and paid, to complement firm-specific data.

III. RELEVANT LEGAL ASPECTS OF BIG DATA

In this section, we explore a number of relevant legal considerations involving big data and antitrust. Generally, should courts administer cases that involve big data differently? Specifically, does the presence of big data imply a set of presumptions within the rule of reason framework—including a presumption of market power? For mergers, does the combination of big data assets result in cognizable efficiencies?⁶⁵

Given the state of the current evidence—including a lack of a large body of prior cases and agency actions involving a central role for big data issues⁶⁶—we believe there is an insufficient basis for having an antitrust presumption involving big data. Of course, this could change if the evidence mounts either in one direction or another. Yet, as has

⁶⁴ For example, Twitter offers free and paid access to its various application programming interfaces (APIs), which are “products, tools, and resources that enable you to harness the power of Twitter’s open, global, and real-time communication network.” See *Get Started with the Twitter Developer Platform*, TWITTER, <https://developer.twitter.com/en/docs/basics/getting-started> (last visited Aug. 19, 2020).

⁶⁵ According to the MERGER GUIDELINES § 10 at 30, “[c]ognizable efficiencies are merger-specific efficiencies that have been verified and do not arise from anticompetitive reductions in output or service.” Horizontal Merger Guidelines, *supra* note 33, § 10.

⁶⁶ See Sokol & Comerford, *supra* note 17, at 1130 (“... arguments for antitrust intervention when Big Data has come up as an issue have never carried the day for any merger or decided conduct case in any Department of Justice Antitrust Division (‘DOJ’), Federal Trade Commission (‘FTC’) or Directorate-General for Competition (‘DG Competition’) case to date.”). See also Margrethe Vestager, *Competition in a Big Data World*, speech at Digital Life Design (Jan. 17, 2016), https://wayback.archive-it.org/12090/20191129204050/https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/competition-big-data-world_en (“[W]e shouldn’t take action just because a company holds a lot of data. After all, data doesn’t automatically equal power . . . The Commission has looked at this issue in two merger cases—Google’s acquisition of DoubleClick, and Facebook’s purchase of WhatsApp. In the particular circumstances of those cases, there was no serious cause for concern . . . We continue to look carefully at this issue, but we haven’t found a competition problem yet.”). A recent German competition authority case involving Facebook certainly invokes the idea of big data; although, the case is more about Facebook’s policy of combining data across its various online properties and the implicit privacy bargain that its users must make. See, e.g., Ursula Knapp & Douglas Busvine, *Top German Court Reimposes Data Curbs on Facebook*, REUTERS (Jun. 23, 2020), <https://www.reuters.com/article/us-facebook-germany/top-german-court-reimposes-data-curbs-on-facebook-idUSKBN23U2P4>.

been previously discussed, big data is fundamentally about innovation—as a firm cannot gain a competitive advantage without some degree of effort and ingenuity to turn raw data into something that provides value. Thus, the presence of big data is more naturally categorized in a manner similar to R&D and other innovative activities. To the extent that these activities make it difficult for rivals to compete, then that is a potential consideration in terms of the degree of antitrust market power and the durability of that market power⁶⁷—but it does not, in and of itself, suggest competitive harm.

Additionally, reflexive labelling of big data as a “barrier to entry” provides little guidance to courts as the term has no clear meaning in antitrust law.⁶⁸ A brief survey of recent antitrust cases confirms this observation that the current treatment of entry barriers remains relatively perfunctory and lacking in clarity. For instance, conclusions about what constitutes an entry barrier verge on the contradictory.⁶⁹ Even in cases where discussion of entry barriers is more thorough, the lack of a universal approach leaves courts with a great deal of uncertainty when it comes to deciding the question.⁷⁰ Thus, in terms of big data, courts should bypass labels and determine the precise role that big data plays in a given competition matter.⁷¹

⁶⁷ See, e.g., Daniel L. Rubinfeld & Michael S. Gal, *Access Barriers to Big Data*, 59 ARIZ. L. REV. 339, 346 (2017) (“Taken together, these facts imply that determining whether a big-data collector possesses market power mandates that one define the market in which the data collector operates, as well as the use(s) of such data, much like any other market analysis.”).

⁶⁸ See, e.g., Daniel E. Lazaroff, *Entry Barriers and Contemporary Antitrust Litigation*, 7 U.C. DAVIS BUS. L.J. 1, 6 (2006) (“... the Supreme Court has really never provided a comprehensive analysis of barriers to entry and their role in interpreting the Sherman, Clayton and Federal Trade Commission Acts. Rather, the Court has periodically referenced entry barriers in antitrust cases, resulting in a somewhat cryptic and uncertain message to lower courts, litigants and students of antitrust law.”).

⁶⁹ Compare *GDHI Mktg. LLC v. Antsel Mktg. LLC*, No. 18-CV-2672-MSK-NRN, 2019 WL 4572853 at *9 n.5 (D. Colo. Sept. 20, 2019) (“The mere cost of capital is not a barrier to entry.”) with *Philadelphia Taxi Ass’n, Inc v. Uber Techs., Inc.*, 886 F.3d 332, 342 (3d Cir. 2018) (“Entry barriers include . . . high capital costs.”).

⁷⁰ See *Buccaneer Energy (USA) Inc. v. Gunnison Energy Corp.*, 846 F.3d 1297, 1316–17 (10th Cir. 2017).

⁷¹ For instance, when Apple proposed to acquire the music recognition app Shazam in 2018, the European Commission examined several ways in which the acquisition could incentivize Apple to engage in anticompetitive conduct including exploiting its “big data” advantage from having access to Shazam data.

In terms of efficiencies, there are compelling arguments that mergers that bring together various data sets and/or improve the ability to analyze data should be recognized as cognizable efficiencies. Luib & Cowie detail a number of recent competition matters involving the recognition of big data efficiencies.⁷² The court in *AT&T-Time Warner* recognized that “the combined company can use information from AT&T’s mobile and video customers to better tailor Time Warner’s content and advertising to better compete with online platforms.”⁷³ In *CVS Health-Aetna*, “[w]e were able to show that the combination of CVS Health and Aetna would lead to better-integrated medical and pharmacy data.”⁷⁴ Also, in 2010, data efficiencies played a role in the Department of Justice’s decision to close its investigation into Microsoft and Yahoo’s search alliance agreement, which involved integrating, to a degree, their search algorithms, advertising assets, and data.⁷⁵ The DOJ explicitly invoked the role of data in providing efficiencies and improving Microsoft’s competitive position.⁷⁶

In sum, the burden of production should remain with the plaintiff to demonstrate that the use of big data is a significant hindrance to the timeliness, likelihood, and

Ultimately, the Commission cleared the deal based, in part, on a finding that Shazam’s data did not represent a particularly unique asset in the market. See Nicolo Zingales, *Apple/Shazam: Data is Power, But Not a Problem Here*, CPI EU NEWS COLUMN (Dec. 2018), <https://www.competitionpolicyinternational.com/appleshazam-data-is-power-but-not-a-problem-here>.

⁷² Greg P. Luib and Mike Cowie, *Big (But Not Bad) Data and Merger Efficiencies*, DECHERT LLP: ONPOINT (Jan 2020), [https://info.dechert.com/10/13420/january-2020/big-\(but-not-bad\)-data-and-merger-efficiencies.asp](https://info.dechert.com/10/13420/january-2020/big-(but-not-bad)-data-and-merger-efficiencies.asp).

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ See Press Release, U.S. Dep’t of Justice, Statement of the Department of Justice Antitrust Division on its Decision to Close Its Investigation of the Internet Search and Paid Search Advertising Agreement Between Microsoft Corporation and Yahoo! Inc. (Feb. 18, 2010), <http://www.justice.gov/opa/pr/statement-department-justice-antitrust-division-its-decision-close-its-investigation-internet>.

⁷⁶ *Id.* (“The increased queries received by the combined operation will further provide Microsoft with a much larger pool of data than it currently has or is likely to obtain without this transaction. This larger data pool may enable more effective testing and thus more rapid innovation of potential new search-related products, changes in the presentation of search results and paid search listings, other changes in the user interface, and changes in the search or paid search algorithms.”).

sufficiency of entry and/or hinders the competitive process—as measured by the negative impact on consumer welfare. What should be avoided is a presumption that the mere presence of big data lowers the burden of production on the plaintiff to either meet its *prima facie* burden or its burden to rebut the defendant’s efficiency justifications. In contrast, what recent competition cases have illustrated is that big data can play an integral role in realizing efficiencies post-merger.

IV. DATA REMEDIES

Finally, when it comes to data and antitrust, there is increasing momentum to use data and the related platform infrastructure as potential remedies for anticompetitive conduct.⁷⁷ These remedies typically include proposals for data portability, data sharing, and interoperability. While these proposals are putting the cart before the horse, in this section, we broadly examine the incentive effects from imposing such remedies and the potential unintended consequences.

The most basic proposal to alleviate the market leadership of various digital platforms is to allow platform participants, such as users and advertisers, to easily and seamlessly port their data to rival platforms. The idea is to lower switching costs and lock-in effects, which will facilitate the ability to multi-home or switch altogether.⁷⁸ Of course, there is a major difference between using this proposal as a remedy to address demonstrable anticompetitive harms versus as a proactive regulatory intervention in an effort to improve market outcomes. As a remedy, the benefits of this proposal are that it can be targeted at specific practices, users, and platforms. These benefits might not translate to a regulatory setting, where the statutory language will likely have to be broader. This potentially opens the door for creative means where a platform could adhere to a strict reading of the regulation but implement measures that undermine its

⁷⁷ See *supra* note 7.

⁷⁸ Multi-homing is the practice of concurrently using two or more competing platforms.

effectiveness in actually lowering lock-in and switching costs. This concern is likely significantly mitigated when data portability is used as a remedy—again, as remedies are intended to solve a specific competitive problem and, thus, attempts to undermine the stated objective will more likely be flagged as an order violation. Finally, given that the industry has already moved towards data portability as a best practice, the value of this proposal as an antitrust remedy is more limited.⁷⁹

Various digital reports also call for more aggressive remedies including forced data sharing and interoperability requirements. Data sharing is getting at the heart of the debate and involves taking a platform’s intellectual property and requiring them to share it with rivals. One initial observation is that data sharing raises at least a nominal concern that it would facilitate coordination and, consequently, would be detrimental to the welfare of consumers. Additionally, there are major questions whether data sharing would actually solve the problem it is trying to address—given that advantages in data do not necessarily translate into advantages in innovation and quality.⁸⁰ It would seem that a necessary condition to impose such a remedy is a finding that data is an essential facility.⁸¹

Relatedly, forcing platforms to be interoperable even further necessitates leading platforms to coordinate on the design and infrastructure of their platforms. While this is ostensibly appealing, it also raises concerns about “bad” coordination, that is, agreements

⁷⁹ See *About Us*, DATA TRANSFER PROJECT, <https://datatransferproject.dev> (last visited Aug. 19, 2020) (“The Data Transfer Project was launched in 2018 to create an open-source, service-to-service data portability platform so that all individuals across the web could easily move their data between online service providers whenever they want.” Apple, Facebook, Google, Microsoft, and Twitter have all committed to the project.).

⁸⁰ See *supra* Sections I & II.

⁸¹ The essential facilities doctrine has a long history in antitrust jurisprudence and involves the recognition that, while firms normally have no duty to help their rivals, there are instances when a monopolist’s control over an input is so essential to a rival’s ability to compete, that withholding or foreclosing that input is considered an illegal restraint of trade. See, e.g., Robert Pitofsky, *The Essential Facilities Doctrine Under U.S. Antitrust Law*, 70 ANTITRUST L.J. 443, 444 (2002).

that soften competition rather than sharpen it.⁸² Further, “standardization” could be implemented in an overly technical and complex manner, where the intent is to actually hinder, rather than facilitate, entry. Finally, forced sharing—of any kind—has been demonstrated to dampen incentives and reduce innovation.⁸³

In sum, the basic message is that regulations intended to fix the competitive deficiencies of a digital market are inevitably going to lead to unintended consequences, which can ultimately do more harm than good. Further, attempts to promote rival products through forced sharing and interoperability are highly likely to negatively impact dynamic incentives. Thus, these proposals, while well-intended, should only be seriously considered after a thorough analysis of the full benefits and costs. As a remedy, there certainly can be specific instances where these proposals could address the harm from proven anticompetitive conduct. Yet, even in those instances, agencies and courts should be aware of their inherent weaknesses and, thus, they should be implemented in the narrowest manner possible.

CONCLUSION

The sheer volume, velocity, and variety of data collected throughout an increasingly digital economy has given rise to the big data era. Big data is being used to innovate in many sectors of the economy including in healthcare, farming, and education.⁸⁴ Yet, the widespread use of big data has also given rise to antitrust concerns

⁸² For details on the types of agreements between competitors that can result in anticompetitive harm, see U.S. FED. TRADE COMM’N & DEP’T OF JUSTICE, ANTITRUST GUIDELINES FOR COLLABORATION AMONG COMPETITORS (2000).

⁸³ See, e.g., Thomas W. Hazlett & Anil Caliskan, *Natural Experiments in U.S. Broadband Regulation*, 7 REV. OF NETWORK ECON. 460, 477 (2008) (“Cable modem services held nearly a two-to-one market share advantage when DSL carriers were most heavily obligated to provide ‘open access’ to competing ISPs. Once the FCC eliminated a key provision of that access regime . . . DSL subscribership increased dramatically . . . [and] was 65% higher—more than 9 million households—than it would have been under the linear trend established under ‘open access’ regulation.”).

⁸⁴ See, e.g., Ashley Brooks, *7 Data Innovations That are Advancing Industries of All Kinds*, RASMUSSEN COLLEGE TECHNOLOGY BLOG (Jun. 3, 2019), <https://www.rasmussen.edu/degrees/technology/blog/data-innovations->

that big data is actually resulting in reductions in welfare by hindering competition and protecting big tech incumbents. In this chapter, we have examined the role of big data in antitrust with a particular focus on how it fits into the larger production process and whether it should be considered a barrier to entry. Further, we considered the idea that big data is part of a positive feedback loop where increased quality precipitates an increase in users which further increases quality and whether this is ultimately harmful. Finally, we considered whether there is a need to change our antitrust presumptions regarding market power and big data and the merits of various proposed remedies to the alleged big data problem. Ultimately, if big data alters the competitive process, then we should focus on the testable implications that emerge. What we should avoid, however, are shortcuts and regulation, or unwarranted antitrust intervention, based on the “bigness” of big data and perfunctory labels such as barriers to entry.

advancing-industries; Lisa Balboa, *Divining with Data*, THE ACTUARY (Apr. 2019), <https://www.theactuary.com/features/2019/04/2019/04/08/divining-data>.

Vertical Mergers and Integration in Digital Markets

John M. Yun*

INTRODUCTION

For those seeking antitrust reform, every new acquisition by the largest digital platforms fuels the belief that the U.S. antitrust laws are fundamentally and systematically underenforced—including in the area of vertical mergers.¹ Specifically, there are increasing calls for more aggressive antitrust enforcement,² changing legal presumptions,³ and even proposals to break up big tech firms.⁴ Unlike horizontal mergers, however, which involve the combination of direct competitors, vertical mergers involve the acquisition of complements in the production process. Examples include Google’s acquisitions of YouTube, DoubleClick, AdMob, and ITA;⁵ Amazon’s acquisition

* This chapter builds upon a number of prior works, including the GAI Comment on The Federal Trade Commission’s Hearings on Competition and Consumer Protection in the 21st Century, Vertical Mergers, Sept. 6, 2018; the GAI Comment on DOJ/FTC Draft 2020 Vertical Merger Guidelines, Feb. 7, 2020. I also rely on the Prepared Statement of James C. Cooper, Joshua D. Wright, & John M. Yun Before the United States House of Representatives, Committee on the Judiciary, Subcommittee on Antitrust, Commercial, and Administrative Law, Investigation into the State of Competition in the Digital Marketplace, Apr. 17, 2020. I thank Tad Lipsky for providing valuable comments and Scalia Law student Timothy Swartz for excellent research assistance.

¹ See, e.g., STIGLER COMM. ON DIG. PLATFORMS, STIGLER CTR., FINAL REPORT 84–85 (2019), <https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf> (“While US antitrust law has long been flexible in combatting anti-competitive conduct, there is increasing concern that it has been underenforced in recent years . . . Vertical mergers are rarely challenged by the enforcement agencies, and claimed or expected merger-related efficiencies are often not realized.”).

² See, e.g., Steven C. Salop, *Invigorating Vertical Merger Enforcement*, 127 YALE L. J. 1962, 1992–94 (2018).

³ See, e.g., Jonathan B. Baker et al., *Five Principles for Vertical Merger Enforcement Policy*, 33 ANTITRUST, Summer 2019, at 12, 16 (“The agencies should consider adopting rebuttable presumptions that a vertical merger harms competition when certain factual predicates are satisfied. We set out several possible presumptions here that could be invoked when at least one of the markets is concentrated, and thus, when competitive harm is more likely.”).

⁴ For instance, during her 2020 presidential campaign, Sen. Elizabeth Warren (D-MA) proposed breaking up big technology companies and regulating them as public utilities. See *How We Can Break Up Big Tech*, WARREN DEMOCRATS (Mar. 8, 2019), <https://elizabethwarren.com/plans/break-up-big-tech>.

⁵ See, e.g., AUSTL. COMPETITION & CONSUMER COMM’N, DIGITAL PLATFORMS INQUIRY, FINAL REPORT 75 (2019), <https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf> (“This

of Kiva Systems; and Apple’s acquisitions of NeXT, Siri, and Shazam.

In this chapter, we address three issues relating to vertical mergers and antitrust: (1) incorporating the elimination of double marginalization into the analysis of the likelihood of a unilateral price effect rather than treating it as a separate efficiencies defense; (2) recognizing, *inter alia*, the importance of reduced transaction costs in analyzing the efficiencies commonly associated with vertical mergers; and (3) highlighting that the weight of the empirical evidence continues to support the proposition that vertical mergers are less likely to generate competitive concerns than horizontal mergers.

Why the focus on these three topics? When considering vertical mergers and integration, these issues are inevitably part of a court or agency’s analysis. Even reports calling for antitrust reform and greater market regulation acknowledge the importance of the procompetitive aspects of vertical mergers.⁶ While the ultimate focus will be on digital markets, our discussion, however, will be broader and include all sectors. While there are certainly different considerations in understanding firm conduct in digital markets and platforms, there are also important commonalities that transcend sectors.

series of acquisitions has served to entrench Google’s position in search services and search advertising, particularly by providing it with advantages of scope and by reducing competition.”); [UK] DIG. COMPETITION EXPERT PANEL, UNLOCKING DIGITAL COMPETITION 92–93 (2019), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf (“This pattern of digital mergers could also be harmful if the newly acquired position in adjacent markets is exploited to harm existing or downstream rivals . . . The news publishing industry has made strong representations that this has occurred through Google’s vertical integration of multiple layers of the digital advertising market.”).

⁶ See, e.g., DIRECTORATE-GENERAL FOR COMPETITION, EUR. COMM’N, COMPETITION POLICY FOR THE DIGITAL ERA 117–18 (2019), <https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf> (“There may indeed be cases in the digital realm where a dominant acquirer buys up innovative targets but later shuts down the relevant innovation. This is, however, not the typical scenario. Frequently, the project of the bought up start-up is integrated into the ‘ecosystem’ of the acquirer or into one of their existing products. Such acquisitions are different from killer acquisitions as the integration of innovative complementary services often has a plausible efficiency rationale. In these cases, the theory of harm becomes more complex.”).

The core economic concepts used to assess efficiencies and potential harms in vertical mergers do not materially differ whether discussing automotive assembly, coal generation, multichannel video programming distribution (MVPD), health care provision, or online search; but, clearly, there are relevant differences when performing detailed assessments. Before delving into these specific issues, however, it is worth briefly discussing the important differences between vertical and horizontal mergers.

I. DISTINGUISHING VERTICAL AND HORIZONTAL MERGERS

Since the pioneering work of Ronald Coase,⁷ and subsequent research by Oliver Williamson and Benjamin Klein,⁸ economists have developed a better understanding of the nature of firms, the transactions that occur within firms, how firms interact with the larger market, and efficiency rationales for vertical integration.⁹ Economic research has also developed potentially anticompetitive rationales for vertical integration.¹⁰ Taken together, however, the theoretical literature, without empirical grounding, leaves practitioners, agencies, and courts with ambiguous guidance on the welfare

⁷ See, e.g., Ronald H. Coase, *The Nature of the Firm*, 4 *ECONOMICA* 386 (1937).

⁸ See, e.g., Benjamin Klein et al., *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 *J.L. & ECON.* 297 (1978); Benjamin Klein & Kevin M. Murphy, *Vertical Integration as a Self-Enforcing Contractual Arrangement*, 87 *AM. ECON. REV.* 415 (1997); Benjamin Klein, *Fisher—General Motors and the Nature of the Firm*, 43 *J.L. & ECON.* 105 (2000); Oliver E. Williamson, *The Vertical Integration of Production: Market Failure Considerations*, 61 *AM. ECON. REV.* 112 (1971); Oliver E. Williamson, *Transaction-Cost Economics: The Governance of Contractual Relations*, 22 *J.L. & ECON.* 233 (1979); Oliver E. Williamson, *Credible Commitments: Using Hostages to Support Exchange*, 73 *AM. ECON. REV.* 519 (1983).

⁹ See Sanford J. Grossman & Oliver D. Hart, *The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration*, 94 *J. POL. ECON.* 691 (1985); Joseph J. Spengler, *Vertical Integration and Antitrust Policy*, 58 *J. POL. ECON.* 347 (1950). For a summary of the literature, see Timothy Bresnahan & Jonathan Levin, *Vertical Integration and Market Structure*, in *HANDBOOK OF ORGANIZATIONAL ECONOMICS* (Robert Gibbons & John Roberts eds. 2012).

¹⁰ See, e.g., Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price*, 96 *YALE L.J.* 209, 230–53 (1986); Michael A. Salinger, *Vertical Mergers and Market Foreclosure*, 103 *Q.J. ECON.* 345, 354–55 (1988).

consequences of vertical mergers.¹¹

This ambiguity is fundamentally driven by the following facts: (a) vertical mergers do not involve direct competitors;¹² (b) the elimination of double marginalization puts a downward pressure on pricing and is a consideration that is not present for horizontal mergers;¹³ (c) efficiencies are absolutely central to the welfare assessment of vertical mergers and cannot be treated as a second order concern, as they occasionally are in the assessment of the welfare effects of horizontal mergers;¹⁴ and yet (d) there is a concern that vertically integrated firms will increase incentives for the post-merger firm to foreclose competitors or, short of that, raise their costs.

In contrast, horizontal mergers inherently involve a degree of competitive overlap and an associated loss of the rivalry between actual and/or potential competitors.¹⁵ This loss of competition is the basis for the economic models used to predict post-merger price increases and other anticompetitive effects, including merger simulations and, more recently, GUPPIs.¹⁶ Stated somewhat differently, absent efficiencies, entry, and other dynamic considerations, every horizontal merger involves some, perhaps nominal, loss of rivalry between competitive firms; in measuring a horizontal merger's effects,

¹¹ See David Reiffen & Michael Vita, *Is There New Thinking on Vertical Mergers?*, 63 ANTITRUST L.J. 917, 923–24 (1995).

¹² Of course, a particular merger can have both a vertical and horizontal component.

¹³ See *infra* Section II.

¹⁴ See, e.g., Michael B. Bernstein & Justin P. Hedge, *Maximizing Efficiencies: Getting Credit Where Credit is Due*, ANTITRUST SOURCE, Dec. 2012, at 1 (“Efficiencies are frequently a significant part of the business rationale for a transaction. However, receiving credit for the efficiency-enhancing aspects of a combination in a merger review is often difficult.”).

¹⁵ See, e.g., Joseph Farrell & Carl Shapiro, *Horizontal Mergers: An Equilibrium Analysis*, 80 AM. ECON. REV. 107, 113–14 (1990).

¹⁶ GUPPI is an acronym for “Gross Upward Pricing Pressure Index,” which is intended to conceptualize the unilateral effects from mergers on prices from the loss of a rival before adjusting for the effects of entry and efficiencies that put downward pressure on prices. See Steven C. Salop & Serge Moresi, Comment Letter on Updating the Merger Guidelines 18–21 (Nov. 9, 2009), https://www.ftc.gov/sites/default/files/documents/public_comments/horizontal-merger-guidelines-review-project-545095-00032/545095-00032.pdf.

standard, static, economic models typically will predict an associated price increase.¹⁷

Because theoretical ambiguity results when assessing vertical mergers, empirical evaluation of consummated mergers' welfare effects has been, and remains, an important area of research for guiding antitrust policy. As Professors Francine Lafontaine & Margaret Slade explain, this empirical evaluation allows us to address "what are the consequences of vertical integration for economic outcomes such as prices, quantities, investment, and profits?"¹⁸ These questions are "important ultimately as input into the development of sensible vertical merger policy and related government intervention in vertical relationships."¹⁹ Similarly, Professor Joshua Wright proposes a move to "evidence-based antitrust," which is "a commitment to testing economic theories with economic knowledge and empirical data to support those theories with the best predictive power."²⁰

II. ELIMINATION OF DOUBLE MARGINALIZATION IS A UNILATERAL PRICE EFFECT

A central impact of vertical mergers and integration is the elimination of double marginalization (EDM). EDM played a large role in the recently litigated AT&T-Time Warner merger and the report of the government's expert, Professor Carl Shapiro.²¹ While EDM is typically discussed as an efficiency defense in a rule of reason analysis, this categorization obscures the relevant economics of internalizing pricing externalities and may encourage the misperception that EDM is a special or unusual form of efficiency.

When separate upstream and downstream entities price their products, they do

¹⁷ See, e.g., Farrell & Shapiro, *supra* note 15, at 113–14.

¹⁸ Francine Lafontaine & Margaret Slade, *Vertical Integration and Firm Boundaries: The Evidence*, 45 J. ECON. LITERATURE 629, 629 (2007).

¹⁹ *Id.* at 630.

²⁰ Joshua D. Wright, *Abandoning Antitrust's Chicago Obsession: The Case for Evidence-Based Antitrust*, 78 ANTITRUST L.J. 241, 242–43 (2012).

²¹ See Expert Report of Carl Shapiro at 62–64, *United States v. AT&T, Inc.*, 310 F. Supp. 3d 161 (D.D.C. 2018), *aff'd*, 916 F.3d 1029 (D.C. Cir. 2019).

not fully take into account the effect their pricing decisions have upon each other—even though they are part of the same value chain for a given product. Consider, for instance, a two-stage production process involving two independent firms. If we assume that both have downward-sloping demand curves—meaning that marginal revenue declines faster than demand at each stage—then there will be two markups. The markup at each stage results in raising price above marginal cost with a corresponding reduction in output.²² While an integrated firm could certainly continue to price each stage as if they were two separate entities, to do so would leave potential profits on the table because vertical integration enables the firm to effectively “evade” the markup at the first stage. The result is higher output, profits, and consumer surplus. As Professor Joseph Spengler noted long ago, “*ceteris paribus*, the greater the ‘monopolistic’ surcharges being levied in earlier stages and the higher the variable cost in later stages . . . the greater will be the price reductions this firm finds advisable.”²³

Thus, a vertical merger eliminates a pricing externality because the post-merger upstream and downstream units are fully aligned in terms of their pricing incentives. In this regard, EDM is indistinguishable, conceptually, from the unilateral effects that may create an incentive to raise price. Specifically, in the context of mergers, unilateral effects are about the incentive to change price (or quantity, quality, or innovation) as a result of combining two previously independent economic decision-makers, not by achieving some reduction in cost. Just as there is a greater incentive, under certain conditions, to foreclose rivals or to raise rivals’ costs (RRC) post-merger²⁴—quite apart from the ability

²² Note that this markup in price above marginal cost results from the downward-sloping demand and not from antitrust market power *per se*. For a discussion of the distinction between economic and antitrust market power, see generally, Benjamin Klein, *Market Power in Antitrust: Economic Analysis After Kodak*, 3 SUP. CT. ECON. REV. 43 (1993).

²³ Spengler, *supra* note 9, at 350.

²⁴ It is worth noting that RRC is really just a form of foreclosure or exclusion, and not a separate theory of harm *per se*. I thank my colleague Tad Lipsky for raising the question of whether antitrust is well-served from using RRC as a distinct term from foreclosure and exclusion. First, as mentioned, there is no real

to do so²⁵—there is an incentive post-merger to lower prices due to the elimination of a markup along the supply chain. Consequently, one cannot accurately assess unilateral effects without accounting for the full set of incentives that could move prices in either direction.

Even though EDM puts downward pressure on prices, it is not fitting to consider EDM as a second-order factor in the calculation of a “net effect,” a phrase closely associated with weighing efficiencies against findings of anticompetitive harm. Rather, “unilateral price effects” actually include EDM²⁶—just as a finding that a merger will

conceptual distinction between the two. Second, it incorrectly suggests that the focus of analysis of competitive effects should be the effect on the competitor’s costs. This is a classic “competitors not competition” mistake. We would be better off using the more general term “exclusion” (recognizing that exclusion almost always operates by raising rivals’ costs) and relying on the traditional exclusionary conduct analysis in which the characteristics of the market (products, participants, transaction structure, dynamic evolution, etc.), as well as the procompetitive aspect of the impugned conduct, are considered as part of the mix. For example, suppose a competitor develops a product with stunning and highly desirable new features, requiring increased production costs but also attracting so much demand that there is a huge jump in output and the value of output, and perhaps this competitor gets a huge boost in share as a result. Clearly rivals’ costs have been raised if they want to compete in the new product space, but it is hard to imagine circumstances in which this could be regarded as anticompetitive exclusion (quite the contrary).

²⁵ For an overview of the intuition behind the theories of harm typically associated with vertical mergers, that is, raising rivals’ costs and foreclosure, see generally, Josh Lustig et al., *Economic Tools for Analyzing Vertical Mergers in Healthcare*, CPI ANTITRUST CHRON., May 2020.

²⁶ See, e.g., Gopal Das Varma & Martino De Stefano, *Equilibrium Analysis of Vertical Mergers*, 65 ANTITRUST BULL. (forthcoming 2020) (manuscript at 2–3), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3307150 (“... RRC [“raising rivals’ costs”] and EDM are not two separate effects. Instead, they are inseparably linked because the extent of EDM affects the strength of the RRC incentive, making EDM to be not just a stand-alone competitive benefit to be weighed against RRC.”); Daniel P. O’Brien, *The Antitrust Treatment of Vertical Restraints: Beyond the Possibility Theorems*, in THE PROS AND CONS OF VERTICAL RESTRAINTS 40, 51 (2008), <http://www.konkurrensverket.se/globalassets/english/research/report-the-pros-and-cons-of-vertical-restraints-18mb.pdf> (“The biggest contribution of the successive monopoly model to the literature, in my view, is to show that Cournot’s insight that the joint pricing of complements leads to lower prices extends to the sequential pricing of complements that occurs between firms in a vertical relationship.”); see also Serge Moresi & Steven C. Salop, *vGUPPI: Scoring Unilateral Pricing Incentives in Vertical Mergers*, 79 ANTITRUST L.J. 185, 189 (2013) (calling EDM an “efficiency” but clearly considering it an integral part of the merged firm’s unilateral incentives: “A vertical merger can create unilateral incentives for the upstream merging firm to raise the prices of its inputs to the competitors of the downstream merger partner and also can create unilateral incentives for the downstream merging firm to reduce prices as a result of vertical efficiencies, particularly EDM. These are the central incentives driving input foreclosure concerns and efficiency rationales in vertical merger cases.”); Gleb B. Domnenko & David S. Sibley,

induce entry is properly included in a unilateral effects analysis. For these reasons, assessment of EDM is part and parcel of what constitutes unilateral effects, and making this refinement would bring clarity among practitioners and courts.

Are there factors that would mitigate the degree to which EDM puts downward pressure on prices in a given merger? Recently, Professors John Kwoka & Margaret Slade highlight a number of potential factors to consider when assessing EDM, including whether the upstream input is used in fixed or variable proportions downstream; whether the benefits of EDM are partially or fully achieved through contracts; and other considerations such as non-monopoly markets, multiproduct firms, and inefficiencies within a firm.²⁷ Certainly, the degree to which EDM is applicable in a given market is a factual matter, as is the degree to which there are upward pressures on prices. Further, some of the considerations that would diminish the benefits of EDM also weaken the incentive to raise rivals' costs. For instance, EDM is weaker the less essential the upstream input is to the downstream production process.²⁸ Yet, the less essential the merging upstream supplier is to downstream firms, including the integrated firm, then the upstream unit has less ability to raise the costs of downstream rivals—let alone foreclose them. Of course, there are other considerations in play that make simple predictions difficult, which further supports the need to assess EDM concurrently with possible incentives to raise price.²⁹

Simulating Vertical Mergers and the Vertical GUPPI Approach 4 (Jan. 1, 2019), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3447687.

²⁷ See John Kwoka & Margaret Slade, *Second Thoughts on Double Marginalization*, 34 ANTITRUST, Spring 2020, at 51. Other recent papers have also raised questions about the applicability of EDM in certain market scenarios. See, e.g., Baker et al., *supra* note 3, at 15; Cristina Caffarra et al., *Kabuki Dances or Rube Goldberg Machines? Vertical Analyses of Media Mergers*, CPI ANTITRUST CHRON., Aug. 2018, at 8.

²⁸ See, e.g., Kwoka & Slade, *supra* note 27, at 52 (“The above description of EDM does not hold, however, when the downstream stage is subject to variable proportions, for in this case, the unintegrated downstream firm can avoid some of the adverse effects of the inflated wholesale price by substituting away from use of that product.”)

²⁹ See, e.g., Das Varma & De Stefano, *supra* note 26, at 4 (“We show that the weaker the bargaining power of

Another argument for discounting EDM, is that the gains from EDM will be lower—or even zero—if, prior to the merger, the merging parties already had a contract in place to align incentives.³⁰ On this point, it is also important to note that the mere existence of a contract capable of mitigating double marginalization does not tell us about its efficacy compared to vertical integration.³¹ Further, there are costs to contracting, which not only mitigates the ability of contracts to replicate the gains from EDM, but can also suggest merger-specific efficiency gains unrelated to the benefits of EDM.³²

What about the applicability of EDM to digital platforms? Does it even apply for platforms that have a zero price? EDM is fundamentally about conferring an input cost savings; thus—even if there is not a second markup *per se* in terms of price—given that the downstream product has a zero-price, there is still a benefit from not receiving an

the upstream firm, larger is the premerger margin earned by rival downstream firms and greater are their incentive and ability to absorb an input price increase when competing against a more efficient rival (the merged firm).”).

³⁰ This point is emphasized in the recently published Vertical Merger Guidelines. See U.S. Dep’t of Justice & Fed. Trade Comm’n, *Vertical Merger Guidelines* 12 (Jun. 30, 2020), https://www.ftc.gov/system/files/documents/reports/us-department-justice-federal-trade-commission-vertical-merger-guidelines/vertical_merger_guidelines_6-30-20.pdf (hereinafter “VMGs”) (“The

Agencies do not, however, reject the merger specificity of the elimination of double marginalization solely because it could theoretically be achieved but for the merger, if such practices are not reflected in documentary evidence. The Agencies will generally take the same approach to evaluate the likely contractual arrangements absent the transaction as the one they use when evaluating raising rivals’ costs or foreclosure.”). See also Baker et al., *supra* note 3, at 15 (“EDM already might have been achieved before the merger through bargaining that leads to multi-part tariffs, take-or-pay contracts, or other contractual provisions.”).

³¹ See, e.g., O’Brien, *supra* note 26, at 63 (“The use of nonlinear contracts can mitigate double-marginalization, but it does not necessarily eliminate it.”); VMGs at 12 (“The Agencies do not, however, reject the merger specificity of the elimination of double marginalization solely because it could theoretically be achieved but for the merger, if such practices are not reflected in documentary evidence.”).

³² See, e.g., Klein et al. (1978), *supra* note 8, at 298 (“The crucial assumption analysis of this paper is that, as assets become more specific and more appropriable quasi rents are created (and therefore the possible gains from opportunistic behavior increases), the costs of contracting will generally increase more than the costs of vertical integration.”); Williamson (1971), *supra* note 8, at 113 (“In circumstances, therefore, where protracted bargaining between independent parties to a transaction can reasonably be anticipated, internalization becomes attractive.”). See also *infra* Section III.

input marked above cost. This benefit can also come in the form of properly aligning incentives without distortions from a mark-up.³³ Further, EDM could be more relevant for the monetization side of a zero-price platform, such as for advertisers. While there is not a great deal of economic research explicitly linking EDM and platforms, the benefits of EDM are clearly applicable to platforms.³⁴

III. TRANSACTION COST EFFICIENCIES AND MERGER SPECIFICITY

Fundamental to the assessment of vertical mergers and integration are the potential efficiency gains. As the 2020 Vertical Merger Guidelines state,³⁵ agencies will evaluate efficiency claims as set forth in the 2010 Horizontal Merger Guidelines.³⁶ Specifically, agencies generally only consider “cognizable” efficiencies—namely, claims that are valid, merger-specific, and verified.³⁷ Moreover, when evaluating the merger specificity of an efficiency, the 2010 Guidelines say the Agencies “do not insist upon a less restrictive alternative that is merely theoretical.”³⁸

Efficiencies are central to the assessment of vertical mergers because they involve combining complementary assets in a production process. This simple truth distinguishes vertical mergers from horizontal ones and is most certainly not to suggest that horizontal mergers cannot realize efficiencies, as the evaluation of efficiencies is

³³ For example, by merging with an upstream input supplier such as a data supplier, the digital platform could better integrate the upstream data throughout the platform without the distortions caused by a markup.

³⁴ See, e.g., E. Glen Weyl, *Double Marginalization in Two-Sided Markets* (2008) (manuscript at 31), <https://ssrn.com/abstract=1324412> (“The basic message of this paper is basic logic of double marginalization extends to two-sided markets.”).

³⁵ See VMGs at 11.

³⁶ See U.S. Dep’t of Justice & Fed. Trade Comm’n, *Horizontal Merger Guidelines* (Aug. 19, 2010), <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>.

³⁷ *Id.* at 30. In this context, “valid” means efficiencies that “do not arise from anticompetitive reductions in output or service.” *Id.*

³⁸ *Id.*

integral to a rule of reason analysis.³⁹ It is perhaps important to consider, however, that many efficiencies from horizontal mergers are fundamentally vertical in nature.⁴⁰

In a similar way, vertical mergers can allow firms to realize efficiencies through the combination of assets that, in turn, results in cost savings and greater innovation within the production process.⁴¹ In theory and in certain practices, the benefits of asset integration can be achieved through contract.⁴² In fact, the efficiency justifications for vertical controls, such as resale price maintenance, are based on using those controls to replicate the incentives of an integrated firm.⁴³

This choice between vertical integration and vertical controls/contracts was formalized in the seminal work of Ronald Coase.⁴⁴ Coase's central thesis is that firms exist because there are transaction costs to use the market, that is, costs to use the price mechanism, which also explains the boundaries of firms. Subsequent to Coase, a robust

³⁹ See *id.* at 30–31. Nevertheless, questions remain regarding the degree to which courts accept efficiency defenses in horizontal mergers. See, e.g., Brian Facey et al., *Mind the Gap: Merger Efficiencies in the United States and Canada*, 32 ANTITRUST, Spring 2018, at 64, 66, (“In the United States, the efficiencies defense generally lands like a dubious alibi—necessarily considered but very seldom credited.”); Erin L. Shencopp & Nathaniel J. Harris, *Using Efficiencies to Defend Mergers: The Current Legal Landscape*, ANTITRUST SOURCE, April 2019, at 1, 5 (“courts tend to conclude either that the efficiencies are not merger-specific or verifiable, or that the merger will not harm competition and appears to generate efficiencies.”).

⁴⁰ For instance, consider the cost savings from combining two (previously independent) production processes and selecting the more efficient aspects of each process. In effect, the horizontal merger has the potential to create a new, third, process that integrates the best of both processes.

⁴¹ As discussed in the prior section, this is quite different from the benefits of EDM. See *supra* Section II. EDM removes a “pecuniary externality,” which is the idea that separate units along a supply chain do not incorporate how their pricing decisions impact each other; consequently, an integrated firm will properly internalize those externalities, which ultimately results in both higher profits for the integrated firm and higher surplus for consumers. Importantly, while EDM puts downward pressure on prices, merger-specific efficiencies can both lower prices as well as result in greater levels of innovation and higher quality products.

⁴² See, e.g., Paul L. Joskow, *Vertical Integration and Long-Term Contracts: The Case of Coal-Burning Electric Generating Plants*, 1 J.L. ECON. & ORG. 33 (1985) (examining vertical practices of the coal industry).

⁴³ See, e.g., Ralph A. Winter, *Vertical Control and Price Versus Nonprice Competition*, 108 Q.J. ECON 61, 69–72 (1993); O'Brien, *supra* note 26, at 62–68.

⁴⁴ See Coase, *supra* note 7, at 390–98.

literature developed on transaction costs economics⁴⁵ and the importance of incorporating such considerations into any antitrust analyses.⁴⁶ In particular, this literature has demonstrated, both theoretically and empirically, that the decision whether to contract or to vertically integrate is often driven by the relatively high costs of contracting⁴⁷ as well as by concerns regarding the enforcement of contracts,⁴⁸ and opportunistic behavior.⁴⁹ This literature suggests that such transaction costs efficiencies in the vertical merger context often will be cognizable and rejects an approach that would presume such efficiencies are not merger-specific because they can theoretically be achieved via contract.⁵⁰

Of course, industries can mature and evolve, which can also change the costs of contracting relative to vertical integration.⁵¹ One potential example is the growth of cloud computing and associated services, which previously had to be developed and performed in-house.⁵² This development would seem to lower the cost of entry, including

⁴⁵ See, e.g., Williamson (1971, 1979) *supra* note 8.

⁴⁶ See, e.g., Dennis W. Carlton & Bryan Keating, *Antitrust, Transaction Costs, and Merger Simulation with Nonlinear Pricing*, 58 J.L. & ECON. 269 (2015); Dennis W. Carlton & Bryan Keating, *Rethinking Antitrust in the Presence of Transaction Costs: Coasian Implications*, 46 REV. INDUS. ORG. 307 (2015).

⁴⁷ See, e.g., Bresnahan & Levin, *supra* note 9, at 853 (“Theoretical work in the first tradition argues that certain features of transactions create particular problems for arm’s-length contracting. These can include difficulty anticipating future contingencies, ambiguity in the nature of tasks and decisions to be carried out, the need to use specific assets, or an inability to measure and verify transaction outcomes.”).

⁴⁸ See Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 38–39 (1960); Harold Demsetz, *The Exchange and Enforcement of Property Rights*, 7 J.L. & ECON. 11, 16–26 (1964).

⁴⁹ See generally Klein et al. (1978), *supra* note 8.

⁵⁰ See, e.g., Statement of Professor Francine Lafontaine, Fed. Trade Comm’n, HEARINGS ON COMPETITION AND CONSUMER PROTECTION IN THE 21ST CENTURY, Tr. at 73 (Nov. 1, 2018) (vertical contracts “do not easily generate the same outcome as what a vertical merger could do because of demand uncertainty, risk aversion, information asymmetries, . . . [and] incentive problems.”).

⁵¹ See, e.g., George Stigler, *The Division of Labor is Limited by the Extent of the Market*, 59 J. POL. ECON. 185 (1951).

⁵² Some industries continue to maintain internal systems including insurance, financial services, and health care organizations. See, e.g., Angus Loten, *Cloud Demand Drives Data Center Market to New Records*, WALL ST. J. (Feb. 27, 2020), <https://www.wsj.com/articles/cloud-demand-drives-data-center-market-to-new-records-11582804801>.

into digital markets, but it also suggests that efficiencies based on computational and server scale economies are less likely to be merger-specific.

As it applies to digital markets, vertical mergers also can result in efficiencies associated with combining trade secrets, as firms in this sector are particularly likely to use trade secrets as a form of intellectual property protection.⁵³ One concern with the use of trade secrets is the difficulty in licensing them,⁵⁴ or even sharing them in the course of a business relationship, without the potential for large losses from the accidental or intentional disclosure of those secrets. Vertical integration mitigates this potential loss from the sharing of trade secrets.⁵⁵

Other potential efficiencies from integration include the benefits from assurances of supply, particularly during times of uncertainty.⁵⁶ This would seem particularly relevant for products that have relatively short life cycles such as smartphone models, as these products are more dependent on properly scheduled product launches. Another benefit of integration is that it can alleviate the difficulties that arise from the possible

⁵³ See, e.g., John W. Mashni, *Trade Secrets: The Big Thing for Tech Companies*, BIZTECH LAW BLOG (May 15, 2014), <https://www.michiganitlaw.com/Trade-Secrets-Tech-Companies> (“What do Google and WD-40 have in common? They can both attribute their continued success to trade secrets.”); Douglas R. Nemec & P. Anthony Sammi, *The Rise of Trade Secret Litigation in the Digital Age*, SKADDEN’S 2018 INSIGHTS (Jan. 23, 2018), <https://www.skadden.com/insights/publications/2018/01/2018-insights/the-rise-of-trade-secret-litigation> (“In 2014, the U.S. Supreme Court decided *Alice Corp. Pty. Ltd. v. CLS Bank International*, which drastically curtailed patent protection for software and business methods. As a result, many companies have lost confidence in the ability to protect their technology with patents and are instead turning to trade secrets. The comparative lack of acquisition costs for trade secrets as opposed to patents only enhances their appeal.”).

⁵⁴ See, e.g., Elizabeth Miller, Note, *Antitrust Restrictions on Trade Secret Licensing: A Legal Review and Economic Analysis*, 52 L. & CONTEMP. PROBS. 183 (1989); Dan L. Burk, *Misappropriation of Trade Secrets in Biotechnology Licensing*, 4 ALB. L.J. SCI. & TECH. 121 (1994).

⁵⁵ This idea can be thought of as an extension of the concept that the existence of firms can be partly explained by the need for “controlled information” like technical production information, which can occur more efficiently within the boundaries of a firm. See H.B. Malmgren, *Information, Expectations and the Theory of the Firm*, 75 Q.J. ECON. 399, 405–11 (1961).

⁵⁶ See, e.g., Patrick Bolton & Michael Whinston, *Incomplete Contracts, Vertical Integration, and Supply Assurance*, 60 REV. ECON. STUD. 121 (1993); Dennis Carlton, *Vertical Integration in Competitive Markets Under Uncertainty*, 27 J. INDUS. ECON. 189 (1979).

formation of bilateral monopolies within a specific area of complementary technologies.⁵⁷ There are also quality externalities that are internalized with vertical integration that could result in significant benefits to innovation.⁵⁸

IV. EMPIRICAL EVIDENCE ON THE WELFARE IMPACT OF VERTICAL MERGERS

The importance of EDM and efficiency rationales raise important questions as to the ultimate price, quantity, and quality effects of vertical mergers.⁵⁹ This further elevates the value of empirical evidence of the effects of vertical mergers in terms of informing antitrust policy. Indeed, the U.S. Federal Trade Commission (FTC) devoted a great deal of time on this precise issue at its 2018 hearing on vertical mergers.⁶⁰

Economics has a long history of empirically evaluating vertical integration.⁶¹ The

⁵⁷ For instance, in an emerging area of technology, it could be the case that the market is not particularly “thick” in terms of possible substitutes for both the upstream and downstream trading partners. As Stigler explains:

Young industries are often strangers to the established economic system. They require new kinds or qualities of materials and hence make their own; they must overcome technical problems in the use of their products and cannot wait for potential users to overcome them; they must persuade customers to abandon other commodities and find no specialized merchants to undertake this task.

Stigler, *supra* note 51, at 190. Consequently, a bilateral monopoly could form, which exacerbates issues of opportunism and markups.

⁵⁸ See, e.g., Henry Ogden Armour & David J. Teece, *Vertical Integration and Technological Innovation*, 62 REV. ECON. & STAT. 470, 470 (1980) (“[W]e hypothesize that when various stages of a production process bear technological similarities and complementarities, common ownership of R&D and the production facilities will enhance technological innovation.”); Francine Lafontaine & Kathryn L. Shaw, *Targeting Managerial Control: Evidence from Franchising*, 36 RAND J. ECON. 131 (2005) (examining how vertical integration can protect brands from the free-rider problem).

⁵⁹ Cf. Spengler, *supra* note 9, at 347 (“Vertical integration, on the contrary, does not, as such, serve to reduce competition and may, if the economy is already ridden by deviations from competition, operate to intensify competition.”).

⁶⁰ See Fed. Trade Comm’n, *FTC Hearing #5: Vertical Merger Analysis and the Role of the Consumer Welfare Standard in U.S. Antitrust Law* (Nov. 1, 2018), HEARINGS ON COMPETITION AND CONSUMER PROTECTION IN THE 21ST CENTURY, <https://www.ftc.gov/news-events/events-calendar/ftc-hearing-5-competition-consumer-protection-21st-century>.

⁶¹ See, e.g., Joskow, *supra* note 42; Scott E. Masten, *The Organization of Production: Evidence from the Aerospace Industry*, 27 J. L. & ECON. 403 (1984); Kirk Monteverde & David J. Teece, *Supplier Switching Costs and Vertical Integration in the Automobile Industry*, 13 BELL J. ECON. 206 (1982).

two most widely cited economic studies that summarize the empirical evidence on vertical integration are Lafontaine & Slade and Cooper et al.⁶² After comprehensively reviewing prior vertical integration research, Lafontaine & Slade conclude: “[C]onsistent with the large set of efficiency motives for vertical mergers that we have described so far, the evidence on the consequences of vertical mergers suggests that consumers mostly benefit . . .”⁶³ Similarly, Cooper et al. report: “Most studies find evidence that vertical restraints/vertical integration are procompetitive.”⁶⁴ Additionally, O’Brien states that “the empirical literature on [resale price maintenance and exclusive territories], vertical integration, and non-linear contracting suggests that these practices have been used to mitigate double marginalization and induce demand increasing activities by retailers. With few exceptions, the literature does not support the view that these practices are used for anticompetitive reasons.”⁶⁵

The evidence they summarize remains valuable and should be considered in policy discussions regarding vertical mergers; although, it must be acknowledged that the studies are now over a decade old. In a 2018 comment to the FTC, the Global Antitrust Institute (GAI) aimed to update the empirical evidence on vertical mergers with an evaluation of some more recent studies.⁶⁶ Specifically, the GAI examined published research in peer-reviewed journals between 2009 and 2018 that empirically analyzed the welfare consequences of vertical mergers in the U.S.⁶⁷ The following table summarizes

⁶² Lafontaine & Slade, *supra* note 18; James C. Cooper et al., *Vertical Antitrust Policy as a Problem of Inference*, 23 INT’L J. INDUS. ORG. 639 (2005).

⁶³ Lafontaine & Slade, *supra* note 18, at 663.

⁶⁴ Cooper et al., *supra* note 62, at 658.

⁶⁵ O’Brien, *supra* note 26, at 76.

⁶⁶ See Global Antitrust Institute, Comment Letter on Federal Trade Commission’s Hearings on Competition and Consumer Protection in the 21st Century, Vertical Mergers 5–9 (Geo. Mason Law & Econ. Research Paper No. 18-27, 2018), <https://ssrn.com/abstract=3245940>.

⁶⁷ The comment did not offer an exhaustive list of the literature but a snapshot of research available on EconLit and in a general web search and encouraged further research on the topic. See *id.* at 6. Of the original thirteen papers examined, one should have been omitted: Orley C. Ashenfelter et al., *Efficiencies Brewed:*

the findings of these empirical studies.⁶⁸

Pricing and Consolidation in the US Beer Industry, 46 RAND J. ECON. 328 (2015), because it did not study a vertical component of the examined merger. Further, some questions arose regarding whether another included study, Crawford et al., was properly characterized as showing, on net and on average, positive welfare effects. See Gregory S. Crawford et al., *The Welfare Effects of Vertical Integration in Multichannel Television Markets*, 86 ECONOMETRICA 891 (2018). On this point, however, others have reached the same conclusion as the GAI commenters about Crawford et al.’s overall findings. For instance, Froeb et al. observe: “Crawford et al. . . . find that vertical integration between regional sports networks and cable TV distributors results in increased geographic distribution of the networks and a corresponding increase in consumer and total welfare.” Luke M. Froeb et al., *Economics at the Antitrust Division: 2017-2018*, 53 REV. INDUS. ORG. 637, 649 (2018). In a later article, the authors of the original Crawford et al. study summarize their results in the following manner:

We also are able to examine how [anticompetitive and procompetitive effects] net out for consumer welfare. We find a fair amount of heterogeneity, with some markets showing complete foreclosure and consumer losses from vertical integration at our point estimates. (However, we are not able to statistically reject the possibility that those individual cases had no consumer harm.) Overall, however, on average across 26 [regional sports networks], we find that there would be a statistically significant positive effect on consumer welfare from vertical integration, despite the incentives for foreclosure that it would create.

Crawford et al., *AT&T/Time Warner and Antitrust Policy Toward Vertical Mergers*, CPI ANTITRUST CHRON., July 2019, at 3.

⁶⁸ Note that the table is simply a quick snapshot of the studies’ findings, and they should be read in their entirety to get the full context.

The Welfare Effects of Vertical Integration (2009-2018)⁶⁹

Author	Year	Industry	Data/Technique	Variable Examined (x)	Effect on x	Effect on Welfare
Suzuki	2009	Multichannel Television	Panel; Difference-in-Differences	Cost Foreclosure	- +	mixed
Hanssen	2010	Motion Pictures	Cross-Sectional	Film Run Adjustments Foreclosure	+ no effect	+
Taylor et al.	2010	Retail Gasoline	Panel; Difference-in-Differences	Price	+ (close to zero)	little economic significance
Forman & Gron	2011	Insurance	Panel	Adoption of Information Technology	+ (at one level) & no effect (at another level)	not addressed
Malik	2011	Pharmaceutical	Panel	New Product Development	+	+
Cohen	2013	Retail Milk	Panel	Simulated Effects on Price from Vertical Divestiture	-	-
Atalay et al.	2014	Various	Panel	Productivity	+	+
Baker et al.	2014	Hospitals	Panel	Price-Spending Hospital Admissions	+ -	mixed to negative
Austin	2015	Retail Gasoline	Panel	Price	-	+
Gil & Warzynski	2015	Video Games	Panel	Price Quantity Quality	+ + +	+
Koch et al.	2017	Hospitals	Panel; Difference-in-Differences	Physician Hospital Utilization Spending	+ mixed	not addressed
Crawford et al.	2018	Multichannel Television	Panel	Price	mixed to positive	mixed to positive

While vertical integration can certainly raise rivals' costs and foreclose rivals in

⁶⁹ The included studies are Ayako Suzuki, *Market Foreclosure and Vertical Merger: A Case Study of the Vertical Merger Between Turner Broadcasting and Time Warner*, 27 INT'L J. INDUS. ORG. 532 (2009); F. Andrew Hanssen, *Vertical Integration During the Hollywood Studio Era*, 53 J.L. & ECON. 519 (2010); Christopher T. Taylor et al., *Vertical Relationships and Competition in Retail Gasoline Markets: Empirical Evidence from Contract Changes in Southern California: Comment*, 100 AM. ECON. REV. 1269, 1269 (2010) ("Ultimately, however, we find an effect of tenths of a cent per gallon, which is of little economic significance . . . Our empirical results cast doubt on whether ARCO's acquisition of Thrifty led to higher prices."); Chris Forman & Anne Gron, *Vertical Integration and Information Technology Investment in the Insurance Industry*, 27 J.L. ECON. & ORG. 180 (2011); Tariq Malik, *Vertical Alliance and Vertical Integration for the Inflow of Technology and New Product Development in the Pharmaceutical Industry*, 23 TECH. ANALYSIS & STRATEGIC MGMT. 851 (2011); Michael A. Cohen, *A Study of Vertical Integration and Vertical Divestiture: The Case of Store Brand Milk Sourcing in Boston*, 22 J. ECON. & MGMT. STRATEGY 101 (2013); Enghin Atalay et al., *Vertical Integration and Input Flows*, 104 AM. ECON. REV. 1120 (2014); Laurence C. Baker et al., *Vertical Integration: Hospital Ownership of Physician Practices is Associated with Higher Prices and Spending*, 33 HEALTH AFF. 756, 761-62 (2014) ("In some circumstances, vertical integration was associated with a lower rate of hospital admissions. . . . Taken together, our results provide

theory, there is only limited empirical evidence supporting such a finding to a degree that legal presumptions should change. Thus, on net and on average, we find the following statement from the prior 1984 Merger Guidelines still holds today: “Although non-horizontal mergers are less likely than horizontal mergers to create competitive problems, they are not invariably innocuous.”⁷⁰ Since 1984, the empirical literature has continued to support the validity of this statement—the economic roots of which date back to the original work of Spengler.⁷¹

Recent economic work has challenged the analysis, interpretation of results, and policy implications that emerged from the prior scholarship on vertical mergers and integration.⁷² While these recent works have raised a number of relevant points and should also be considered in policy discussions, the evidence remains that empirically evaluated vertical mergers, taken as a whole, do not result in outcomes that are consistent

a mixed, although somewhat negative, picture of vertical integration from the perspective of the privately insured.”); Joshua Karl Austin, *Vertical Integration and Pricing Outcomes in Retail Gasoline Markets*, 35 ECON. BULL. 1 (2015); Ricard Gil & Frederic Warzynski, *Vertical Integration, Exclusivity, and Game Sales Performance in the US Video Game Industry*, 31 J.L. ECON. & ORG. 143, 166 (2015) (“Our results indicate that the superior performance of integrated games is mainly due to better timing of release strategies through softer competition at release, and inherently higher quality of video games.”); Thomas G. Koch et al., *How Vertical Integration Affects the Quantity and Cost of Care for Medicare Beneficiaries*, 52 J. HEALTH ECON. 19 (2017); Gregory S. Crawford et al., *The Welfare Effects of Vertical Integration in Multichannel Television Markets*, 86 ECONOMETRICA 891 (2018).

⁷⁰ U.S. Dep’t of Justice, *1984 Merger Guidelines* 24 (Jun. 14, 1984), <https://www.justice.gov/sites/default/files/atr/legacy/2007/07/11/11249.pdf>.

⁷¹ See Spengler, *supra* note 9, at 347–50.

⁷² See, e.g., Marissa Beck & Fiona Scott Morton, *Evaluating the Evidence of Vertical Mergers* (Feb. 26, 2020), <https://ssrn.com/abstract=3554073>. Specifically, the authors criticize Lafontaine & Slade, Cooper et al., and the GAI comment’s interpretation of the empirical evidence. Their main conclusion is “that the empirical evidence evaluated in these articles does not show that vertical mergers are generally procompetitive, or generally anticompetitive” because “many studies cannot determine the net effect of the vertical integration on welfare.” *Id.* at 2–3. We certainly agree with the authors that studies in the literature find procompetitive, anticompetitive, and mixed results. We also agree that interpreting empirical results in terms of welfare and antitrust is messy and not always ideal. See, e.g., Bresnahan & Levin, *supra* note 9, Section III. We do not believe, however, that the extant empirical literature—even adopting the authors’ interpretations of individual studies, a number of which are debatable—supports a change in presumptions regarding vertical mergers.

with a hypothesis that vertical mergers, and vertical integration, are generally anticompetitive. Rather, the results are more consistent with the finding that vertical mergers, to the extent that we can determine the impact on welfare, can be competitively neutral, procompetitive, anticompetitive, or cause mixed welfare effects. Thus, the current state of the evidence is consistent with continuing to evaluate vertical mergers under a full rule of reason analysis.

CONCLUSION

Vertical integration is fundamental to a well-functioning market economy, whether in traditional industrial sectors or in digital markets. Vertical mergers can achieve that integration in a manner that internalizes pricing externalities—that is, through EDM—and solves problems associated with high transaction costs, opportunistic behavior, and dampened incentives to innovate. Naturally, vertical mergers can also raise anticompetitive concerns of rival exclusion that could lead to adverse outcomes for consumers. Antitrust agencies and courts have properly relied on a rule of reason framework to assess vertical mergers because of the need to weigh these benefits with the potential for harm.

The Economics of Vertical Restraints in Digital Markets

Daniel P. O'Brien

INTRODUCTION¹

A. Purpose of This Chapter

Vertical restraints are contractual arrangements between firms at different levels in a supply chain (e.g., manufacturer and retailer, manufacturer and distributor, distributor and retailer) that are more complex than simple per-unit pricing arrangements. The purpose of this chapter is to provide an overview of the economics of vertical restraints and thereby provide an economic foundation for the antitrust analysis of vertical restraints.

The literature on vertical restraints is large. This chapter touches on many of the relevant concepts at a high level, references past work for certain ideas, and focuses in depth on four main issues: (i) the general nature of double marginalization and the benefits of vertical restraints that eliminate it in both single- and multi-product settings;² (ii) the welfare effects of vertical restraints that address service externalities; (iii) the implications of bilateral contracting and bargaining for the effects of vertical restraints; and (iv) the effects of anti-steering provisions, a vertical restraint that does not appear explicitly in most textbooks but has been prominent in antitrust cases in the digital age.

¹ This chapter builds on previous work on the economics of vertical integration and restraints, particularly a previous survey, Daniel P. O'Brien, *The Antitrust Treatment of Vertical Restraints: Beyond the Possibility Theorems*, in THE PROS AND CONS OF VERTICAL RESTRAINTS 40, 51 (2008), <http://www.konkurrenssverket.se/globalassets/english/research/report-the-pros-and-cons-of-vertical-restraints-18mb.pdf>. I thank Harrison Kummer for excellent research assistance.

² Antitrust attitudes toward vertical mergers emphasize the tradeoff between the elimination of double marginalization ("EDM") and the foreclosure of rivals, and because vertical restraints frequently involve motivations similar to vertical mergers, vertical restraints can also involve this tradeoff. This was the central tradeoff evaluated by the economic experts in the AT&T-Time Warner merger, and it is a central focus of the recently issued U.S. Vertical Merger Guidelines.

B. The Digital and Non-Digital Economies

Although this volume is directed at antitrust analysis for the “Digital Economy,” the analysis in this chapter is equally applicable to all (e)commerce irrespective of the degree of ‘e’ involved in the commerce. The advent of the digital age has not changed the economic concepts that have developed since Adam Smith’s *Wealth of Nations*³ to understand the role of contracts in the allocation of goods and resources in the economy.

Certain factors that are relevant for the economic analysis of vertical restraints can differ between environments that make heavy use of ecommerce and environments that do not, but these factors affect the *characteristics* of the market under study, not the economic principles that govern the analysis. For example, the increase in the number of next-day deliveries in the digital age likely occurred because the cost of next day delivery fell due to the digitization of ordering and inventory management and the logistics of distribution.⁴ There are no new economic concepts required to understand the effects of lower costs on output. Similarly, a high-end golf club manufacturer’s motivation to prevent consumers from getting fitted for the clubs at significant cost to a golf shop and then purchasing the clubs at discounted prices on the internet does not require any new “digital” economics to understand.⁵ The manufacturer’s concern that golf shops would stop supplying fitting services under these circumstances exists whether the discounted clubs are sold on the internet or in a discount brick & mortar shop. The golf club

³ ADAM SMITH, *THE WEALTH OF NATIONS: AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS* (Harriman House Ltd 2010) (1776).

⁴ By one estimate, Amazon’s warehouse expansion between 2006 and 2018 “reduced its total shipping cost by over 50% and increased its profit margin by between 5 and 14% since 2006,” and that “prices on Amazon have fallen by approximately 40% over the same period, suggesting that a significant share of the cost savings have been passed on to consumers.” Jean-François Houde, Peter Newberry & Katja Seim, *Economies of Density in E-Commerce: A Study of Amazon’s Fulfillment Center Network* ii (Nat’l Bureau of Econ. Rsch., Working Paper No. 23361, 2017).

⁵ See Brief of PING, Inc. as Amicus Curiae in Support of Petitioner at 3–5, *Leegin Creative Leather Prods. v. PSKS, Inc.*, 551 U.S. 877 (2007) (No. 06-480), 2007 WL 173680.

manufacturer's concern may be higher in the digital age, but economists knew long before the digital age that a reduction in the cost of free-riding (go home and order the clubs at discounted prices for delivery the next day from an outlet with minimal overhead) is likely to increase free riding.

While ecommerce has not created new economic constructs, there is little doubt that certain industry characteristics (e.g., economies of scale, network effects) that can affect the conclusions of an economic analysis have become more prevalent. These characteristics can make it more likely or less likely that specific vertical restraints harm competition, depending on the circumstances.

C. Relationship to Vertical Mergers/Integration

Many issues that are important in the analysis of vertical mergers are also important in the analysis of vertical restraints. Indeed, much of the literature on vertical restraints examines whether vertical restraints can achieve "the vertically integrated" or "fully integrated" outcome, which typically means the outcome that would arise if an upstream seller owned its distributors or a downstream buyer owned its suppliers. The logic for this approach is that many important motivations for vertical restraints involve designing contracts that provide the contracting parties with incentives to make independent decisions that maximize their *joint* profits (their "fully integrated" profits), so they can divide those profits with transfer payments. This means that in many contexts, vertical restraints can have similar or even the same effects as vertical integration, depending on the context.

John Yun has a separate chapter in this Report on vertical integration and mergers. There is inevitable overlap between the content of these chapters. I will be clear about when the analysis in this chapter applies to questions about vertical mergers and when it does not. The reader is referred to Yun's chapter for a discussion focused specifically on vertical mergers.

I. OVERVIEW OF THE MOTIVATIONS FOR AND EFFECTS OF VERTICAL RESTRAINTS

A. *The Nature of the Problem*

Firms at different stages of production (e.g., manufacturer and distributor, manufacturer and retailer, distributor and retailer) contract with each other to exchange goods and services that the buyer will either resell or use to make another product. The contracting seller is commonly referred to as the *upstream* firm operating in the upstream market (although the boundary of the relevant antitrust market at the upstream level is not always obvious and often requires analysis). The contracting buyer is commonly referred to as the *downstream* firm operating in the downstream market (with the same caveat about the boundaries of the relevant antitrust market). The contract between the upstream and downstream firms is called a *vertical contract*.

The simplest vertical contract and the one discussed first in most textbooks on industrial organization is a *linear tariff*, where the upstream firm charges the downstream firm a per-unit price—a “linear” price—for the product.⁶ I use the term “tariff” to distinguish the part of the vertical contract that involves money exchanged between the upstream and downstream firm from other parts of the contract. While linear tariffs are simple, in many cases firms in a vertical channel can increase their joint profits with contractual terms that go beyond simple linear prices. These terms are called *vertical restraints*. Examples of practices that have been labeled vertical restraints include certain forms of nonlinear pricing (e.g., quantity forcing, all-units discounts, or retroactive rebates), resale price maintenance (“RPM”), exclusive territories (“ET”), exclusive dealing (“ED”), loyalty discounts, anti-steering, tying, and bundled discounts.

The distinguishing characteristic of a vertical restraint is that the amount the downstream firm pays the upstream firm is not represented by a linear tariff but depends

⁶ Denote the number of units sold (the quantity) as Q and the price per unit as w . A linear tariff transfers $T = wQ$ from the downstream buyer to the upstream seller when the buyer purchases the quantity Q .

in some way on downstream prices or quantities (or on other factors, but as we'll see, dependence of prices and quantities encompasses dependence on other factors). Figure 1 provides a concise taxonomy of vertical restraints based on whether they involve single or multiple products and whether the upstream firm's tariff is conditioned on its own quantity or price or also on the quantities or prices of rival products.⁷

Figure 1: Taxonomy of Vertical Restraints

	Single Product	Multi-Product
Own Quantities or Prices	<ul style="list-style-type: none"> • Tying/bundling units: <ul style="list-style-type: none"> - Incremental units discounts - All-units discounts • RPM and Exclusive territories 	<ul style="list-style-type: none"> • Tying/bundling • Bundled discounts
Own and Rivals' Quantities or Prices	<ul style="list-style-type: none"> • "Loyalty" discounts • Anti-steering • Exclusive dealing 	<ul style="list-style-type: none"> • Bundled "loyalty" discounts • Requirements tying

The reader might find it surprising to see exclusive dealing classified as a tariff conditioned on own and rivals' quantities or prices like loyalty discounts and anti-steering, and to see volume discounts classified as a form of tying or bundling. The explanation is that in a formal economic sense, all vertical restraints involve conditioning monetary transfers on own or own and rivals' quantities or prices. For example, exclusive dealing can be interpreted as a special case of a share-based loyalty discount in which the

⁷ The taxonomy in Figure 1 is adapted from the taxonomy of "conditional pricing practices" presented in PATRICK DEGRABA ET AL., FED. TRADE COMM'N, CONDITIONAL PRICING PRACTICES: A SHORT PRIMER (2017), <https://ssrn.com/abstract=3039548>. That paper is a background document for the Public Workshop on Conditional Pricing Practices cosponsored by the DOJ and FTC on June 23, 2014. Because RPM and exclusive territories were not among the practices discussed at the workshop, they were excluded from the taxonomy of conditional pricing practices. I have included them here as vertical restraints in the appropriate cells in Figure 1.

share threshold is 100 percent and the discount offered for reaching the threshold is large enough that the downstream firm would not purchase positive amounts from a rival. Similarly, the floor on a rival's retail price imposed through anti-steering is a weak form of exclusive dealing in the sense that the floor limits the amount of the rival's product the downstream firm will sell. Because ED, loyalty discounts, and anti-steering are related in this way, insights from the exclusive dealing literature can be helpful in the analysis of the other practices. Likewise, a volume discount offered for a single product technically involves bundling over the units of that product, as explained in detail below. Although antitrust law does not refer to volume discounts as a form of tying or bundling, the economic literature recognizes the connection, and insights from that literature on how nonlinear pricing eliminates double marginalization are helpful in the analysis of bundled discounts in the sale of multiple products.

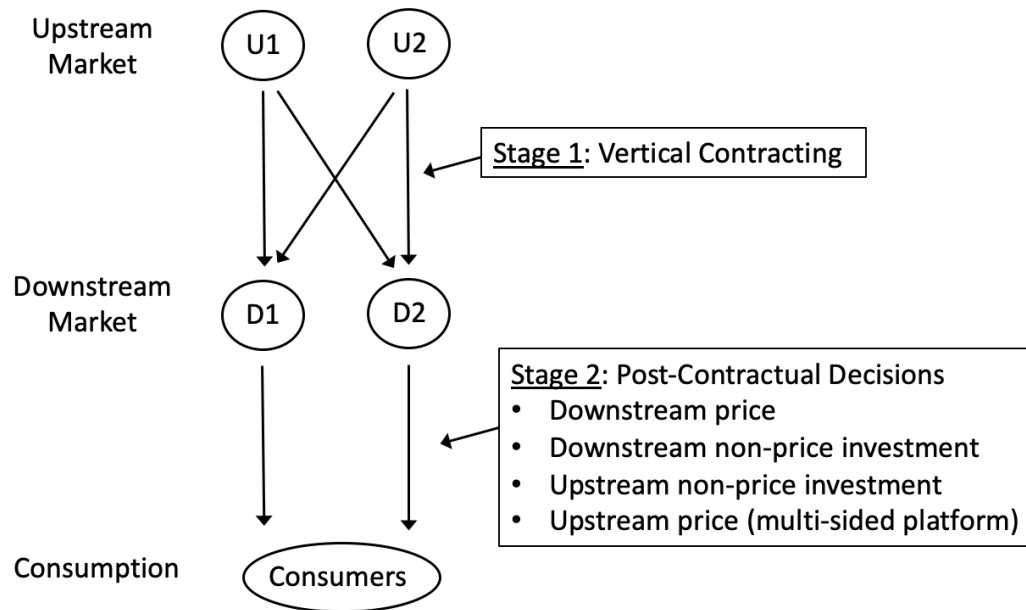
It should be noted that both the economic literature and law are not always clear on the precise meaning of the term "vertical restraint," in particular, whether contracts that have nonlinear tariffs but no other restraints should be called "vertical restraints." However, because nonlinear tariffs have an element of bundling, which can be a form of tying (see Section III.A.1 below), and some nonlinear tariffs have been found to be anticompetitive restraints of trade (e.g., all-units discounts and quantity forcing), I adopt the convention that vertical contracts that depart from simple linear tariffs involve vertical restraints.

Why do firms use vertical restraints? It will be helpful to address this question with reference to the classic bubble diagram that economists have found useful in analyzing vertical contracts.

Figure 2 shows production and sales flows in a typical vertical channel, where upstream firms U1 and U2 (and potentially others) sell inputs to downstream firms D1 and D2 (and potentially others) who use the inputs to produce products for sale to final customers. The inputs might be finished products that downstream firms simply resell

to final consumers, as in retailing, or they may be used with other inputs in a production process that produces a finished good or another intermediate good.

Figure 2: Vertical Structure, Contracts, and Decisions



In most of the economics literature, contract design and the other decisions that vertically related firms make are modeled as a multi-stage game, often a two-stage game. In stage 1, firms agree to supply terms, including the tariff and other provisions in the contract. In stage 2, firms in the upstream and downstream markets independently make their remaining strategic decisions subject to the contractual terms determined in stage 1. In the classic vertical contracting environment, stage-two decisions include downstream price and non-price decisions and upstream non-price decisions. In multi-sided platforms, stage-two decisions may also involve prices charged to other participants in the platform. Non-price decisions at both levels may involve investments in quality, service, or advertising that typically affect the demand for the firms' products, or they may involve investments to lower production costs. Throughout this chapter, I conceptualize the vertical contracting problem with this two-stage game framework, as

virtually all of the economics literature on vertical restraints is nested within this framework.

In designing their vertical contracts, the contracting parties seek to maximize their profits. In pursuing this objective, firms face two high-level concerns: (1) contractual efficiency, and (2) competition. Vertical restraints are motivated by one or both of these concerns.

B. Contractual Efficiency

Focus first on contracting between U1 and D1, holding fixed the contracts and stage two decisions involving competitors (i.e., holding fixed the contracts and decisions of U2 and D2 in Figure 2.) This abstraction helps highlight the contractual efficiency aspects of vertical restraints.

Suppose initially that firms and courts have complete information and there is no risk or uncertainty and no transaction costs. In the absence of legal constraints, U1 and D1 then can write a *complete contract* that specifies or constrains in some way all of their stage-two decisions. If the firms can use transfer payments that do not depend on output or their other decisions (e.g., fixed fees), their optimal contract will specify all stage two choices made by U1 and D1 (e.g., D1's price, D1's investment, U1's investment) to maximize joint profits and a fixed transfer payment to divide joint profits. This complete contract would involve vertical restraints under the definition given above (departures from simple linear pricing), although only some of the terms in the contract have been labeled as such in the antitrust literature. In particular, contractual terms that specify or constrain the downstream price would involve some form of RPM; terms that specify or constrain the quantity to be sold or purchased could involve quantity forcing, all-units discounts, take-or-pay provisions; terms that constrain where D1 can sell or the suppliers from which it may buy (or that condition the tariff on these factors) would involve some form of exclusivity, etc. Although other terms in the contract that specify non-price

choices like upstream or downstream investment or advertising are conceptually similar to the terms that have been labelled vertical restraints, such terms generally have not been so labeled in the literature or in antitrust investigations. Importantly, constraints on decisions that have been labeled as vertical restraints and have drawn antitrust scrutiny, e.g., RPM and all-units discounts, are conceptually no different than terms that are not considered vertical restraints, such as joint advertising arrangements or other joint investment projects. Yet, in all cases where fixed transfers are feasible, terms that go beyond simple linear tariffs presumably are designed to maximize some notion of joint profits. The policy question is whether these efforts harm the competitive process in a way that reduces welfare.

Two factors interfere with the idealized “efficient” contract (efficient for the firms) just described. First, it may not be feasible for firms to specify all stage-two decisions in the contract because it may be too costly to monitor these actions and too difficult for a court to verify them in a contract dispute. This circumstance, often due to transaction costs, is known as a situation of *incomplete contracts*. For example, post-contractual demand-enhancing efforts by the upstream firm (e.g., marketing or decisions that affect quality) and downstream firm (e.g., marketing or product demonstrations) may be too costly to monitor, in which case it would not make sense to specify these decisions in the contract. In this case, although firms may choose not to contract directly over these decisions, they may include vertical restraints in the contract that provide incentives that influence these decisions. In many such cases, vertical restraints can achieve the fully integrated outcome even though the contract is incomplete because the vertical restraints align incentives in ways that induce firms to make the same decisions an integrated firm would make. And in many such cases, vertical restraints that increase joint profits and achieve the fully integrated outcome also increase welfare by lowering price or increasing non-price investment by firms at one or both levels of production. And it is well-known that welfare often rises even if price rises because the benefits from increased non-price

investment often exceed the harm due to higher prices. The goal of antitrust policy is to identify those instances in which vertical restraints that substitute for more complete contracts harm the competitive process in ways that reduce welfare.

Factors that impede contractual efficiency and motivate vertical restraints include various externalities, incomplete or imperfect information, and risk. The motivation for vertical restraints to address these issues becomes evident from an understanding of how simple linear tariffs fail to address these issues:

(i) *Double marginalization – the basic vertical externality.* When firms employ linear tariffs, an increase in the wholesale price charged by the upstream firm raises the downstream firm’s marginal cost and lowers downstream profits. Similarly, an increase in the downstream price reduces the quantity demanded and lowers upstream profits. These externalities create double marginalization, which is the double-markup due to successive monopoly, which leads to lower joint profits and output than would be true if the firms could contract in a way to eliminate these externalities, as discussed further below.

While the double-marginalization problem is often described as arising from externalities as in the preceding paragraph, the economic literature also recognizes that elevated wholesale margins due to linear wholesale pricing occur when the upstream firm does not bundle the units of the upstream product that it sells to the downstream buyer.⁸ While not common in antitrust discussions, this understanding is important because it shows that what is called double marginalization in the single product context is also present in the multiproduct context if the products are substitutes and are not bundled. As explained further in Section III.A.1 below, a motivation for bundled

⁸ See ROBERT B. WILSON, *NONLINEAR PRICING* 88–89 (1993); see also Daniel P. O'Brien & Greg Shaffer, *Tying, Bundling, and Double Marginalization* (April 18, 2018) (unpublished manuscript), <https://ssrn.com/abstract=3165280> (“nesting [tying and bundling] into a common framework” and finding that “double marginalization arises . . . from the inability to bundle objects over which the buyer experiences declining incremental benefits.” (internal quotation marks omitted)).

discounts in this context is the desire to eliminate the multiproduct variant of double marginalization.

(ii) *Non-price vertical externalities.* The downstream firm may invest in quality or advertising to increase the demand for the product, which increases upstream profits whenever upstream margins are positive. The upstream firm may invest in quality or advertise so as to increase the demand for the product, which increases downstream profits whenever downstream margins are positive. In either case, investment inflicts a positive externality on the party at the other level in the vertical chain. Other factors equal, this leads to less investment than would occur under full integration.

(iii) *Non-price horizontal externalities.* In situations with multiple firms at either level in the vertical chain, demand-enhancing investments by individual firms may spillover to benefit rival firms. If the investing firm's margin is less than the fully integrated margin, then these externalities lead to less investment than the amount a fully integrated firm would choose.

(iv) *Risk sharing.* In environments where cost or demand is uncertain, the upstream and downstream firms would like to write a contract that shares risk optimally given their risk preferences. As an example, suppose demand is uncertain and the downstream firm is more risk averse than the upstream firm. A higher wholesale price transfers a greater share of the risk to the upstream firm, but it also creates double marginalization.

(v) *Information externalities.* In many economic environments, firms have private information about the nature of the market in which they sell. For example, the downstream firm may have better information than the upstream firm about demand. In this case, linear pricing can worsen double marginalization relative to a nonlinear tariff that elicits the revelation of demand information by the downstream firm.

C. Competition

The second high-level concern of firms involved in vertical contracting is the

impact on competition. U1 and D1 may recognize the impact of their contractual terms on the stage-two decisions of rivals at the upstream level, the downstream level, or both. This may give them an incentive to use their contracts to soften competition or to compete more aggressively, depending on the circumstances.

Incentives to use vertical contracts to soften competition typically exist alongside the contractual efficiency motivations (i) through (v) discussed in the preceding section. For this reason, the competitive analysis of the effects of vertical restraints requires a case-by-case analysis that takes into account both contractual efficiency effects and competition softening or strengthening effects. The net effects of vertical restraints are complex and highly sensitive to a range of factors, including the following:

(i) *The relevant contractual benchmark.* Firms in a vertical relationship choose a contract that either specifies a simple linear tariff or vertical restraints that condition monetary transfers on the quantities or retail prices chosen by the downstream firm. Suppose the current contract C involves vertical restraints. The competitive effect of the vertical restraints embodied in C must be measured against a counterfactual that would arise if the vertical restraints were prohibited. Suppose that if the vertical restraints were prohibited, firms would choose contract C' instead of C . In general, the new contract C' will involve a different conditioning of monetary transfers between the firms on a different set of factors. To evaluate the effects of the vertical restraints in C , one has to *predict* the contract C' that arises when the restraints are prohibited, predict the outcome that occurs under the new contract C' , and compare that outcome with the outcome that arises under the original contract C .

For example, suppose the vertical restraint under consideration is an all-units discount, which offers the buyer a discount on all units purchased if its purchases exceed a minimum quantity threshold. In evaluating the effects of an all-units discount, it matters whether prohibiting the all-units discount would lead to a linear tariff, which could create double marginalization, an alternative nonlinear tariff (e.g., a two-part

tariff), which might have different incentive properties, or an alternative contract with different vertical restraints (e.g., RPM or some other vertical restraint).

A common theme in the literature on vertical restraints is that it is often true that more than one vertical restraint can be used to accomplish the same objective, perhaps with different transaction costs. When this is true, it is obviously important in evaluating the effects of the restraint to take into account the alternatives that may be available to the firm. More generally, it is important to understand the motivation for the vertical restraint in the first place, as that can help determine how the vertical contract is likely to change when one or more vertical restraints are prohibited.

(ii) *Upstream and downstream market structure and competitiveness.* The effects of vertical restraints depend on the nature of competition in the upstream and downstream markets. However, unlike the case of horizontal mergers and restraints, market power is a poor indicator of the likelihood that a vertical restraint could harm competition. The reason is that both the benefits and harms from vertical restraints can increase with greater market power. For example, greater market power in the upstream market may increase the benefit from using vertical restraints to eliminate double marginalization, and the increase in this benefit due to greater market power may exceed the increase in potential harm from the restraints associated with greater market power.

Antitrust Guidelines frequently use measures of market power as proxies for the likelihood that mergers or specific unilateral conduct may harm competition. For example, the Horizontal Merger Guidelines in most countries specify safe harbors based on concentration indices, and in some cases they specify a rebuttable presumption of harm when concentration exceeds certain thresholds. This is not possible for vertical restraints for the reasons just given. Indeed, the recently issued Vertical Merger Guidelines in the U.S. do not specify safe harbors based on concentration for this reason.⁹

⁹ U.S. DEPT OF JUSTICE & FED. TRADE COMM'N, VERTICAL MERGER GUIDELINES 3–4 (2020),

(iii) *Transaction costs and the degree of nature of contractual incompleteness.* The effect of specific vertical restraints generally depends on the cost of specifying different terms in a contract. For example, if downstream firms make important non-price decisions that affect the demand for U1's product but are too costly to specify in a contract, then vertical restraints may be used to encourage downstream firms to choose or get closer to the non-price decision that a fully integrated firm would choose. On the other hand, if it is possible to contract over non-price decisions directly at relatively low cost, then the motivation for vertical restraints is likely to be something else.

(iv) *Bargaining, commitments, and the timing of decisions.* The predictions of vertical contracting models are sensitive to whether upstream firms can commit to non-discriminatory terms and refuse to engage in bilateral negotiations, or whether they negotiate (or renegotiate) terms on a bilateral basis. Bilateral negotiations generally create contracting externalities that alter the implications of different vertical restraints, depending on the circumstances.

In recent vertical merger investigations, plaintiffs have used a bargaining framework that assumes that supply contracts and downstream prices are determined simultaneously.¹⁰ However, in most markets with vertical contracting, downstream firms can adjust downstream prices in response to changes in wholesale prices, and bargaining parties are likely to take this into account when bargaining. The difference between sequential and simultaneous determination of wholesale and retail prices might seem like a detail, but economic analysis shows that the distinction is important.

(v) *Information structure.* The literature on vertical contracting shows that the

https://www.ftc.gov/system/files/documents/reports/us-department-justice-federal-trade-commission-vertical-merger-guidelines/vertical_merger_guidelines_6-30-20.pdf [hereinafter VERTICAL MERGER GUIDELINES].

¹⁰ This was the assumption in the bargaining framework used by the United States Department of Justice in the AT&T-Time Warner merger case. See *United States v. AT&T, Inc.*, 916 F.3d 1029, 1035–36 (D.C. Cir. 2019).

information structure—in particular the presence or absence of private information, uncertainty, and risk; the observability of rival's contracts; and the verifiability of independent decisions (and thus the degree of contractual incompleteness)—can be important factors for determining the effects of vertical restraints. For example, when a downstream firm has private information about its cost or demand, it is generally not optimal for the firms to agree to set the marginal price equal to marginal cost even in the case of bilateral monopoly, and the result is a degree of double marginalization. Thus, there can be double marginalization even when nonlinear contracts are feasible. As another example, when downstream competitors cannot observe their rival's supply terms, their behavior depends on beliefs about those terms, and different beliefs lead to different outcomes. And when information is not sufficient to verify actions that are important determinates of value, vertical restraints may be an alternative way induce firms to make joint profit maximizing decisions.

II. MULTI-SIDED PLATFORMS

A. Platforms Involve Additional Externalities

The digital age has increased the role of multi-sided platforms in the economy. The classic, pre-digital age example of a multi-sided platform is a newspaper company that sells newspapers to the public and advertising to companies or consumers attempting to advertise and sell products or convey information for some other reason to the public. In the digital economy, search engines, social media, and online retailers also sell products or services to consumers and advertising to companies or consumers trying to sell products to others.

The main difference between multi-sided platforms and other markets for the purpose of analyzing vertical restraints is that multi-sided platforms involve additional externalities that must be accounted for in the analysis. In the newspaper example, which harkens back to the pre-digital age, the demand for advertising depends on readership,

as greater readership means more consumers are likely to see ads published in the newspaper. Thus, a consumer's decision to subscribe to a newspaper creates a positive spillover—an externality—on advertisers. Similarly, newspaper advertising may affect the demand for subscriptions (an externality) either positively or negatively, as some consumers benefit from the ads while others prefer to obtain news without the ads. The newspaper example also involves network externalities, as the more consumers that subscribe to a newspaper, the more valuable the newspaper becomes as an advertising outlet, the more ads the newspaper is likely to sell, and the more valuable the newspaper becomes to consumers who purchase subscriptions in part to benefit from the ads.

B. Techniques for the Antitrust Analysis of Vertical Restraints Involving Platforms

Differ Little Techniques for Analyzing Non-Platform Markets

Although an economic literature has developed that focuses on economic aspects of multi-sided platforms,¹¹ it is important to understand that the *economic concepts* involved in the analysis of vertical restraints involving multi-sided platforms are little different than they are in the analysis of environments that do not involve multi-sided platforms.

Consider the analogy between the potentially exclusionary effects of the anti-steering restraints employed by American Express (“Amex”), a multi-sided platform, and exclusive dealing by a company that sells a single product in a vertical chain. Amex has two types of customers: (i) merchants, who pay Amex for the right to transact with customers using the American Express Card; and (ii) consumers, who purchase American Express Cards and associated services from Amex to allow them to use the

¹¹ For a sampling of this literature, see, for example, Jean-Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets* 1 J. EUR. ECON. ASS'N 990 (2003); Jean-Charles Rochet & Jean Tirole, *Two-Sided Markets: A Progress Report*, 37 RAND J. ECON. 645 (2006); E. Glen Weyl, *A Price Theory of Multi-Sided Platforms*, 100 AM. ECON. REV. 1642 (2010).

American Express Card to make purchases from merchants under contract with Amex. Thus, Amex is a multi-sided platform that provides services to merchants and consumers, and the benefits to these groups from Amex's services are obviously interrelated—there are both cross-platform and network externalities.

Amex's anti-steering provisions constrained retailers' ability to charge consumers different prices for purchases made using the American Express Card than they charge for purchases using a different credit card. A potentially pro-competitive motivation for this restriction is the promotion of services Amex offered consumers that helped them identify stores they might find attractive, thereby encouraging consumers to visit stores that accept the American Express Card. The argument is that if retailers could turn around and sell the product to customers attracted by Amex's services using a different credit card that offered a higher profit margin, Amex's incentives to offer these services would diminish, and consumers could be worse off as a result.

Without getting into the merits of this argument,¹² observe that it is conceptually little different than an argument that a manufacturer's incentives to make investments that attract consumers to a store are greater when it uses exclusive dealing to contractually restrain retailers from selling competing products that would benefit from the manufacturer's investments. The anti-steering restrictions imposed by Amex are best thought of as a weak form of exclusive dealing that constrains but does not prohibit retailers from selling rival products or services, thereby making it more profitable for Amex to invest. The antitrust issue is whether the potential benefits of such investments outweigh potential harms from exclusionary or competition softening effects of the restraint. The fact that Amex is a multi-sided platform (selling to both merchants and consumers) likely affects the quantitative analysis of the incentives for and the net effects

¹² The competitive effect of Amex's anti-steering provisions was the primary issue before the U.S. Supreme Court in *Ohio v. American Express Co.*, 138 S. Ct. 2274 (2018). In a 5-4 decision, the majority held that Amex's anti-steering provisions did not unreasonably restrain trade.

of the restraint, and it obviously should be accounted for in the analysis, but the conceptual point is the same in both cases—the vertical restraint may correct the externality that allows competitors to benefit or “free ride” on the platform’s or the manufacturer’s investment.

The point here is not that the economic literature on multi-sided platforms is not relevant or has not contributed to our understanding of economic issues related to platforms, but only that the determination whether a particular vertical restraint in a particular circumstance is procompetitive or anticompetitive uses the same general tools regardless of whether one or more parties to the vertical contract runs a multi-sided platform.

III. TAXONOMY OF ECONOMIC EFFECTS OF VERTICAL RESTRAINTS

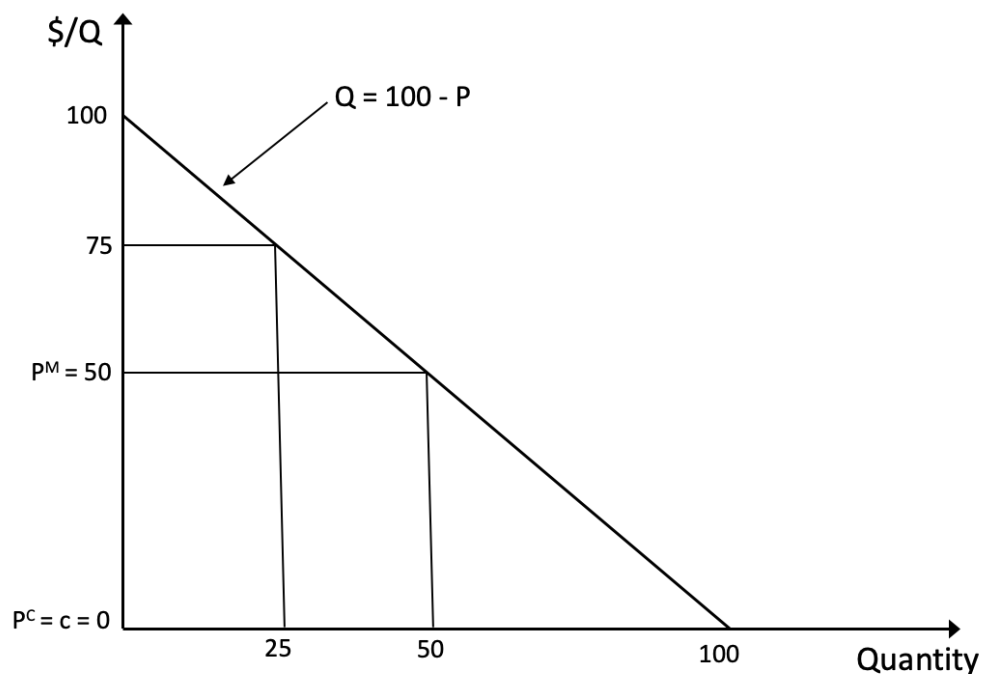
In this section I provide additional detail on the effects of vertical restraints based on the economic literature, organizing the discussion around the following vertical structures: (A) bilateral monopoly; (B) upstream monopoly and downstream competition; (C) downstream monopoly and upstream oligopoly, and (D) competition at both levels. Although most real-world situations fall under (D), the abstractions present in (A) through (C) correspond to insights developed in the literature and are useful for identifying and describing factors that are relevant for the analysis of vertical restraints in the general case (D).

To help understand the economics issues, I use a simplified example throughout this section. Assume that one or more upstream firms produce a product that is resold by one or more downstream firms.¹³ In the simplest case with homogenous products, the demand for the downstream product is $Q = 100 - P$, where Q is quantity and P is the downstream price, as illustrated in Figure 3. I introduce product differentiation that

¹³ The analysis in this section holds if the downstream firm uses other inputs in fixed proportions with the upstream firm’s product.

generates the same demand for each product when firms charge the same downstream prices below as needed. The wholesale price (not shown) is denoted w , and if the firms use fixed transfer payments, the transfer (not shown) is denoted F . The upstream firm produces at constant marginal cost c , and downstream firms incur no costs to bring the product to market other than what they pay upstream firms for the product.¹⁴ For simplicity, I also assume that upstream marginal cost is zero in numerical examples that follow, but I sometimes refer to their marginal cost as c to emphasize the role of upstream margins in determining the effects of vertical restraints. The dotted lines representing marginal revenue are explained below.

Figure 3: Illustrative Example with Linear Demand and Constant Marginal Cost



Much of the literature compares the effects of vertical restraints to two reference points: the price that would prevail if the upstream and downstream markets were perfectly competitive, and the price that would prevail if the markets were monopolized

¹⁴ This assumption is innocuous when downstream firms produce at constant marginal cost.

by an integrated firm. The perfectly competitive price is $P^C = c$ in general and $P^C = c = 0$ in all numerical examples in this section. The fully integrated monopoly price is $P^M = (100 + c)/2$ in general and $P^M = 50$ in the numerical examples. I follow the literature and refer to outcomes that yield the monopoly price as the “fully integrated” or “vertically integrated” outcome. Although the fully integrated outcome is a common reference point, it is important to keep in mind that vertical restraints do not always achieve that outcome, and when this is true, this outcome is less relevant as a reference point.

A. Successive Monopoly

1. Double Marginalization – The Basic Vertical Pricing Externality

As a starting point, it is useful to examine contracting between a single upstream and single downstream firm—successive monopoly. In terms of the bubble diagram in Figure 2, think of the contracts and decisions involving U2 and D2 as fixed, and focus on contracting between U1 and D1 when the residual demand for U1’s product is $Q = 100 - P$ as in Figure 3.

The most widely discussed inefficiency in vertical contracts that do not include vertical restraints is *double marginalization*, referred to as “the basic vertical externality” in Tirole’s authoritative textbook on Industrial Organization.¹⁵ Under successive monopoly (although all that is required is market power at both levels of the industry), this externality arises when the wholesale price exceeds marginal cost, $w > c$. In this case, when the downstream firm raises its price and causes a reduction in the quantity sold, it

¹⁵ See JEAN TIROLE, *THE THEORY OF INDUSTRIAL ORGANIZATION* 174 (1988). The first formal analysis of double marginalization comes from Joseph J. Spengler, *Vertical Integration and Antitrust Policy*, 58 J. POL. ECON. 347 (1950). Augustin Cournot discovered a close cousin of double marginalization in his analysis of the “Cournot complements problem,” which involves two independent producers of perfectly complementary products selling to common buyers that use the complements to form a system. See A.A. Cournot, *Researches into the Mathematical Principles of the Theory of Wealth* (Macmillan 1897) (1838). It can be shown that the double marginalization problem is mathematically identical to a “Stackelberg” (sequential) version of the Cournot complements problem. See O’Brien, *supra* note 1, at 48, 49.

causes a reduction in upstream profit of $w - c$ for each unit of sale that is lost. Because the downstream firm does not take into account this externality in choosing the downstream profit-maximizing price, it sets the downstream price higher than it would if it were vertically integrated and could acquire the input internally at cost.

In the linear demand example in Figure 3, it can be shown that the profit-maximizing wholesale price is \$50, and the profit-maximizing retail price given a wholesale price of \$50 is \$75. Thus, compared to the fully integrated outcome with a retail price \$50 that can be achieved through certain vertical restraints (as discussed further below), double marginalization raises the retail price from \$50 to \$75, harming consumers and reducing total welfare. Turning this around, under successive monopoly, vertical restraints that achieve the fully integrated outcome reduce price from \$75 to \$50, benefiting consumers and increasing total welfare.

Bundling interpretation. The externality interpretation of double marginalization is helpful for pointing out how to eliminate the problem. Specifically, the externality disappears when $w = c$, in which case the upstream firm's profit from the marginal unit is zero and the downstream firm's pricing decision no longer affects upstream profit.

However, another interpretation of double marginalization that is rarely discussed in the literature is extremely useful for understanding both the nature of the distortion and how to eliminate it in more general settings, e.g., when firms sell multiple products. Economic analysis shows that *linear pricing*, which most scholars understand as the root cause of double marginalization, is a consequence of constraints on the upstream seller's ability to bundle the units of the product. Because double marginalization is a consequence of linear pricing, it follows that double marginalization is also a consequence of constraints on the ability to bundle.¹⁶ More generally, economic analysis

¹⁶ The association between nonlinear pricing and bundling units of products is in the economic folklore and is discussed to some degree in the literature. See, e.g., Wilson, *supra* note 8, at 88–89. O'Brien & Shaffer discuss the connection between double marginalization and the inability to bundle in more general settings,

shows that constraints on the upstream firm's ability to bundle any *substitute* objects that it sells, whether the objects are units of the same product (each unit is identical), units of different substitute products, or both, generates double marginalization. The recognition that double marginalization is a consequence of the inability to bundle *substitutes* has two important implications. First, double marginalization is a more widespread problem in vertical contracting than is generally recognized, as it involves not only the absence of bundling the units of specific products, but also the absence of bundling across products. Second, constraints on the ability to bundle substitute products prevents contracting firms from solving double marginalization through bundling. The second observation has obvious implications for policy toward tying and bundling, as discussed further below.

The notion that it is helpful or even relevant to view departures from linear tariffs as arising from constraints on bundling might seem inapposite to many readers—what does linear and nonlinear pricing have to do with bundling? Suppose the upstream seller charges \$10 per unit for a product and the downstream firm purchases two units of the product. This tariff does not bundle the units of the product. The reason is that the sum of the prices paid to purchase two units in separate transactions, \$20, is the same as total price paid to purchase the “bundle” of two units in a single transaction. On the other hand, suppose the upstream seller charges a two-part tariff with a fixed fee of \$15 and a wholesale price of \$5. (These numbers are purely illustrative.) This tariff bundles the two units because the sum of the prices paid when two single units are purchased in separate transactions is \$40 $[= 2 \times (15 + 5)]$, and this exceeds the total price paid for a bundle of two units purchased in a single transaction, \$25 $[= 15 + (2 \times 5)]$. Thus, we see that a single-product two-part tariff (one form of nonlinear pricing) bundles the units of the product.

More generally, non-requirements tying, full-line forcing, aggregate rebates, and

as well as the implications of this relationship for policy toward tying and bundling *supra* note 8.

other bundled discounts involve bundling the units of different products in addition to bundling the units of each product. As noted above, in the single product setting, one can show that double marginalization arises from the inability to bundle units of the product. Similarly, in the multiproduct setting involving substitute products (potentially imperfect substitutes), one can show that an analogous distortion—a generalization of double marginalization to the multi-product setting—arises from the inability to bundle across products.¹⁷

Contractual solutions to the double marginalization problem—single product case. The elimination of double marginalization (“EDM”) through vertical restraints occurs through the same mechanism as EDM effects from vertical mergers: lowering the effective wholesale price (or the “shadow” wholesale price, as discussed below) to upstream marginal cost, e.g., by setting $w = c$. The vertical restraints used to accomplish this depend on whether the vertical contract involves single or multiple products.

Consider first the single product case. In environments with complete information and no uncertainty or risk, it is well-known that several different nonlinear tariffs can eliminate double marginalization, including two-part tariffs, all-units discounts, declining block tariffs (of which two-part tariffs are a special case), and quantity forcing (e.g., take-or-pay contracts, which are really a special case of an all-units discount). In addition, fixed-price or maximum RPM can also eliminate double marginalization. All of these contracts work by setting the *effective* wholesale price, what economists sometimes call the “shadow” price, equal to marginal cost.

A two-part tariff, which involves a linear wholesale price and fixed fee, works by explicitly setting $w = c$ in the contract so that the downstream firm has the same marginal cost as a vertically integrated firm that can purchase the input at cost. Under this contract, the downstream firm chooses the retail price that maximizes the fully integrated profit,

¹⁷ See O'Brien & Shaffer, *supra* note 8, at 3.

$P^M = 50$, and the fixed fee divides these profits between the upstream and downstream firms. A tariff with a declining block structure, e.g., a price of \$50 for the first 25 units and a price of zero for each unit beyond 25, can also work. This tariff induces the downstream firm to sell 50 units (and price at \$50) because (i) the cost to the downstream firm of each unit beyond 25 is the same as the marginal cost of an integrated firm, so the downstream firm has the same incentive at the margin as an integrated firm, and (ii) the amount paid to the upstream firm, 1250 [= 50 x 25] is less than the downstream firm's gross profit of 2500 [= 50 x 50].¹⁸

An alternative nonlinear tariff that achieves the fully integrated outcome is an all-units discount tariff that charges the downstream firm a high per-unit price on all units if total purchases are less than some quantity threshold and a lower per unit price on all units if total purchases exceed the threshold.¹⁹ For example, suppose the wholesale price is \$100 when total purchases are less than 50 units and \$49 if total purchases equal or exceed 50 units. This tariff induces the downstream firm to purchase 50 units, the joint profit-maximizing quantity. The reason is that if the downstream firm purchases any positive amount less than 50 units, its profits will be zero or negative (because the downstream price is less than the downstream firm's unit cost of \$100 for all positive quantities less than 50). On the other hand, if the downstream firm purchases and resells 50 units, the resulting downstream price of \$50 exceeds the wholesale price of \$49, and the downstream firm makes a positive profit of \$50 [= (50-49) x 50]. The downstream firm has no incentive to sell more than 50 units, because selling an additional unit would lower

¹⁸ The best the downstream firm can do with a price greater than \$50 is a price of \$75, which yields a profit of \$625 [= (75-50) x 25]. The declining block tariff in text assumes a particular split of the profit. In general, the tariff could also include a fixed fee and a different profit split.

¹⁹ See Sreya Kolay, Greg Shaffer & Janusz A. Ordover, *All-Units Discounts in Retail Contracts*, 13 J. ECON. & MGMT STRATEGY 429 (2004); Daniel P. O'Brien, *All-Units Discounts and Double Moral Hazard* 170 J. ECON. THEORY 1 (2017).

the price to \$49 and wipe out the downstream profits.²⁰

As noted earlier, all vertical restraints that involve eliminating double marginalization do so by setting the effective wholesale price equal to upstream marginal cost. But in the all-units discount just presented, the actual wholesale price paid by the downstream firm is \$49, which is far greater than upstream marginal cost of \$0. Indeed, \$49 is almost as high as the wholesale price of \$50 associated with double marginalization. It might be tempting to argue that there is little welfare benefit from the all-units discount because the wholesale price charged in the all-units discount is nearly as high as it is under double marginalization. However, this argument is incorrect.

The reason the argument is wrong is that the relevant price for evaluating the outcome is what economists call the “shadow price” paid by the downstream firm, and this price *does* equal (and is not less than or greater than) upstream marginal cost in any all-units discount that achieves the fully integrated outcome. The shadow price, a term that is likely unfamiliar to antitrust practitioners, is the effective price to the downstream firm of the last unit purchased given both the wholesale price it pays *and the constraints embodied in the tariff*. The simplest way to think about the shadow price in the context of an all-units discount is that it is the wholesale price that would induce the downstream firm to purchase the quantity it chooses if there were no constraining quantity threshold. Because the chosen quantity in this example is the quantity that a fully integrated monopolist would choose, the shadow price must equal upstream marginal cost, as that is the wholesale price that induces the downstream firm to behave the same way as a vertically integrated firm. That is, at the quantity chosen under an optimal all-units discount, the shadow price, *is* equal to the upstream firm’s marginal cost.²¹ No inference

²⁰ In more formal economic language, the downstream firm’s marginal revenue is less than its marginal cost of \$49 for all quantities of 50 or greater.

²¹ Formally, the downstream firm’s profit maximization problem under an effective all-units discount tariff (one that induces the downstream firm to reach the quantity threshold) is

about the efficiency of the optimal all-units discount tariff is possible based on the nominal wholesale price, which serves only to transfer surplus. In particular, it would be wrong to conclude from the nominal wholesale price of \$49 in this example that there is little benefit from the use of all-units discounts to eliminate double marginalization.

Quantity forcing (or a take-or-pay provision) works the same way as an all-units discount—indeed, these contracts are a special case of an all-units discount with effectively an infinite price for positive quantities less than the quantity threshold.

RPM can eliminate double marginalization by fixing the price rather than quantity at the joint profit maximizing level, which has the same effect. All of these strategies that eliminate double marginalization amount to effectively creating a shadow price for the upstream firm's product that induces the downstream firm to choose the fully integrated quantity or price.

The discussion thus far has assumed that there is no asymmetric information and no uncertainty or risk. The addition of these factors complicates the analysis in ways that are beyond the scope of this chapter. However, a point worth emphasizing is that the equivalence of two-part tariffs, all-units discounts, quantity forcing, and RPM for the case

$$\max_q (P(Q) - w)Q \text{ s.t. } Q \geq \bar{Q}$$

where $P(Q)$ is inverse demand, \bar{Q} is the quantity above which the all-units discount applies, and w is the wholesale price paid if the purchases reach the quantity threshold \bar{Q} . The Lagrangian is

$$L = (P(Q) - w)Q + \lambda(Q - \bar{Q})$$

where $\lambda \geq 0$ is the Lagrangian multiplier. The first order condition, assuming that the constraint binds and the quantity sold is positive, is

$$P'(\bar{Q})\bar{Q} + P(\bar{Q}) - (w - \lambda) = 0.$$

The “shadow price” paid by the downstream firm for the input is the effective marginal cost that makes it optimal to choose the quantity \bar{Q} , which is $w - \lambda$. If the upstream firm chooses \bar{Q} to be the fully integrated quantity, this condition is satisfied when $w - \lambda = c$, i.e., when the shadow price paid for the input is upstream marginal cost. The shadow price facing the downstream firm is less than the observed wholesale price by an amount $\lambda = w - c$. Note that regardless of the value of the nominal wholesale price, if \bar{Q} is the fully integrated quantity, the shadow price equals upstream marginal cost. The level of the nominal wholesale price serves to divide surplus. See O'Brien, *supra* note 19.

of bilateral contracts under complete information generally does not hold when information is incomplete. To illustrate, suppose demand is uncertain, the upstream firm is risk neutral, but the downstream firm is risk averse. In this case, a nonlinear tariff is not sufficient to achieve the fully integrated outcome. The reason is that optimal risk sharing requires transferring risk to the upstream firm, which requires eliminating the downstream firm's margin so that it does not bear risk due to demand fluctuations, but it is not possible to eliminate the downstream margin with a nonlinear contract. However, if the fully integrated downstream price does not vary with demand, a maximum RPM contract that eliminates the downstream margin and compensates the downstream firm with a negative fixed fee can achieve the integrated outcome, eliminating double marginalization and optimally sharing risk. If the fully integrated downstream price does vary with demand, RPM combined with a nonlinear tariff is generally more efficient than a nonlinear tariff alone.²²

Contractual solutions to double marginalization – multiproduct case. If the upstream and downstream firms contract over multiple products that are substitutes for each other, the equivalence results for the restraints discussed in the single product case no longer hold. The reason has to do with the relationship between double marginalization and bundling, as discussed earlier.

When a multiproduct upstream firm distributes two imperfect substitute products through a downstream retailer, product specific two-part tariffs are insufficient to achieve the fully integrated outcome.²³ The intuition for the case of two products, A and B, is as

²² For an analysis of vertical restraints in environments with risk and uncertainty, see Patrick Rey & Jean Tirole, *The Logic of Vertical Restraints*, 76 AM. ECON. REV. 921 (1986).

²³ This result is due to Greg Shaffer, *Capturing Strategic Rent: Full-line Forcing, Brand Discounts, Aggregate Rebates, and Maximum Resale Price Maintenance*, 39 J. INDUS. ECON. 557 (1991); see also Thibaud Vergé, *Multi-product Monopolist and Full-line Forcing: The Efficiency Argument Revisited*, 12 ECON. BULL. 1 (2001); Daniel P. O'Brien & Greg Shaffer, *Bargaining, Bundling, and Clout: the Portfolio Effects of Horizontal Mergers*, 36 RAND J. ECON. 573 (2005); O'Brien & Shaffer, *supra* note 8.

follows. Product specific two-part tariffs allow the upstream firm to extract the downstream firm's *incremental* profit from selling each of products A and B. If the upstream firm tried to extract more, the downstream firm would drop one or both products. However, because products A and B are substitutes, the sum of the downstream firm's incremental profits from selling A and B is less than the total profit from the sales. This means that product-specific two-part tariffs are insufficient to extract the fully integrated profit. The optimal product-specific two-part tariff generally involves wholesale prices above marginal cost.²⁴ Intuitively, a small increase in the wholesale price of product A (starting at marginal cost) has a small effect on joint profits (since a price equal to marginal cost maximizes joint profits), but it strictly increases the downstream firm's incremental profit from selling B. The same is true for a small increase in the wholesale price of product B. Since the upstream firm captures the incremental profits with fixed fees, it increases its profits by raising wholesale prices, creating a double marginalization distortion. This is the multiproduct variant of the double marginalization distortion discussed earlier.

A generalization of the single-product linear demand example to the case of two products helps illustrate the effects of single-product and multi-product double marginalization. Suppose there are two products, 1 and 2, with the following product-specific demands:²⁵

$$\begin{aligned}Q_1 &= 100 - P_1 + s \times (P_2 - P_1), \\Q_2 &= 100 - P_2 + s \times (P_1 - P_2),\end{aligned}$$

where the subscripts indicate products 1 and 2 and s is a substitution parameter between 0 and infinity that reflects the degree of substitution between products 1 and 2. If $s = 0$, then the demand for each product depends only on its own price, i.e., the products are

²⁴ See Shaffer, *supra* note 23.

²⁵ This demand system is due to RICHARD LEVITAN & MARTIN SHUBIK, MARKET STRUCTURE AND BEHAVIOR (1980).

independent in demand. If $s > 0$, products 1 and 2 are imperfect substitutes—an increase in the price of either product raises the demand for the other but does not divert all customers to the other product. As s becomes larger, the products become closer and closer substitutes.²⁶ In any symmetric outcome where the products have the same equilibrium price, the demand for each product has the same form as the demand function introduced at the beginning of this section, i.e., the demand for product 1 is $Q_1 = 100 - P_1$, the demand for product 2 is $Q_2 = 100 - P_2$, and the reference points for perfect competition and monopoly have the same prices as in the single product case. Thus, the size of the distortion associated with a particular retail price in a symmetric outcome in this multiproduct setting is comparable to the size of the distortion in the single product setting (e.g., a price of \$75 causes the same percentage welfare reduction relative to the fully integrated price of \$50 in both settings.)

Using the methods in Shaffer,²⁷ it is possible to find the equilibrium retail prices when the upstream firm uses product-specific two-part tariffs. Figure 4 plots the equilibrium wholesale and retail prices against the diversion ratio between products 1 and 2.²⁸ Note first that the wholesale price is \$0 and retail price is \$50 when the diversion ratio is zero, which is the case where products 1 and 2 are independent in demand. This shows that product-specific two-part tariffs—bundling the units of each product but not bundling different products—fully eliminates the double marginalization distortion when the products are independent in demand. This is as expected because the case of two independent demands is the same as having two independent bilateral monopolies, each selling their own product, and two-part tariffs are sufficient to achieve the fully

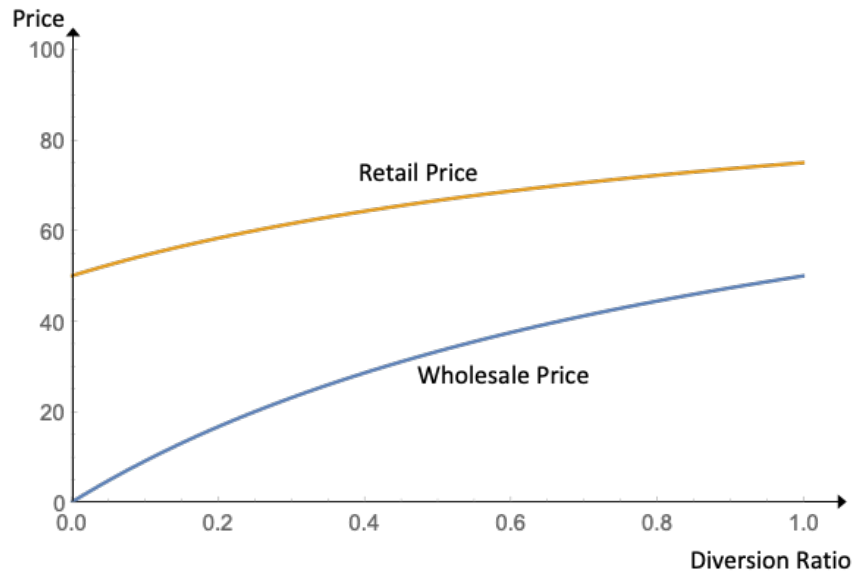
²⁶ To see why, observe the reduction in the quantity of product 1 from an increase ΔP_1 is $(1+s)\Delta P_1$. In the limit as s goes to infinity, the reduction becomes infinite, as in the case of perfect competition between perfect substitutes.

²⁷ See Shaffer, *supra* note 23.

²⁸ The diversion ratio in this example is $Diversion\ Ratio = s/(1 + s)$.

integrated outcome in the single product setting in this case.

**Figure 4: Double Marginalization Distortion from the Inability to Bundle
Across Products In the Multi-Product Setting**



The more interesting cases occur when diversion ratios are positive. As the diversion ratio approaches 1, where products 1 and 2 become perfect substitutes, the wholesale price rises toward \$50 and the retail price rises toward \$75. This is the same double marginalization outcome that occurs with linear pricing in the single product case, except that it now occurs with both products. The important point is that *double marginalization occurs even though the contract involves two-part tariffs*. The size of the double marginalization problem depends on the diversion ratio. When the diversion ratio is small, so that the products are not very close substitutes, product-specific two-part tariffs eliminate most of the double marginalization, and the inability to bundle across products leads to a relatively small additional distortion due to double marginalization. On the other hand, as the products become very close substitutes and the diversion ratio approaches 1 (which is equivalent to perfect substitutes in this example), the double marginalization problem due to the inability to bundle across products is as bad as it is under linear pricing in the single product case!

The reason for this result is that *the key economic factor behind double marginalization is the inability to bundle*, as explained earlier.²⁹ In the single product case, double marginalization is a consequence of the seller's inability to bundle the units of the product, as through nonlinear pricing. In the multi-product case, double marginalization is a consequence of the seller's inability to bundle the units of each product with each other and with the units of other substitute products. It follows that, contrary to conventional wisdom, nonlinear tariffs are insufficient to solve the double marginalization problem in the multiproduct setting when the products are substitutes. Any solution involving vertical restraints that condition the tariff only on quantities requires some form of tying or bundling both the units of specific products (as with nonlinear pricing) *and* the units of different products.

It should be noted that the requirement that products are substitutes for the inability to bundle to generate double marginalization does not require that the products are substitutes in final demand. Products that are independent or even somewhat complementary in final demand can be substitutes in the derived demand facing the upstream supplier. For example, scarce shelf space at the retail level can make two products that are independent in final demand substitutes in demand from the upstream firm's perspective because retailers may substitute between the products in deciding which products to stock.

Shaffer has shown that several vertical restraints can achieve the fully integrated outcome in the multiproduct setting involving substitute products, including full line forcing, aggregate rebates, and maximum RPM.³⁰ These are equivalent vertical restraints when information is complete. Empirical literature provides support for the prediction that bundling substitute products provides EDM benefits.³¹

²⁹ O'Brien & Shaffer, *supra* note 8.

³⁰ Shaffer, *supra* note 23, at 558.

³¹ Cf. Justin Ho, Katherine Ho & Julie Holland Mortimer, *Analyzing the Welfare Impacts of Full-Line Forcing*

The finding that the inability to bundle causes double marginalization has important implications for antitrust policy toward bundled discounts. In *LePages*,³² the antitrust issue was whether bundled discounts employed by the defendant excluded competitors and harmed competition. Because the inability to bundle substitute products causes double marginalization, a complete analysis of the antitrust question in that case requires balancing benefits from the elimination of double marginalization with any harm due to exclusion. The court in *LePages* did not explicitly consider pro-competitive benefits from the elimination of double marginalization, nor, to my knowledge, has this benefit been considered in other cases involve bundled discounts or tying.

2. Downstream Non-Contractible Investment

Imagine now that in addition to choosing the downstream price, the downstream firm's stage-two decisions include one or more non-price decisions, such as the amount of advertising or customer service effort, both of which can enhance the demand for the product. Suppose that it is not possible to specify these decisions in a contract. If the upstream firm earns a positive margin, these actions have spillover effects on the upstream firm that the downstream firm will ignore in choosing its own profit-maximizing level of these non-price efforts. Generally, if the upstream margin is positive, the downstream margin will be less than the margin of a fully integrated firm, and the downstream firm will invest less than an integrated firm would invest at any given downstream price.

A contractual solution that eliminates double marginalization by setting the wholesale price equal to upstream marginal cost can also correct the distortion of non-price effort. However, the problem is more complex than the case where the downstream firm's only stage two decision is price.

Contracts, 60 J. INDUS. ECON. 468, 480 (2012).

³² *LePage's, Inc. v. 3M*, 324 F.3d 141 (3d Cir. 2003).

In the single product case, a two-part tariff that sets the wholesale price equal to marginal cost still works to achieve the fully integrated outcome. The downstream firm will then have the same incentives as a fully integrated firm and will choose the joint profit-maximizing (fully integrated) levels of price and the non-price actions. Variants of all-units discounts can also work provided the wholesale price charged when the downstream firm fails to purchase the threshold volume is high enough to discourage it from cutting back on investment and raising price. RPM combined with a linear tariff does not work because the wholesale price required to induce the fully integrated downstream investment is marginal cost, but that price that fails to capture any surplus for the upstream firm.

In the multiproduct setting where the products are substitutes, a two-part tariff is not sufficient for the same reason it is not sufficient when the only downstream decisions are prices. However, RPM can be combined with either a two-part tariff or an all-units discount to induce the downstream firm to set the fully integrated price and choose the fully integrated investment levels.

3. Double Moral Hazard

Double moral hazard arises when both the upstream and downstream firms make independent non-contractible decisions that affect the outcome. For example, both the upstream and downstream firms may make investment decisions after the contract is signed that affect the demand for the product. Or the downstream firm may make only a price decision and the upstream firm may make a non-contractible quality decision. Both cases technically involve double moral hazard.

When double moral hazard is present, a dilemma exists that can make it impossible to achieve the fully integrated outcome when contracts are incomplete, i.e., when the downstream price and upstream and downstream investment decisions cannot be specified in the contract. As we've seen, the wholesale price that induces the

downstream firm to choose the joint profit maximizing price and quantity under successive monopoly is the upstream firm's marginal cost. However, a wholesale price equal to marginal cost provides the upstream firm with no incentive at the margin to invest. Raising the wholesale price encourages greater upstream investment, but at the same time it creates double marginalization. Due to this conflict—between encouraging additional upstream investment and mitigating double marginalization—it is often not possible to align both upstream and downstream incentives in a way that induces the fully integrated outcome in the presence of double moral hazard.³³

Two papers in the literature address the incentives for and the effects of vertical restraints in the presence of double moral hazard. One paper examines the effects of resale price maintenance when the upstream and downstream firms both make non-contractible demand-enhancing investments and the downstream firm also chooses the final price.³⁴ This model features three vertical externalities, one relating to price and two relating to the firms' non-price decisions. RPM (sometimes maximum and sometimes minimum) typically mitigates the problem somewhat, but it does not induce the fully integrated outcome. The reason is that even with RPM, the manufacturer has only a two-dimensional incentive device (the wholesale price and retail price) to control three target variables (upstream investment, downstream investment, and the retail price).

The author does not examine the welfare effects of RPM in the model, but it seems clear that welfare effects would be ambiguous for the usual reasons in models that involve non-price decisions. However, it is clear that the use of RPM will often enhance

³³ The double moral hazard problem is a special case of a more general problem known as "moral hazard in teams," which arises when two or more individuals (or firms) exert post-contractual effort that affect the overall gains from trade (the value of the "team"). See Bengt Holmstrom, *Moral Hazard in Teams*, 13 BELL J. ECON. 324 (1982). Holmstrom showed that any contract with a "balanced budget" (meaning that the upstream firm receives only the tariff it charges the downstream firm) fails to induce efficient levels of investment. *Id.* at 327.

³⁴ See Richard E. Romano, *Double Moral Hazard and Resale Price Maintenance*, 25 RAND J. ECON. 455 (1994).

welfare. For example, in the special case where the downstream firm's only decision is price, a maximum RPM contract that eliminates the retail margin can eliminate double marginalization and induce the fully integrated level of upstream investment, because the upstream firm then collects the integrated profit and faces the same investment incentives as an integrated firm. This will often enhance welfare, as discussed further below.

Another paper examines the role of all-units discounts to address the double moral hazard problem.³⁵ The analysis shows that all-units discounts are generally more efficient contracts than two-part tariffs and do as well or better than more complex continuous tariffs (e.g, declining block tariffs with two or more blocks) in environments with double moral hazard. The basic logic is that, unlike two-part tariffs, an all-units discount can eliminate double marginalization with a nominal wholesale price above marginal cost that encourages upstream investment. This is not possible with a two-part tariff because the wholesale price that eliminates double marginalization ($w = c$) eliminates the upstream margin, discouraging upstream investment. In general, all-units discounts are more efficient than two-part tariffs, and in environments with uncertain demand, they are more efficient than incremental units discounts such as declining block tariffs.

4. Bargaining

In the 1980s, economists began studying the implications of bargaining over the terms of vertical contracts. Bargaining can alter the analysis of vertical restraints substantially in environments with downstream competition (as explained below), but it does not alter the qualitative conclusions in this section about the role of vertical restraints in successive monopoly. For example, suppose the upstream and downstream firms negotiate a linear tariff through symmetric Nash bargaining (discussed in more detail

³⁵ See O'Brien, *supra* note 19.

below) and that the only post-contractual downstream decision is the downstream price. If firms' disagreement profits are zero (meaning they receive zero profits if they fail to agree) and they have no outside options, it can be shown that the Nash bargaining solution in the numerical example in this section yields a wholesale price of \$25 and a retail price of \$62.50.³⁶ Thus, downstream bargaining power lowers the wholesale price relative to the \$50 wholesale price that arises when the upstream firm makes take-it or leave-it ("TIOLI") offers and thereby reduces the degree of double marginalization, but some double marginalization remains, as the equilibrium retail price (\$62.50) still exceeds the fully integrated price (\$50). Vertical restraints that achieve the fully integrated outcome under TIOLI offers still do so, and they still lower the downstream price.

Similarly, in the multiproduct setting, bargaining does not alter the results that linear tariffs create double marginalization and that product-specific two-part tariffs are insufficient to achieve the fully integrated outcome because they fail to eliminate fully the double marginalization that arises from the inability to bundle.³⁷

5. Welfare Effects

In the symmetric case considered in this section, the welfare effects of vertical restraints are straightforward when the downstream retail price is the only stage two decision. Vertical restraints that achieve the fully integrated outcome lower the retail price and increase welfare relative to situations with double marginalization in both single product and multiproduct settings.

When non-price decisions are in the mix, the welfare effects of vertical restraints that increase joint profits are theoretically ambiguous. The reason is that the joint profit-

³⁶ See Daniel P. O'Brien, *The Uniform Settlements Policy in International Telecommunications: A Noncooperative Bargaining Model of Intermediate Product 3rd Degree Price Discrimination* (1989) (Ph.D. dissertation, Northwestern University) (on file with author) [hereinafter O'Brien Dissertation].

³⁷ Bilateral bargaining over product-specific two-part tariffs yields the same distortion as the TIOLI offer case considered in Shaffer, *supra* note 23. See O'Brien & Shaffer, *supra* note 23.

maximizing choice of the non-price attribute may be higher or lower than the socially optimal choice, depending on the nature of demand curvature. However, under some standard assumptions commonly used in applications, vertical restraints typically increase welfare.

Specifically, suppose that marginal cost is constant and the final demand for the product exhibits constant curvature, a special case of which is linear demand.³⁸ Suppose further that changes in upstream or downstream investment shift or rotate demand without altering its curvature. Under these assumptions, vertical restraints increase consumer and total welfare relative to the case with no vertical restraints.

This result is explained in steps as follows. Start from the double marginalization outcome that arises in the absence of vertical restraints. Allow the negotiating firms to introduce a fixed fee that divides profits. Note that the introduction of a fixed fee does not change consumer surplus or total welfare. Now suppose the firms re-optimize by choosing a new contract with vertical restraints that achieves the fully integrated price and investment levels. Under constant curvature demand and constant marginal cost, consumer surplus and profits vary in a constant proportion to each other as the seller optimally adjusts price in response to changes in non-price attributes that shift or rotate demand (e.g., demand-enhancing retail services).³⁹ This means that any change in price and the investment that increases joint profits also increases consumer surplus. Because any vertical restraints agreed to by the upstream and downstream firms must increase joint profits (otherwise they would not make the change), the vertical restraint also

³⁸ Constant curvature means that as price changes, the curvature of demand, as measured by $-Q''/Q'$, does not change. Other commonly used demand curves with constant curvature include constant elasticity and semi-log demand. See Jeremy I. Bulow & Paul Pfleiderer, *A Note on the Effect of Cost Changes on Prices*, 91 J. POL. ECON. 182, 183–85 (1983).

³⁹ See Daniel P. O'Brien & Doug Smith, *Privacy in Online Markets: A Welfare Analysis of Demand Rotations* 4 (FTC Bureau of Econ. Working Paper No. 323, 2014), <https://www.ftc.gov/system/files/documents/reports/privacy-online-markets-welfare-analysis-demand-rotations/wp323.pdf>.

increases consumer surplus. It follows that under constant marginal cost and constant curvature demand, vertical restraints increase consumer surplus, profits, and total welfare.

In an amicus brief filed in the *Leegin* case, the authors argued that it is possible that the use of vertical restraints to promote downstream investment would lead to suboptimal investment levels.⁴⁰ As a theoretical matter, vertical restraints can lead to over- or under-investment in services relative to the socially optimal levels. However, the preceding analysis shows that in the bilateral setting, vertical restraints raise both consumer and total welfare under the simplest textbook assumptions—linear demand and constant marginal cost. Departures from this prediction require sufficiently large departures from the constant curvature assumption in a specific direction. In any case, the argument that vertical restraints can theoretically distort investment upward or downward, depending on demand curvature, is not an argument against the Supreme Court’s decision in *Leegin* to adopt a rule-of-reason standard for the antitrust treatment of RPM.

In the same Amicus, the authors argue that “[t]o the extent that the economic literature provides support for resale price maintenance as welfare-enhancing, the support is limited to cases of manufacturer-induced RPM, not retailer-induced RPM Retailer-induced RPM should give rise to a rebuttable *per se* approach.”⁴¹ Yet, both the upstream and downstream firms share the same interest in vertical restraints that induce the fully integrated outcome because they can divide the maximized joint profits with a fixed transfer payment. Economic theory does not support a rebuttable *per se* approach for vertical restraints just because one or more retailers benefit from their use.

⁴⁰ See Brief for William S. Comanor & Frederic M. Scherer as Amici Curiae Supporting Neither Party at 5–7, *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007) (No. 06-480), 2007 WL 173679.

⁴¹ *Id.* at 2.

B. Downstream Competition

I now turn to situations where U1 contracts with multiple downstream firms who may compete with one another. In terms of the bubble diagram in Figure 2, think of the contacts and decisions involving U2's products as fixed.

It is important to recognize that conditional on U1's contract with D2, the issues discussed in the preceding section on contracting between successive monopolists remain relevant in the contracts between U1 and D1, and vice versa. That is, contract efficiency considerations remain important. However, the additional externalities associated with downstream competition raise additional considerations that affect the analysis. Important considerations include the presence of service externalities across retailers, whether contracting is bilateral or multilateral, and the observability of contracts.

1. No Non-Contractible Investments; No Bilateral Contracting

To fix ideas, suppose that upstream firm U1 sells through N downstream firms that are Cournot competitors in the downstream market. (Under Cournot competition, each firm chooses its own quantity to maximize profits taking as given its competitors' quantities.) Absent vertical restraints, double marginalization remains an issue. If U1 offers TIOLI linear tariffs in the illustrative example in Figure 3, it can be shown that it will charge a wholesale price of \$50 irrespective of the number downstream firms. The retail price depends on the intensity of downstream competition, as shown in Table 1. If there is only 1 downstream firm, the outcome involves successive monopoly and a downstream price of \$75. Greater downstream competition ($N > 0$) lowers the retail price, but in this example the wholesale price remains at \$50. As the market becomes more and more competitive, double marginalization gradually disappears. The remaining distortion relative to the perfectly competitive outcome arises from "single marginalization" due to U1's market power in the upstream market.

**Table 1: Take-it or Leave Linear Tariffs
Downstream Cournot Competition**

Number of Downstream Cournot Players	Wholesale Price that Induces the Fully Integrated Outcome	Equilibrium Wholesale Price	Equilibrium Retail Price	% Welfare Gain from Vertical Restrains that Achieve the Integrated Outcome
1	0.00	50	75.00	71%
2	25.00	50	66.67	35%
3	33.33	50	62.50	23%
4	37.50	50	60.00	17%
5	40.00	50	58.33	14%
10	45.00	50	54.55	7%
25	48.00	50	51.92	3%
100	49.50	50	50.50	1%

Vertical restraints in this case, as in the bilateral monopoly case, seek to eliminate double marginalization and lower the retail price to the fully integrated level. One approach that works is a set of two-part tariffs that induce downstream competitors to choose the fully integrated monopoly price of \$50 as the outcome of downstream competition. The wholesale price that does this depends on the number of downstream competitors. This wholesale price is zero when there is one downstream firm and rises from \$0 to \$50 as the number of downstream firms grows toward infinity, which generates the perfectly competitive outcome in the downstream market.

Observe that the greater the degree of market power in the downstream market as reflected by a smaller number of competitors, the greater the welfare benefit from vertical restraints that achieve the fully integrated outcome. This is the first of several examples throughout this section that show why market power screens are less useful in the analysis of vertical restraints and mergers than they are in the analysis of horizontal mergers. Generally, market power at one or both levels is necessary but not sufficient for

harm to arise from vertical restraints or mergers.

A similar situation occurs when the upstream firm offers TIOLI linear tariffs to downstream differentiated Bertrand competitors. (Under Bertrand competition, each firm chooses its own price to maximize profits taking as given their rivals' prices.) For simplicity, suppose there are two Bertrand competitors with the linear differentiated demands introduced earlier. Recall that the products are independent in demand when $s = 0$, and they become closer substitutes as s increases. To aid intuition, it is convenient to measure the degree of substitution and thus the intensity of downstream competition by the diversion ratio between the competitors rather than the substitution parameter. The diversion ratio in this example is $Diversion\ Ratio = s/(1 - s)$.

Table 2 shows how the outcome under TIOLI linear tariffs compares with the fully integrated outcome for different values of the diversion ratio. As in the case of downstream Cournot competition, the equilibrium wholesale price exceeds the price that induces the fully integrated outcome except in the extreme case where downstream firms are perfectly competitive, which occurs when the diversion ratio approaches 1. Thus, vertical restraints that achieve the fully integrated outcome reduce price and increase welfare relative to the case of no vertical restraints, and this effect is larger the greater the degree of downstream market power as reflected by a smaller diversion ratio.

**Table 2: Take-it or Leave Linear Tariffs
Downstream Bertrand Competition**

Diversion Ratio	Wholesale Price that Induces the Fully Integrated Outcome	Equilibrium Wholesale Price	Equilibrium Retail Price	% Welfare Gain from Vertical Restrains that Achieve the Integrated Outcome
0.00	0.00	50.00	75.00	71%
0.10	5.00	50.00	73.68	64%
0.20	10.00	50.00	72.22	57%
0.30	15.00	50.00	70.59	49%
0.40	20.00	50.00	68.75	42%
0.50	25.00	50.00	66.67	35%
0.60	30.00	50.00	64.29	28%
0.70	35.00	50.00	61.54	21%
0.80	40.00	50.00	58.33	14%
0.90	45.00	50.00	54.55	7%
1.00	50.00	50.00	50.00	0%

Table 2 provides useful insight into one of the policy debates in the commentary and discussion surrounding the 2020 Vertical Merger Guidelines issued in the summer of 2020 in the U.S.⁴² The issue is the merger specificity of cost savings from eliminating the wholesale margin when nonlinear tariffs are employed prior to a vertical merger. An argument often made is that nonlinear tariffs between the merging firms prior to the merger eliminate EDM benefits. Although it is true that nonlinear pricing can eliminate double marginalization (at least in the single product case), observe that the wholesale prices that induce the fully integrated outcome in Table 2 exceed marginal cost in every case except downstream monopoly. This means that if the upstream firm can make TIOLI nonlinear contract offers prior to the merger, a vertical merger still creates cost savings from eliminating the upstream margin, which lowers the downstream firm's marginal cost and retail price. As long as the wholesale price exceeds marginal cost, this benefit,

⁴² See VERTICAL MERGER GUIDELINES, *supra* note 9, at 12.

which is similar to the benefit from EDM, exists.⁴³

A point that is often missed in vertical merger discussions is that if the upstream firm sells through TIOLI nonlinear contracts prior to merging with a differentiated downstream Bertrand competitor, such a merger would not achieve the integrated outcome and would be unprofitable absent some efficiency benefit. The reason is that by vertically merging, the upstream firm loses the ability to use the wholesale price with the integrating downstream firm to soften competition. If there are two downstream firms, for example, it generally takes two incentive devices (here two wholesale prices) to induce downstream firms to charge the fully integrated downstream prices.⁴⁴ However a merger between U1 and D1 takes one of the incentive devices off the table because the integrated firm cannot credibly pretend to pay itself a wholesale price above marginal cost. This prevents the use of nonlinear tariffs to achieve the fully integrated outcome. The full effects of the merger in this case are found by weighing the benefit to the integrating firm from eliminating the upstream margin against any increase in the wholesale prices charged to unintegrated downstream firms.

In contrast to the Bertrand case, in the Cournot case illustrated in Table 1, a vertical merger does induce the fully integrated outcome, just like a TIOLI nonlinear tariff. The reason is that under the assumption of constant marginal cost and no product differentiation, the merged firm can achieve the fully integrated outcome with only a single downstream seller.⁴⁵

⁴³ This benefit technically is not EDM, although it is sometimes referred to that way. When the upstream firm uses nonlinear tariffs in this case, the positive upstream margin is not due to double marginalization caused by the absence of bundling, but instead exists to soften downstream competition and thereby achieve the fully integrated outcome.

⁴⁴ This logic traces to G. Frank Mathewson & Ralph Winter, *An Economic Theory of Vertical Restraints*, 15 RAND J. ECON. 27 (1984).

⁴⁵ An integrated firm could achieve the fully integrated outcome by charging a retail price of \$50 and charging unintegrated downstream firms a wholesale price of \$50 (or more generally \$50 minus downstream production marginal cost) to capture the fully integrated profit.

2. Downstream Non-Contractible Investments, No Bilateral Contracting

Several papers have examined the effects of nonlinear pricing, RPM, and ET when competing downstream firms make both price and non-contractible non-price decisions that affect final demand. Telser's seminal paper focused on the situation where downstream firms compete on price and by offering a non-price service at no explicit charge that increases the value of the product to consumers.⁴⁶ He showed that if consumers can obtain the service from one retailer but then purchase the product at a lower price from another retailer who does not provide the service ("free riding"), the incentive for retailers to provide the service is reduced and may disappear entirely. He then showed how RPM and ET can overcome this problem to ensure that valuable pre-sale services are provided in the market.

Mathewson and Winter developed a formal model that encompasses the externalities present in Telser's model.⁴⁷ They examine in detail how a manufacturer that can credibly commit to tariffs that are observable to all downstream firms and are not bilaterally renegotiated can achieve the vertically integrated outcome with various combinations of two-part tariffs, RPM, and ET.

Mathewson and Winter derive strong results for the case where each downstream firm's strategic decisions include price and a non-price decision (e.g., advertising) that affects demand. In one case they consider, each downstream firm's advertising decision affects only its own demand. In another case, advertising by one downstream firm causes "spillovers" that benefit other downstream firms. The latter case involves a degree of free riding that formalizes the type of free-riding introduced by Telser. For these cases, Mathewson and Winter derive the following results:

⁴⁶ Lester G. Telser, *Why Should Manufacturers Want Fair Trade?*, 3 J.L. & ECON. 86, 89–96 (1960).

⁴⁷ See Mathewson & Winter, *supra* note 44, at 27–28.

- When there are no advertising spillovers, nonlinear tariffs alone are insufficient to achieve the fully integrated outcome. Closed territory distribution (a strong form of ET) combined two-part tariffs, and minimum RPM with two-part tariffs are sufficient to achieve the fully integrated outcome.
- When there are advertising spillovers, closed territory distribution combined with two-part tariffs is no longer sufficient to achieve the fully integrated outcome. Minimum RPM combined with two-part tariffs is sufficient.

The welfare implications of Telser's and Mathewson and Winter's results are ambiguous in theory. However, as in the successive monopoly case discussed earlier, if demand has constant curvature, marginal cost is constant, and downstream firms are symmetric, vertical restraints increase welfare.

It is important to emphasize that the absence of bilateral contracting is critical for these results. Both the Telser and Mathewson and Winter models assume, consistent with virtually all of the literature on vertical restraints prior to 1990, that the upstream firm can credibly commit to contract offers that it will not renegotiate bilaterally and that downstream firms can observe (or learn or infer) the terms of their rivals' contracts. The alternative assumption that contracts are determined bilaterally (and may potentially be secret) can lead to quite different conclusions, as discussed in the next section. This is another in a long list of reasons why policy toward vertical restraints is difficult—theoretical predictions are sensitive to key assumptions. Moreover, there is a paucity of empirical literature that provides a basis for choosing between different modelling assumptions that can be important for the predictions.

3. Bilateral Contracting Externalities

In many vertical chains, firms bilaterally negotiate their contracts. This section shows that bilateral negotiations have important implications for the effects of both vertical restraints and mergers. There are three main cases to consider: (a) bargaining

over linear tariffs; (b) bargaining over observable nonlinear tariffs; and (c) bargaining over unobservable nonlinear tariffs.

a. Bargaining Over Linear Tariffs

In successive monopoly (examined earlier), downstream bargaining power leads to lower wholesale prices and less double marginalization than when the upstream firm offers linear tariffs on a TIOLI. However, because downstream bargaining power does not eliminate double marginalization altogether, vertical restraints that achieve the fully integrated outcome eliminate a degree of double marginalization and reduce wholesale and retail prices.

The presence of downstream competitors adds another factor—bilateral contracting externalities that arise because the wholesale price in the contract between the upstream firm and each downstream firm affects the outcome of downstream competition and therefore affects the profits of other downstream firms. As we'll see, whether the vertical restraints raise or lower prices and welfare can depend on the pre-merger market structure, the nature of downstream competition, and the details of the bargaining process and vertical contracts.

The most common way to model bilateral bargaining in settings with multiple downstream firms is with the simultaneous Nash bargaining solution, which has come to be known as “Nash-in-Nash bargaining.”⁴⁸ In this approach, each downstream firm

⁴⁸ The simultaneous Nash bargaining solution has recently been used in several vertical merger investigations, most recently the AT&T-Time Warner merger that was tried in federal district court. O'Brien developed this solution to study the effects of prohibiting price discrimination in intermediate good markets where input prices are negotiated. See O'Brien Dissertation, *supra* note 36; and Daniel P. O'Brien, *The Welfare Effects of Third-Degree Price Discrimination in Intermediate Good Markets: The Case of Bargaining*, 45 RAND J. ECON. 92 (2014). Horn and Wolinsky independently developed and applied this solution to mergers, Henrick Horn & Asher Wolinsky, *Bilateral Monopolies and Incentives for Merger*, 19 RAND J. ECON. 408 (1988), and Davidson independently developed it and applied this solution to labor market negotiations, Carl Davidson, *Multiunit Bargaining in Oligopolistic Industries*, 6 J. LAB. ECON. 397 (1988). Davidson (1988) and O'Brien (1989, 2014) provide non-cooperative foundations for this solution concept based on extensions of the alternating offer bargaining model of Ariel Rubinstein, *Perfect Equilibrium in a*

negotiates a linear wholesale price with the upstream firm through Nash bargaining taking the other wholesale prices as given.⁴⁹ The outcome of Nash bargaining over linear tariffs generally depends on four factors: (i) the size of the incremental loss that each bargaining party can impose on the other from delaying or refusing agreement, which depends on the profits from agreement and disagreement (the latter is referred to as the “disagreement profit”); (ii) the curvature of the negotiating firms’ profits in price, which affects firms’ relative costs of making small price concessions during bargaining; (iii) the availability of outside options, which may differ from disagreement profits; and (iv) in the case of asymmetric Nash bargaining, the firms “bargaining weights,” which reflect their intrinsic bargaining power.⁵⁰ All four factors are important. In addition, the predictions from simultaneous Nash bargaining over linear tariffs generally depend on

Bargaining Model, 50 *ECONOMETRICA* 97 (1982). None of these authors use the term “Nash-in-Nash,” which seems to have developed in the folklore. Several researchers have used variants of the simultaneous Nash bargaining solution to study oligopoly environments with bargaining between upstream and downstream firms. See, e.g., Michaela Draganska, Daniel Klapper & Sofia B. Villas-Boas, *A Larger Slice or a Larger Pie? An Empirical Investigation of Bargaining Power in the Distribution Channel*, 1 *MKTG. SCI.* 29 57 (2010); Gregory S. Crawford & Ali Yurukoglu, *The Welfare Effects of Bundling in Multichannel Television Markets*, 102 *AM. ECON. REV.* 643 (2012); Matthew Grennan, *Price Discrimination and Bargaining: Empirical Evidence from Medical Devices*, 103 *AM. ECON. REV.* 145 (2013); Gautam Gowrisankaran, Aviv Nevo & Robert Town, *Mergers when Prices Are Negotiated: Evidence from the Hospital Industry*, 105 *AM. ECON. REV.* 172 (2015); Gregory S. Crawford et al., *The Welfare Effects of Vertical Integration in Multichannel Television Markets*, 86 *ECONOMETRICA* 891 (2018); Kate Ho & Robin S. Lee, *Equilibrium Provider Networks: Bargaining and Exclusion in Health Care Markets*, 109 *AM. ECON. REV.* 473 (2019).

⁴⁹ It should be noted that the simultaneous Nash bargaining solution (or “Nash-in-Nash” solution) frequently is not the only solution to alternating offer bargaining games in environments with multiple downstream firms. For example, in the case of a single upstream firm and two downstream firms negotiating a linear price, there can be asymmetric equilibria in which the upstream firm and one of the downstream firms recognize (and act on this recognition) that they will bargain to reach agreement *first*, and that the upstream firm and the other downstream firm will bargain to reach agreement *second*. In this equilibrium, only the 2nd agreement is a Nash bargaining solution that takes the other agreement as given. The wholesale price in the first agreement solves a Nash bargaining solution that looks ahead and accounts for how the wholesale price in the second agreement will adjust in response to the price chosen in the first agreement. This was also recognized by Horn and Wolinsky, *supra* note 48.

⁵⁰ For a discussion of these factors in Nash bargaining, see Ken Binmore, Ariel Rubinstein & Asher Wolinsky, *The Nash Bargaining Solution in Economic Modelling*, 17 *RAND J. ECON.* 176 (1986). For a discussion of how all four factors are relevant in input price negotiations, see O'Brien (2014), *supra* note 48.

the nature of downstream competition, the downstream market structure, and the timing of pricing decisions. I present three examples illustrating these points.

Downstream Cournot Competition. Suppose first that the downstream market consists of N Cournot competitors (the case where $N = 1$ is the successive monopoly case considered above). Assume that each downstream firm's disagreement profit is zero, and the upstream firm's disagreement profit in its negotiations with one downstream firm is the profit it earns from its contract with other firms when they operate in a Cournot equilibrium conditional on the disagreeing downstream firm producing zero.⁵¹ Finally, assume that firms have no outside options and equal bargaining weights, which means that the solution in each bilateral bargaining situation is the symmetric Nash bargaining solution.

In the linear example we have been using, it can be shown that the wholesale price that solves the simultaneous Nash bargaining solution is $w = \$25$ *irrespective of the number of downstream firms*.⁵² This result has strong implications for the effects of vertical restraints that achieve the fully integrated outcome.

Table 3 shows how the wholesale price that induces the fully integrated outcome and the equilibrium wholesale and retail prices under simultaneous Nash bargaining vary with the number of downstream firms.

⁵¹ As Horn and Wolinsky, *supra* note 48, pointed out, there are other reasonable assumptions about the quantities of firm 1's competitors when firm 1 is in a state of disagreement, and the equilibrium solution can depend on these assumptions.

⁵² See O'Brien Dissertation, *supra* note 36. The prediction that price does not change at all with the number of downstream firms is an artifact of linearity, but a general result is that the wholesale price remains below the level that induces the fully integrated retail price regardless of the number of downstream Cournot competitors. See O'Brien Dissertation, *supra* note 36; O'Brien (2014), *supra* note 48.

Table 3: Simultaneous Nash Bargaining Over Linear Wholesale Prices: Downstream Cournot Competition

Number of Downstream Cournot Players	Wholesale Price that Induces the Fully Integrated Outcome	Wholesale Price Under Simultaneous Nash Bargaining	Retail Price Under Simultaneous Nash Bargaining	% Welfare Gain from Vertical Restraints that Achieve the Integrated Outcome
1	0.00	25	62.50	23%
2	25.00	25	50.00	0%
3	33.33	25	43.75	-7%
4	37.50	25	40.00	-11%
5	40.00	25	37.50	-13%
10	45.00	25	31.82	-17%
25	48.00	25	27.88	-19%
100	49.50	25	25.74	-20%

Observe that the wholesale price that induces the fully integrated outcome is less than the wholesale price that emerges from bargaining when there are two or fewer downstream firms, but it is greater than the negotiated price when there are three or more downstream firms. This means that the downstream price under simultaneous Nash bargaining is lower than the fully integrated downstream price if there are three or more firms. It follows that vertical restraints that induce the fully integrated outcome raise price when there are three or more downstream firms.

The main factor driving this result is that the negotiated wholesale price remains below the level required to achieve the fully integrated outcome even as the number of downstream firms grows. Many find this result counterintuitive—why doesn't the upstream firm gain bargaining strength as the downstream market becomes more competitive? The reason is that in bilateral bargaining, each firm's bargaining power derives in large part from the size of the loss it can impose on the firm it is bargaining with by delaying or refusing agreement. As the downstream market becomes more competitive, the upstream firms' profit from an incremental agreement falls, reducing the loss each downstream firm can impose on the upstream firm by delaying or refusing

agreement. But at the same time, each downstream firm's profit falls, reducing the loss that the upstream firm can impose on each downstream firm by delaying or refusing agreement. As the number of downstream firms grows—which in the Cournot model means the downstream market becomes more competitive—the relative losses the bargainers can impose on each other by delaying or refusing agreement both fall such that the wholesale price that “balances” these losses according to Nash bargaining remains below the level that achieves the fully integrated outcome. It follows that vertical restraints or integration that achieve the fully integrated outcome raise the downstream price when the downstream market is sufficiently competitive.

A vertical merger between U1 and one of the downstream firms restores the fully integrated outcome in this model because downstream firms are homogenous and there are constant returns to scale. The vertically integrated firm can achieve the fully integrated outcome by credibly negotiating a wholesale price high enough and set a retail price low enough to prevent unintegrated downstream rivals from capturing profits. Thus, a vertical merger in this model is equivalent to vertical restraints that achieve the fully integrated outcome, and both raise price in this model as long as there are three or more downstream firms.

An obvious caveat is that this example assumes that that downstream firms do not make non-contractible investments. If downstream non-contractible investments are important, vertical restraints that achieve the fully integrated outcome could involve lower wholesale prices that raise the downstream firm's margin and induce greater downstream investment, which would likely increase welfare. A second obvious caveat is that the example assumes that the upstream firm faces no competition. Suppose, alternatively, that downstream firms have the option during bargaining to leave the bargaining table and agree to purchase the input a price of \$24 from another supplier, a price well above upstream marginal cost, but slightly below the price they negotiate when

there is no outside option. In this case, the outside option principle⁵³ implies that unintegrated downstream firms pay \$24 prior to the adoption of vertical restraints or vertically merging. Unless either strategy somehow relaxes the binding outside option constraint, neither strategy could increase the wholesale price to unintegrated downstream firms. In this case, vertical restraints or merger would likely be procompetitive by eliminating double marginalization between the merging firms.

Downstream Bertrand Competition. Next, suppose that downstream firms are differentiated Bertrand competitors. For simplicity, I discuss the case with two downstream firms.

Table 4 shows how the wholesale price that induces the fully integrated outcome and the equilibrium wholesale and retail prices under simultaneous Nash bargaining vary with the diversion ratio in the absence of vertical restraints.

Table 4: Simultaneous Nash Bargaining Over Linear Wholesale Prices: Downstream Differentiated Bertrand Competition

Diversion Ratio	Wholesale Price that Induces the Fully Integrated Outcome	Wholesale Price under Simultaneous Nash Bargaining	Retail Price under Simultaneous Nash Bargaining	% Welfare Gain from Vertical Restraints that Achieve the Integrated Outcome
0.00	0.00	25.00	62.50	23%
0.10	5.00	24.93	60.49	18%
0.20	10.00	24.70	58.16	13%
0.30	15.00	24.25	55.44	8%
0.40	20.00	23.54	52.21	3%
0.50	25.00	22.47	48.31	-2%
0.60	30.00	20.94	43.53	-7%
0.70	35.00	18.74	37.49	-13%
0.80	40.00	15.46	29.55	-18%
0.90	45.00	10.17	18.33	-22%
1.00	50.00	0.00	0.00	-25%

⁵³ Cf. Avner Shaked & John Sutton, *Involuntary Unemployment as a Perfect Equilibrium in a Bargaining Model*, 52 *ECONOMETRICA* 1351, 1362–63 (1984).

The same general forces are at work in the Bertrand case as in the Cournot case: (i) downstream bargaining power lowers the wholesale price, although it does not eliminate double marginalization except when the diversion ratio is one, and (ii) greater downstream competition (as measured by a higher diversion ratios in the Bertrand case) lowers the losses that both bargaining parties can inflict on each other by delaying or refusing agreement, with the result that the negotiated wholesale price is generally below the \$50 level that arises under TIOLI offers. As in the Cournot case, when the downstream market is sufficiently competitive, the negotiated wholesale price is lower than the price that induces the fully integrated outcome. It follows that if the downstream market is sufficiently competitive, vertical restraints that achieve the fully integrated outcome raise the downstream price.

Of course, the same caveats apply as in the Cournot case: the analysis abstracts from non-contractible downstream investment and upstream competitive alternatives.

The timing of wholesale and retail pricing. In the bargaining models just discussed, the wholesale price is determined prior to the retail price, and the negotiating firms anticipate the effect of adjustments to the wholesale price during bargaining on the retail price. This timing is consistent with virtually all of the literature on vertical control from Spengler's seminal paper through the first application of bargaining models to vertical contracting.⁵⁴ For reasons that are not entirely clear, however, much of the recent literature and many policy applications of simultaneous Nash bargaining between upstream and downstream firms assumes that retail prices are set simultaneously with wholesale prices.⁵⁵ This means that when considering whether to adjust the wholesale

⁵⁴ The models of O'Brien, Horn and Wolinsky, and Davidson, *supra* note 48, all assume that wholesale prices are determined before retail prices and that the bargaining parties rationally look ahead to the impact of changes in wholesale prices on retail prices, as in virtually all models of vertical contracting since Spengler's seminal paper.

⁵⁵ A possible reason some of the literature has gone this direction is that the assumption simplifies both the theoretical and empirical analysis and sometimes yields simple formulas for equilibrium prices. See, e.g.,

price in negotiations, the bargaining firms assume that any adjustment would not affect the retail price. This was the assumption, for example, in the bargaining analysis presented by the Plaintiff's expert in the AT&T-Time Warner merger trial, the first vertical merger tried in federal court in decades, and in several other recent applications.⁵⁶

In bargaining models where the wholesale and retail prices are determined simultaneously, the effect of a vertical merger comes entirely through its impact on the upstream firm's disagreement profit, which is the amount it earns during a bargaining impasse (or "blackout"). The model ignores the traditional source of input foreclosure—raising the wholesale price to unintegrated downstream firms (raising rivals' costs) for the purpose of shifting business to the integrated firm's downstream division—making it impossible to isolate the effect of bargaining on predictions relative to traditional foreclosure models with TIOLI contracting. And in most contracting environments, downstream firms can adjust retail prices in response to changes in their wholesale prices, and it is hard to see why negotiating parties would fail to anticipate such adjustments during negotiations.

The assumption that wholesale and retail prices are determined simultaneously rather than sequentially is not innocuous. For example, in the illustrative linear example used in this section (with symmetric, Levitan-Shubik demand and constant marginal cost), it can be shown that a vertical merger always reduces price.⁵⁷ As Table 4 indicates, this is not the case when the wholesale and retail prices are determined sequentially, as in the standard vertical contracting model.

In my discussion of linear price bargaining in this section, I focused on models

William P. Rogerson, *Modelling and Predicting the Competitive Effects of Vertical Mergers: The Bargaining Leverage Over Rivals Effect*, 53 CAN. J. ECON 407 (2020).

⁵⁶ *Id.* at 427–28.

⁵⁷ This is true when the upstream firm's profit during a bargaining impasse with one downstream firm is the profit it earns from the other downstream firm when that firm charges its anticipated equilibrium price, as assumed in most of the literature.

where wholesale and retail prices are determined sequentially for three reasons. First, this assumption is a more accurate reflection of reality in most markets. Simplicity does not seem to be an especially good basis for an incorrect assumption that matters. Second, it avoids the illogical (and therefore untenable) assumption that firms fully anticipate the retail price effect of the effective wholesale price increase that occurs during an impasse (which drives the effective retail price of the impasse product to infinity) but completely ignore the retail price effect of other changes in wholesale prices. Third, it permits isolating the effects of bargaining on vertical contracting relative to the TIOLI case, which advances our understanding of the role of bargaining in vertical contracting.

b. Bargaining Over Observable Nonlinear Tariffs

The preceding section discussed bargaining over linear wholesale prices. However, in many intermediate markets, firms negotiate nonlinear tariffs. This section explains the implications for vertical restraints of such negotiations when downstream firms can observe (or learn) their rivals' wholesale prices. For this discussion, I focus on the case of two downstream Bertrand competitors.

Recall that when U1 can offer TIOLI nonlinear tariffs to D1 and D2 and commit not to renegotiate them, it has an incentive to choose the wholesale price that induces the fully integrated downstream price as the outcome of downstream competition. The reason for this is that U1 can capture the maximized joint profits (the fully integrated joint profits) with a fixed transfer. However, when U1 and D1 negotiate nonlinear tariffs *bilaterally*, they have a bilateral incentive to choose a wholesale price that maximizes their *bilateral* profits and then divide these profits with a transfer payment. Because bilateral profits do not include the rival downstream firm's profits, an externality is present. To understand the externality, suppose the current wholesale price is w^I , the price that induces the fully integrated downstream price. In bilateral negotiations, U1 and D1 have an incentive to negotiate a lower wholesale price bilaterally because it causes D1 to lower

its retail price to attract customers from D2, increasing the *bilateral* profits of U1 and D1. Similarly, at the wholesale price w^I , U1 and D2 have an incentive to negotiate bilaterally a lower wholesale price to steal business from D1 and increase their bilateral profits. When these incentives are taken into account in simultaneous Nash bargaining, equilibrium wholesale prices end up below w^I , i.e., below the level that induces the fully integrated downstream price. This means that vertical restraints that achieve the fully integrated outcome raise the retail price.

Table 5 shows how the wholesale price that induces the fully integrated outcome and the negotiated wholesale and retail prices vary with the diversion ratio. In this case, the bilateral contracting externality leads to a wholesale price below the price that induces the fully integrated outcome for all values of the diversion ratio. Thus, the model predicts that vertical restraints that achieve the fully integrated outcome raise retail prices, with the same caveats in the previous bilateral contracting models (the model ignores downstream non-contractible investment and upstream competition).

**Table 5: Simultaneous Nash Bargaining Over Observable Nonlinear Tariffs:
Downstream Differentiated Bertrand Competition**

Diversion Ratio	Wholesale Price that Induces the Fully Integrated Outcome	Retail Price		% Welfare Gain from Vertical Restrains that Achieve the Integrated Outcome	% Welfare Gain from Nonlinear Tariffs Relative to Linear Tariffs
		Wholesale Price under Simultaneous Nash Bargaining Over Nonlinear Tariff	under Simultaneous Nash Bargaining Over Nonlinear Tariff		
0	0	0.00	50.00	0%	23%
0.1	5	0.25	47.50	-3%	22%
0.2	10	1.00	45.00	-6%	21%
0.3	15	2.25	42.50	-8%	18%
0.4	20	4.00	40.00	-11%	15%
0.5	25	6.25	37.50	-13%	12%
0.6	30	9.00	35.00	-15%	8%
0.7	35	12.25	32.50	-16%	4%
0.8	40	16.00	30.00	-18%	0%
0.9	45	20.25	27.50	-19%	-4%
1	50	25.00	25.00	-20%	-6%

However, the model also shows that relative to the case of simultaneous Nash bargaining with no vertical restraints, bargaining over a two-part tariff—a vertical restraint that can eliminate double marginalization—increases welfare for all cases except those in the bottom two rows in the table, which involve high diversion ratios and nearly perfect competition in the downstream market.

These findings illustrate the importance of specifying the appropriate counterfactual when evaluating the effects of vertical restraints. In this example, if firms employ vertical restraints that achieve the fully integrated outcome and the counterfactual is simultaneous Nash bargaining over two-part tariffs, then the restraints raise price (assuming the absence of downstream investment and upstream competition). On the other hand, if the restraint in question involves the use of a nonlinear tariff and the counterfactual involves a linear tariff, then the restraint lowers price in most of the cases considered here.

c. Bargaining Over Unobservable Nonlinear Tariffs

The last case I consider is when the upstream firm negotiates bilateral nonlinear tariffs that are not observed by the downstream firm's rivals. In this case, bilateral contracting externalities can be severe.⁵⁸ In particular, if downstream firms believe that their rivals' wholesale prices do not change in response to changes in their own wholesale prices ("passive beliefs"),⁵⁹ then bilateral contracting leads to wholesale prices equal to upstream marginal cost. In this case, the upstream monopolist is unable to soften competition at all using the wholesale price in the absence of vertical restraints. The outcome grows worse for all firms (their profits decline) the more intensely downstream firms compete. This is shown in Table 6 which displays the same information as Table 5 except with a negotiated wholesale price equal to marginal cost for all values of the diversion ratio.

Table 6 shows that in the case of secret contracts, where bilateral contracting externalities can be especially severe and welfare losses from sufficient vertical restraints can be large, the benefits from the use of nonlinear contracting to solve double marginalization increases welfare for all diversion ratios. Again, this illustrates the importance of evaluating the effects of vertical restraints against an appropriate counterfactual.

⁵⁸ See Oliver Hart & Jean Tirole, *Vertical Integration and Market Foreclosure* (Brookings Papers on Econ. Activity, 1990); Daniel P. O'Brien & Greg Shaffer, *Vertical Control with Bilateral Contracts*, 23 RAND J. ECON. 299 (1992); R. Preston McAfee & Marius Schwartz, *Opportunism in Multilateral Vertical Contracting: Nondiscrimination, Exclusivity, and Uniformity*, 84 AM. ECON. REV. 210 (1994); Patrick Rey & Thibaud Vergé, *Bilateral Control with Vertical Contracts*, 35 RAND J. ECON. 728 (2004); Patrick Rey & Jean Tirole, *A Primer on Foreclosure*, in 3 HANDBOOK OF INDUSTRIAL ORGANIZATION 2145–2220 (Mark Armstrong & Robert Porter eds., 2007).

⁵⁹ Although this assumption is made in much of the bilateral contracting literature and it is in the spirit of simultaneous Nash bargaining, the justification for this assumption is open to debate.

**Table 6: Simultaneous Nash Bargaining Over Unobservable Nonlinear Tariffs:
Downstream Differentiated Bertrand Competition
Passive Beliefs**

Diversion Ratio	Wholesale Price that Induces the Fully Integrated Outcome	Wholesale Price under Simultaneous Nash Bargaining Over Nonlinear Tariff	Retail Price under Simultaneous Nash Bargaining Over Nonlinear Tariff	% Welfare Gain from Vertical Restrains that Achieve the Integrated Outcome	% Welfare Gain from Nonlinear Tariffs Relative to Linear Tariffs
0	0	0.00	50.00	0%	23%
0.1	5	0.00	47.37	-3%	22%
0.2	10	0.00	44.44	-7%	21%
0.3	15	0.00	41.18	-10%	20%
0.4	20	0.00	37.50	-13%	18%
0.5	25	0.00	33.33	-16%	16%
0.6	30	0.00	28.57	-18%	13%
0.7	35	0.00	23.08	-21%	10%
0.8	40	0.00	16.67	-23%	7%
0.9	45	0.00	9.09	-24%	3%
1	50	0.00	0.00	-25%	0%

d. Bilateral Contracting with Downstream Non-Contractible Investment

The bilateral contracting models discussed above do not account for downstream non-contractible investment. One's instinct is that when downstream investment is important, vertical restraints that achieve the fully integrated outcome are likely to increase welfare. However, it is not obvious that vertical restraints can achieve the fully integrated outcome in a bilateral contracting environment. For example, in the secret nonlinear contracting environment, minimum RPM has no effect on the outcome unless the upstream firm can credibly commit to a price floor that it will enforce and not renegotiate bilaterally.⁶⁰

⁶⁰ See O'Brien & Shaffer, *supra* note 58, at 306. Similarly, exclusive territories are not sufficient to achieve the fully integrated outcome unless the upstream firm can credibly commit to enforce them. These issues are

But suppose the upstream firm can commit to and enforce an industry-wide price floor in an environment with non-contractible downstream investment and bilateral negotiations over the remaining contract terms. A recent paper examines this extension of the secret contracting model and finds that bilateral negotiation still leads to wholesale prices equal to upstream marginal cost even though the retail price is fixed. The reason is that bilateral externalities are still present due to retailers' non-price decisions, and they drive the wholesale price to marginal cost via that same mechanism as when the only downstream decision is price. When retailer's investments create positive spillovers for their rivals, the RPM contract that achieves the fully integrated outcome requires a wholesale price less than marginal cost to give retailers a large enough margin to internalize the spillovers. However, this is not possible under secret bilateral contracting because the equilibrium wholesale price equals marginal cost. In this case, RPM can reduce welfare by raising price without providing sufficient incentive for retailers to provide enough additional services to offset the price increase.⁶¹

4. Appropriate Vertical Restraints Policy in Environments with Bilateral Contracting

The circumstances in this section in which vertical restraints raise price have a common theme: in the absence of vertical restraints that involve more than nonlinear pricing, the upstream firm cannot commit to refrain from bilateral negotiations with downstream firms that create bilateral contracting externalities in which the upstream firm effectively "competes" against itself. That is, under bilateral contracting, the pair (U1,D1) effectively "competes" against the pair (U1,D2) through its choice of its

discussed further in Cindy R. Alexander & David Reiffen, *Vertical Contracts as Strategic Commitments: How Are They Enforced?*, 4 J. ECON. & MGMT. STRATEGY 623 (1995).

⁶¹ Tommy Staahl Gabrielsen & Bjørn Olav Johansen, *Resale Price Maintenance with Secret Contracts and Retail Service Externalities*, 9 AM. ECON. J. 63 (2017). In an extension of the Levitan-Shubik demand to allow for downstream investment with spillovers, they show that RPM reduces welfare when there are positive spillovers because it raises the retail price without inducing enough retail investment benefits to offset the harm from higher prices.

wholesale price w_1 , and the pair (U1,D2) effectively “competes” against the pair (U1,D1) through its choice of wholesale price w_2 .⁶²

An important question is whether antitrust policy should be concerned with this type of competition. One interpretation of vertical restraints that restore the fully-integrated outcome is that they allow the upstream firm to capture the value of its brand. Investment by U1 that gives it branded market power enhances interbrand competition between U1 and U2, while vertical restraints used by U1 to achieve the fully integrated outcome among U1, D1, and D2 allow U1 to capture the value of its brand, which it must do to be willing to invest in the brand in the first place.⁶³ On the other hand, if U1’s market power is due to barriers to entry unrelated to its own investment, one might argue that if bilateral contracting effectively “regulates” U1’s market power, then why not allow that benefit?

Appropriate antitrust policy toward vertical restraints in bilateral contracting settings is a big topic that raises questions at the intersection between antitrust and intellectual property policy. It is worth noting that to the extent that vertical restraints can be viewed as vertical integration through contract, the same questions could be raised about the appropriate treatment of vertical mergers in bilateral bargaining settings. The recently issued Vertical Merger Guidelines take a stand on this issue—vertical mergers that raise price in settings with bilateral bargaining (and thus bilateral contracting externalities) may be challenged by antitrust authorities. It is not immediately obvious

⁶² This competition is “multilateral” in the sense that it involves not only D1 and D2, but also U1. See Daniel P. O’Brien & Greg Shaffer, *Vertical Control in Markets with Multilateral Competition* (Mich. Ctr. for Rsch on Econ. & Soc. Theory Paper 90-18, 1990) (working paper version of O’Brien & Shaffer, *supra* note 58).

⁶³ See Dennis W. Carlton & Ken Heyer, *Appropriate Antitrust Policy Towards Single-Firm Conduct* 2 (Econ. Analysis Grp. Discussion Paper No. EAG 08-2, 2008), <https://ssrn.com/abstract=1111665>, who distinguish between “extraction,” which “is conduct engaged in by the firm to capture surplus from what the firm has itself created independent of the conduct’s effect on rivals,” and “extension,” which is “single firm conduct that increases the firm’s profit by weakening or eliminating the competitive constraints provided by products of rivals.” They argue that “conduct merely to extract surplus the firm has created independent of the conduct’s effect on rivals should be permitted.”

why vertical restraints should be treated differently, but this is a topic for further discussion.

C. Upstream Competition

I now add upstream competition to the mix. Contractual efficiency aspects of vertical contracts discussed in previous sections remain relevant: vertical restraints can mitigate or eliminate double marginalization; they can promote non-contractible investment at the upstream and/or downstream levels; and bilateral contracting externalities can put downward pressure on wholesale prices, increasing the potential for vertical restraints that soften competition to increase retail prices. Upstream competition can also increase the scope for slotting allowances, RPM, and ET to soften competition.⁶⁴

Upstream competition also brings into play additional vertical restraints, including exclusive dealing and its close cousins, share-based loyalty discounts and anti-steering; and tying and bundling as to their effects on upstream competition. These restraints and issues surrounding them are worthy of another entire chapter, but I will at least touch on a restraint in this class that has received attention recently — anti-steering — and discuss its relationship with ED.⁶⁵

For simplicity, suppose there are two upstream firms, U1 and U2, and a single downstream firm D1. Suppose that U1 and U2 are differentiated Bertrand competitors

⁶⁴ See Greg Shaffer, *Slotting Allowances and Resale Price Maintenance: A Comparison of Facilitating Practices*, 22 RAND J. ECON. 120 (1991) (slotting allowances with observable wholesale prices and RPM imposed by one manufacturer on its retailers can soften competition other retailers and raise price); Patrick Rey & Joseph Stiglitz, *The Role of Exclusive Territories in Producers' Competition*, 26 RAND J. ECON. 431 (1995) (under linear tariffs, exclusive territories can exacerbate double marginalization but can also lower the effective elasticity of the derived demand for the upstream product and soften competition between suppliers; under observable two-part tariffs, exclusive territories can allow commitments to higher observable wholesale prices that soften competition). For a broader discussion of competition-softening effects that can arise when rivals observe each others contracts, see O'Brien, *supra* note 1, at 63, 64; James C. Cooper et al., *Vertical Antitrust Policy as a Problem of Inference*, 23 INT'L J. INDUS. ORG. 639, 643–45 (2005).

⁶⁵ For a high-level overview of the relationship between ED, loyalty discounts, and tying and bundling, see Degraa et al., *supra* note 7.

with linear demand (the same example we have been using) that sell to D1, who is a multiproduct retailer that resells the products to consumers.

Absent vertical restraints, linear pricing by U1 and U2 leads to double marginalization that is worse the more upstream firms are differentiated from each other and gets smaller as the products become closer substitutes. For diversion ratios between zero and one, imperfect upstream competition holds double marginalization in check to some degree, but not perfectly.

Anti-steering in the contract between U1 and D1 is a vertical restraint that prohibits D1 from “steering” customers from U1’s product to U2’s product by charging a lower retail price for U2’s product than for U1’s product. A steering restriction is formally a weak form of exclusive dealing. Pure exclusive dealing would be equivalent to an anti-steering restriction that required charging a very high retail price for rivals’ products, high enough that customers would not buy any of it. Anti-steering that places a floor on the rival’s retail price equal to the retail price of the supplier imposing the restriction is exclusionary in the same general sense but to a much smaller degree.

A straightforward intuition explains why anti-steering used in conjunction with linear tariffs can raise wholesale and retail prices. Suppose U1 raises its wholesale price starting from a situation where U1 and U2 initially charge the same wholesale prices. Absent restrictions on steering, the retailer is likely to respond by raising U1’s retail price relative U2’s retail price, thereby “steering” customers from U1 to U2. The reason the retailer responds this way is that when U1 raises its wholesale price, the retailer’s profit from selling additional units of U1 falls relative to its profit from selling additional units of U2. But suppose U1 has an anti-steering restriction in its contract that prevents the retailer from charging a lower retail price for U2’s product than for U1’s product. In this case, the retailer cannot raise the retail price of U1’s product without also raising the price of U2’s product. This increases U1’s incentive to raise its price for two reasons. First, the retailer responds with a smaller increase in U1’s price due to the requirement that it must

also raise the price of U2 by the same amount, which it would rather not do. Second, any increase in U1's price is accompanied by an increase in U2's retail price, which lessens the impact on U1's sales of the price increase. Both factors cause a smaller loss in U1's sales from a given price increase, which gives U1 a greater incentive to raise price.

Table 7 confirms this logic in the differentiated linear demand example we have been using.⁶⁶

Table 7: Effects of Anti-steering with Linear Tariffs and Efficient Nonlinear Tariffs

Diversion Ratio	Wholesale Price that Induces the Fully Integrated Outcome	Wholesale Price under Linear Tariff	Wholesale Price under Anti-steering with Linear Tariff	Retail Price under Linear Tariff	Retail Price Under Anti-steering with Linear Tariff	% Welfare Gain from Anti-steering with Linear Tariff	% Welfare Gain from Efficient Nonlinear Tariff that Achieves Fully Integrated Outcome
0	0	50.00	66.67	75.00	83.33	-30%	71%
0.1	0	47.37	66.67	73.68	83.33	-33%	64%
0.2	0	44.44	66.67	72.22	83.33	-36%	57%
0.3	0	41.18	66.67	70.59	83.33	-39%	49%
0.4	0	37.50	66.67	68.75	83.33	-42%	42%
0.5	0	33.33	66.67	66.67	83.33	-45%	35%
0.6	0	28.57	66.67	64.29	83.33	-48%	28%
0.7	0	23.08	66.67	61.54	83.33	-51%	21%
0.8	0	16.67	66.67	58.33	83.33	-54%	14%
0.9	0	9.09	66.67	54.55	83.33	-57%	7%
1	0	0.00	66.67	50.00	83.33	-59%	0%

Recall that the fully integrated retail price is \$50. The wholesale price that induces the fully integrated outcome in this case is upstream marginal cost (zero in this example), as the fully integrated outcome requires that the single downstream firm face the same marginal cost as a vertically integrated firm. Under linear tariffs and without restrictions on steering, the wholesale price exceeds marginal cost, causing double marginalization

⁶⁶ The example is based on a modification of the model in Dennis W. Carlton & Ralph A. Winter, *Vertical Most-Favored-Nation Restraints and Credit Card No-Surcharge Rules*, 61 J.L. & ECON. 215 (2018).

and a retail price above the fully integrated price of \$50 except when upstream firms are perfectly competitive (when the diversion ratio is 1).

Consistent with the intuition presented above, an anti-steering restriction by U1 in combination with a linear tariff raises both the wholesale and retail price relative to the case with a linear tariff and no steering restrictions. The price increases cause substantial welfare reductions relative to the case with no steering restrictions, as indicated in the second column from the right in Table 7.

In environments where upstream firms can sign and enforce anti-steering restrictions but are limited to linear tariffs, this analysis provides a potential justification for prohibiting steering restrictions. However, if upstream firms can employ nonlinear contracts, this justification disappears, as is evident from the last column in Table 7. In this case, nonlinear contracts with no steering restrictions eliminate double marginalization, support the fully integrated outcome, and are more profitable for the upstream firms.⁶⁷ This result illustrates once again the importance of the contracts chosen by firms under the counterfactual in which specific vertical restraints are prohibited.

CONCLUSION

The over-arching implications of this chapter are (i) vertical restraints are often pro-competitive, a prediction that is unsurprising given that the parties' to the vertical contracts are producers of complementary inputs into production that must be combined to produce products; and (ii) the effects vertical restraints in specific cases depend on many details of the economic environment. Details of the economic environment discussed in this chapter include:

- How contracts are likely to adapt when particular restraints are prohibited;

⁶⁷ Carlton & Winter, *supra* note 66, examine more general models of anti-steering (which they term vertical MFNs, or "VMFNs") that involve downstream competition.

- Whether firms make non-contractible decisions (e.g., upstream and downstream investment decisions) that affect the demand for the product;
- Whether contract terms involve a single product or multiple products;
- Whether contract terms are offered on a take-it or leave-it basis with no bilateral renegotiation or are bilaterally negotiated;
- The information downstream firms have about their rivals' contracts;
- The upstream and downstream market structure.

All of these factors can be important, at least within the confines of the existing economic literature, and this list omits key factors. For example, this chapter does not discuss economies of scale and network effects, two factors that are critical in dynamic theories of exclusive dealing and tying, nor does it discuss variable proportions between different inputs into production, which affects the analysis of tying.

Antitrust practitioners long for simplification. Unfortunately, economic theory has not cooperated in the area of vertical restraints. It would be nice if the analysis of vertical restraints were simple, but it is not. The complexities are undoubtedly part of the explanation for why there are currently no federal vertical restraints guidelines in the U.S.

A silver lining is that modern industrial organization has provided many tools for navigating the complexities. But a tarnish on the silver is that the very same tools are good at identifying ways that vertical restraints *could* harm competition without saying anything about the costs of determining whether real harm exists and the type I and II error costs associated with intervention. Given this fact about the state of economic theory in the area of vertical restraints, two fair questions are: (1) what market forces exist to limit plaintiffs' incentives to pursue cases against vertical restraints that do not pass the social benefit-cost test? and (2) are these forces strong enough? Two answers to the first question seem to be: (a) limited resources at the antitrust agencies and the courts, and (b)

rule-of-reason treatment of vertical restraints by the law that places the burden of proof on plaintiffs and thereby limits their probability for success. Both factors increase the costs of pursuing antitrust claims against vertical restraints. The answer to the second question—whether the forces pushing against plaintiff activity are strong enough—is open to debate. However, given the limited empirical evidence documenting harm from vertical restraints,⁶⁸ it would be hard to argue for reducing the costs to plaintiffs of pursuing antitrust complaints against vertical restraints.

⁶⁸ See Cooper et al., *supra* note 64, at 658; Francine Lafontaine & Margaret Slade, *Vertical Integration and Firm Boundaries: The Evidence*, 45 J. ECON. LITERATURE 629, 629 (2007).

Self-Preferencing

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INTRODUCTION

Companies that produce at different stages of a production process or that produce complementary goods often have a “self-preference,” meaning that they prefer to buy from, sell to, or otherwise coordinate with their own internal divisions rather than competitors of those divisions. It is a common and self-fulfilling phenomenon. The expectation that other firms will engage in self-preferencing can induce firms to engage in the practice themselves.

To cite just a few notable examples, in 1996, AT&T divested itself of its manufacturing division with the new entity being Lucent Technologies.¹ While AT&T was itself the result of a forced vertical breakup that split AT&T’s local telephone operations from its long-distance service and manufacturing capabilities, the divestiture of Lucent Technologies was voluntary. A primary motivation was that as the markets for telecommunications in which AT&T competed became more competitive (due in part to the Telecommunications Act of 1996), its manufacturing division (known as Western Electric) was increasingly seeking to supply AT&T’s competitors; and those competitors were reluctant to rely on one of their competitors for inputs as they likely feared that Western Electric would give preferential treatment to its own telecommunications division.

One of the major strategic moves in Google’s corporate history was to invest in the Android operating system and to keep it as open source software.² Had it not done so,

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¹ *The Story Of Ma Bell: A Brief History of the Company That Is as Old as the Telephone Itself*, CNN MONEY (July 9, 2001), https://money.cnn.com/2001/07/09/deals/att_history/.

² John Callahan, *The History of Android OS: Its Name, Origin, and More*, ANDROID AUTHORITY (Aug. 18, 2019), <https://www.androidauthority.com/history-android-os-name-789433/>; Press Release, Open Handset

Apple might well have come to dominate the smartphone market, making Google reliant on its competitor's device for delivery of mobile search. And its decision to make Android open source (despite the risk that open source systems fork into incompatible variants) was to limit its opportunities to engage in opportunistic self-preferencing.

In 2012, Apple replaced Google Maps for turn-by-turn instructions with Apple maps in iOS 6. The roll-out did not go well.³ At least initially, the move revealed a "self-preference" despite having an inferior product, and at least part of Apple's motive was likely to avoid relying on Google for an input in case Google were to threaten to give preferential treatment to its own use of Google Maps.

Self-preferencing also raises public policy concerns, including antitrust doctrine toward vertical mergers. This latter topic has been of particular interest recently as the United States Department of Justice (DOJ) and Federal Trade Commission (FTC) have just issued new vertical merger guidelines,⁴ 36 years after the DOJ last issued merger guidelines that addressed vertical mergers. The DOJ 1984 Merger Guidelines⁵ suggested relatively relaxed enforcement and stood in distinct contrast to the relatively hostile treatment of vertical mergers in the DOJ 1968 Merger Guidelines.⁶ While it remains too early to tell whether the 2020 Vertical Merger Guidelines signal that the US agencies will be more aggressive in challenging vertical mergers than they generally have over the past

Alliance, Industry Leaders Announce Open Platform for Mobile Devices (Nov. 5, 2007), http://www.openhandsetalliance.com/press_110507.html.

³ Britney Fitzgerald, *Apple Map Fails: 19 Ridiculous Glitches Spotted in Apple iOS 6's Anti-Google App*, HUFFPOST (Sept. 9, 2012), https://www.huffpost.com/entry/apple-map-fails-ios-6-maps_n_1901599.

⁴ U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, VERTICAL MERGER GUIDELINES (2020) [hereinafter VERTICAL MERGER GUIDELINES], https://www.ftc.gov/system/files/documents/reports/us-department-justice-federal-trade-commission-vertical-merger-guidelines/vertical_merger_guidelines_6-30-20.pdf.

⁵ U.S. DEP'T OF JUSTICE, 1984 MERGER GUIDELINES (1984) [hereinafter 1984 MERGER GUIDELINES], <https://www.justice.gov/archives/atr/1984-merger-guidelines>.

⁶ U.S. DEP'T OF JUSTICE, 1968 MERGER GUIDELINES (1968) [hereinafter 1968 MERGER GUIDELINES], <https://www.justice.gov/archives/atr/1968-merger-guidelines>.

three decades, they might. The DOJ's failed challenge to AT&T's acquisition of Time Warner,⁷ which combined AT&T's DirecTV with Time Warner's video networks, also suggests a greater willingness to block vertical mergers than they have demonstrated over the past 35 years. And several prominent antitrust economists have argued that economic analysis supports a more interventionist approach.⁸

Another broad area of antitrust law in which self-preferencing plays a central role is allegations of "monopoly leveraging" through means other than a merger. This can occur in a variety of ways. Contractual tying is one. Innovation in product design is another, particularly in sectors in which technological change is rapid. When a company integrates previously separate components or products, competitors might frame the decision as monopoly leveraging. Yet another possibility is entry by a dominant firm into an adjacent or complementary stage. While entry by itself is generally considered procompetitive, any preferential treatment the dominant firm gives its own product is sometimes interpreted as monopoly leveraging.

The remainder of this chapter is organized as follows. In the next section, I lay out the economics of self-preferencing by showing how a vertical merger between a distributor of two products with the manufacturer of one of those products creates an incentive to sell more of the good produced by the company it purchases and less of the competing good. I also explain the complicated ways in which that self-preference affects consumers. Then, I describe the new Vertical Merger Guidelines and assess their likely implications for enforcement. Finally, I turn to monopoly leveraging claims. I will focus

⁷ *United States v. AT&T Inc.*, 916 F.3d 1029 (D.C. Cir. 2019).

⁸ *See, e.g.*, Steven C. Salop, *Invigorating Vertical Merger Enforcement*, 127 YALE L.J. 1742 (2018); Steven C. Salop, Presentation at U.S. Federal Trade Commission Hearings on Competition and Consumer Protection in the 21st Century: Revising the Vertical Merger Guidelines (Nov. 1, 2018), https://www.ftc.gov/system/files/documents/public_events/1415284/ftc_hearings_5_georgetown_slides.pdf; Jonathan B. Baker, Nancy L. Rose, Steven C. Salop, & Fiona Scott Morton, Recommendation and Comments on the Draft Vertical Merger Guidelines (Feb. 24, 2020), <https://media.justice.gov/vod/atr/comments-draft-vmg/dvmg-0017.pdf>.

on three cases from the tech sector: suits by the manufacturers of plug-compatible peripherals against IBM in the 1970's, the Department of Justice's suit against Microsoft in the 1990's, and the investigations in a number of jurisdictions into Google for "search bias." The first two are examples of product integration. The third is widely considered to be another such example, although I will argue that it is not.

From the standpoint of competition policy, it might seem desirable to modularize competition to the greatest extent possible so that the best and cheapest products prevail at every stage of a production process and in every component of systems of complementary products. But integration can also create efficiencies – both real and contractual/organizational. Producers at one stage of a value chain often have the greatest incentive and the greatest technical capacity to lower prices or improve products at an adjacent stage. The challenge for public policy is how to trade off the costs of foreclosure resulting from self-preferencing against the efficiencies of integration. Because these trade-offs are complicated, it is perhaps not surprising that there have been pendulum swings in enforcement philosophies and expert opinions. Through the 1960's, antitrust enforcement in the United States was generally hostile to vertical integration. Then, starting in the late 1970's, antitrust enforcers began viewing vertical mergers and vertical integration as being almost entirely benign.⁹ In recent years, the pendulum seems to have at least started to swing back as several prominent scholars have argued for a much more aggressive stance against vertical integration and foreclosure.¹⁰ A general theme of this

⁹ A notable exception was the decision by the Reagan administration Justice Department to settle the long-running monopolization suit by forcing AT&T to divest itself of its local operating companies, which were local monopolies subject to rate regulation. But the presence (and expected persistence) of local rate regulation make that a special case. As long distance service was becoming increasingly competitive, there was a concern that AT&T would try to shift its costs for providing long distance service to its local service, thus both giving it a strategic advantage in long distance service and partially circumventing local rate regulation. Even those who view vertical integration as being benign recognize an exception for vertical integration to circumvent rate regulation.

¹⁰ See note 9.

chapter is that despite these swings in opinion, the economics of how to weigh the competing effects on a case-by-case basis is still under-developed. As a result, presumptions play an important role in enforcement. A key question for policy makers is whether there should still be a presumption that the economic relationship between the production of vertically-related and complementary products is fundamentally different from the economic relationship between the production of substitute products. If so, intervention with respect to vertical/complementary mergers, agreements, and expansion should be far more limited than intervention with respect to horizontal mergers, agreements, and (to a lesser extent) expansion.

I. THE ECONOMICS OF SELF-PREFERENCING

Self-preferencing can arise for a variety of reasons. There might be technological advantages from physical integration of technically separable components. Technological coordination might require the sharing of proprietary knowledge, and a company might not consider contractual promises that limit another firm's use of its intellectual property to provide adequate protection. When a good or service provided by a company is part of a system that can fail, then a company might not want to risk being blamed for a failure that results from another firm's components.¹¹ Another broad class of cases, which this section will address, concerns cases when competition is imperfect at adjacent stages. In such cases, a firm might prefer to get the margin at all stages rather than at just one.

As noted above, it might initially seem desirable to modularize competition at different stages, or for different components, to the maximum extent possible.¹² However,

¹¹ A classic example is Jerrold Electronics, which was a pioneer in the development of cable television systems at the time when the primary use of such systems was to make over-the-air television signals available in areas that got poor reception. Even though such systems had multiple components, some of which were available from multiple sources, Jerrold only offered entire systems. *See United States v. Jerrold Elecs. Corp.*, 187 F. Supp. 545, 551-52 (E.D. Pa. 1960).

¹² *See, e.g., Joseph Farrell & Phil J. Weiser, Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age*, 17 HARV. J.L. & TECH. 85 (2003).

another important consideration arises with respect to complementary activities. In the extreme, suppose that the two stages are provided by two different monopolists. Assuming they are restricted to charging linear prices,¹³ individual profit-maximization creates a problem known as “double marginalization.” A combination of the two firms through a merger eliminates the double marginalization and causes prices to drop. Even though profits go up, consumers benefit from the lower prices. In a remarkable work, Augustin Cournot demonstrated this point in 1838 for products that he modeled as being complementary.¹⁴ Spengler demonstrated it for a model of vertical mergers in 1950.¹⁵

This trade-off between the benefits of modularizing competition for complementary goods and avoiding double marginalization is central to the pre-merger review of vertical mergers. Merger enforcement entails predicting market outcomes with an altered market structure. The logic competition agencies and courts use to make such predictions is to analyze how a merger affects the firms’ underlying incentives and to assume that the post-merger firm will pursue its own interest. Consider a merger of two competitors, A and B. When they are separate, A’s attempts to attract more business (by, say, cutting prices or improving its product) might take business from B. All else equal, therefore, a horizontal merger between A and B dulls the incentive to compete for more business. To the extent that there are other competitors in the market that will try to

¹³ That is, the seller charges a constant price per unit regardless of the quantity a buyer purchases. Hart and Tirole analyzed vertical mergers when sellers can charge “perfect” non-linear prices. See Oliver Hart & Jean Tirole, *Vertical Integration and Market Foreclosure*, 1990 BROOKINGS PAPERS ON ECON. ACTIVITY: MICROECONOMICS 205 (1990). With perfect non-linear prices, the price for the marginal unit equals marginal cost. Thus, perfect non-linear pricing eliminates EDM as an effect of a vertical merger. While non-linear pricing is common, “perfect” non-linear pricing is not. With perfect non-linear pricing, the seller extracts all the available economic profit in the fixed fee. Getting agreement on such a fixed fee, given imperfect information, would in general be challenging. Also, such a contract would leave the seller with no incentive to promote the product. To maintain such an incentive, the pricing structure must entail a price above the upstream firm’s marginal cost.

¹⁴ AUGUSTIN COURNOT, RESEARCHES INTO THE MATHEMATICAL PRINCIPLES OF THE THEORY OF WEALTH (Nathaniel T. Bacon trans., London, MacMillan 1897). The original French version was published in 1838.

¹⁵ Joseph J. Spengler, *Vertical Integration and Antitrust Policy*, 58 J. POL. ECON. 347-52 (1950).

compete away business from the A-B combination and from which the combined firm can try to attract customers, the harm to competition may be insubstantial and potentially outweighed by any efficiencies that the merged firm can realize. But, absent efficiencies, horizontal mergers reduce the incentive of merging firms to compete.

Because of the elimination of double marginalization (EDM) in vertical/complementary mergers, the effect on pricing incentives can be exactly the opposite of the case with horizontal mergers. This fundamental difference between the incentive effects of horizontal mergers and mergers of successive monopolists is why competition authorities and courts are generally more likely to block horizontal mergers than they are to block vertical or complementary mergers. As the European Commission explained in its non-horizontal merger guidelines: “Non-horizontal mergers are generally less likely to significantly impede effective competition than horizontal mergers.”¹⁶ It also explains why the US competition agencies have been far more likely to challenge horizontal mergers than vertical mergers or mergers of firms that produce complementary products.

But EDM does not completely resolve the competition issues. Both Cournot’s and Spengler’s exposition of the problem rested on the assumption of successive or complementary monopoly. Those models provide no scope for self-preferencing because there are no competitors to be disadvantaged through a strategy of raising rivals’ costs (RRC)¹⁷ or foreclosure. To model how a vertical merger could result in an anticompetitive effect through foreclosure of competitors of the merging firms, the underlying

¹⁶ EUROPEAN COMM’N, GUIDELINES ON THE ASSESSMENT OF NON-HORIZONTAL MERGERS UNDER THE COUNCIL REGULATION ON THE CONTROL OF CONCENTRATION BETWEEN UNDERTAKINGS, ¶11 (Oct. 18, 2008), <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:265:0006:0025:en:PDF>.

¹⁷ The term “raising rivals’ costs” is due to Salop and Scheffman. See Steven C. Salop & David T. Scheffman, *Raising Rivals’ Costs*, 73 AM. ECON. REV. 267 (1983); Steven C. Salop & David T. Scheffman, *Cost-Raising Strategies*, 36 J. INDUS. ECON. 19 (1987); see also Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals’ Costs to Achieve Power over Price*, 96 YALE L.J. 209 (1986).

assumptions must allow for competition within at least one stage of production.

A. Effect of a Vertical Merger on Pricing Incentives

With imperfect competition at successive or complementary stages, the theoretical basis for expecting self-preferencing is quite robust. However, if one then examines the effect of self-preferencing on consumers, the results are much more fragile. Self-preferencing can result in consumer harm, but the case that such a result is to be expected is unpersuasive.

The simplest model to explore the potential for a vertical merger to harm consumers entails a monopolist at one stage and two firms at the adjacent stage. For the purposes of this chapter, I will assume a downstream monopolist (think of it as a retailer and denote it as R) that (by virtue of being a monopolist) is the only seller of goods it purchases at wholesale from two manufacturers.¹⁸ Call the goods they produce A and B and refer to the two firms as MA and MB. Suppose that demand for the final goods is given by:

$$(1) Q_A = 100 - 4 P_A + 2 P_B$$

$$(2) Q_B = 100 + 2 P_A - 4 P_B,$$

where Q_A and Q_B are the quantities of Goods A and B that R sells and P_A and P_B are the prices it charges. Suppose further that MA and MB have unit costs of 10 and charge R wholesale prices of 20. The key features of these two demand curves are that the demand for each good is a decreasing function of its own price and an increasing function of the price of the other good, so they are substitutes. When the price of one of the goods increases (holding constant the price of the other), some of the demand lost gets diverted

¹⁸ This numerical example is based on Michael A. Salinger, *Vertical Mergers in Multi-Product Industries and Edgeworth's Paradox of Taxation*, 39 J. INDUS. ECON. 546-56 (1991).

to the other good.

It is straightforward to show that the prices that maximize the retailer's profits in this example are $P_A = P_B = 35$. At those prices, demand for the two goods is $Q_A = Q_B = 30$. The retailer's profits are given by:

$$(3) \pi_R = (35 - 20)30 + (35 - 20)30 = 900 .$$

The profits of the two manufacturers are:

$$(4) \pi_{MA} = (20 - 10)30 = 300 \text{ and}$$

$$(5) \pi_{MB} = (20 - 10)30 = 300.$$

To see that a price of 35 for Good A maximizes the retailer's profits, consider what would happen if it lowered its price to 34. Based on equations (1) and (2), a reduction in P_A by 1 causes Q_A to increase by 4 and Q_B to drop by 2. Thus, the \$1 price reduction for Good A would result in $Q_A = 34$ and $Q_B = 28$. The retailer's profits would then be:

$$(6) \pi_R = (34 - 20)34 + (35 - 20)28 = 896 ,$$

which is less than the maximum profits of 900. We can decompose the profit reduction of 4 into three components:

$$(7) \Delta\pi_R = (34 - 35)30 + (34 - 20)4 - 2(35 - 20) = -4.$$

The first term reflects the reduced price R receives for the 30 units of Good A it would sell at the higher price. The second term is R's profit margin on the increased sales of 4 units that result from the price reduction. The last term reflects the margin R loses from selling 2 fewer units of Good B.

Similarly, consider increasing P_B by 1 to \$36 (holding P_A at the profit-maximizing value of 35). The increase causes the quantity of Good B demanded to drop by 4 and the quantity of Good A demanded to increase by 2. With those prices, R's profits are:

$$(8) \pi_R = (35 - 20)32 + (36 - 20)26 = 896.$$

Again, the profits are lower; and we can decompose the price reduction into three components:

$$(9) \Delta\pi_R = (36 - 35)26 - (35 - 20)4 + 2(35 - 20) = -4.$$

The first component is the higher margin per unit that R receives on the units of Good B that it continues to sell. The second term is the margin R loses because of the reduction in demand for B caused by the price increase. The third term reflects the margin on the additional sales of Good A that result from the increase in the price of Good B.

This decomposition of the incremental effects from price changes helps reveal how a vertical merger creates an incentive for self-preferencing. Suppose R and MA merge and that, as a result, R is able to obtain Good A at marginal cost of 10 rather than the market price of 20. Modifying equation (7) to reflect the lower marginal cost, we get:

$$(7') \quad \Delta\pi_R = (34 - 35)30 + (34 - 10)4 - 2(35 - 20) = 36$$

The difference between (7) and (7') is in the middle term. Rather than getting a margin of $(34 - 20) = 14$ on each additional unit of Good A sold, R now gets a margin $(34 - 10) = 24$. The extra 10 per unit that R now gets from a decrease in the price of Good A applied to the 4 extra units sold from the price decrease tilts the balance from making the price decrease unprofitable to making it profitable.

The difference between (7) and (7') reflects what is commonly referred to as EDM. Holding the price of Good B constant, the merged firm has an incentive to lower the price of Good A, and this incentive reflects self-preferencing. Prior to the merger, because the wholesale prices to R are the same for A and B (and because demands are symmetric), R charges the same for the two goods and is indifferent between selling an extra unit of A and an extra unit of B. With the merger, R's margin on A increases and therefore it develops a preference for selling an additional unit of A rather than an additional unit of B; and, as a result, it has an incentive to lower P_A (again, all else equal).

But the effect of the merger on R's incentives with respect to P_A is not the entire

story. R has another lever to increase sales of A as long as it is willing to sacrifice some sales of B. Now that R gets Good A at a marginal cost of 10, the effect on R's profits from raising P_B changes from (9) to:

$$(9') \Delta\pi_R = (36 - 35)26 - (35 - 20)4 + 2(35 - 10) = 16.$$

Thus, whereas an increase in P_B from 35 to 36 lowers R's profits prior to the merger, the increased margin on A makes an increase in P_B after the merger profitable, *holding P_A constant at \$35*.

Because A and B are substitutes, every increase in sales of one of the products due to a decrease in its price diverts some sales from the other. Given equations (1) and (2), the rate of this diversion is $\frac{1}{2}$ unit in lost sales of A for every 1 unit increase in the sales of B. The margin on the diverted sales is a marginal opportunity cost of selling each good. When R is independent of MA and MB, it takes this opportunity cost into account with respect to the retail margin. That is, when it considers lowering its price to increase sales of B, it recognizes that half the increased sales of B will come at the expense of sales of A. In the formal economic analysis, this opportunity cost has the same effect on R's incentives as an out-of-pocket opportunity cost of the same magnitude. When R and MA merge, however, this marginal opportunity cost increases. Prior to the merger, this opportunity cost is the diversion ratio (0.5 in this case) multiplied by the *retail* margin on the other good. After the merger, this opportunity cost of sales of B is the diversion ratio multiplied by the *total* margin on Good A. Because the manufacturer's margin on Good A had been 10 and the diversion ratio is 0.5, the merger, in effect, increases the merged firm's marginal cost of selling B by $0.5 \times \$10 = \5 . Moresi and Salop refer to this effect as vertical upward pricing pressure.¹⁹

Intuitively, it might seem that a vertical merger between R and MA must entail a

¹⁹ Serge Moresi and Steven C. Salop, vGUPPI: Scoring Unilateral Pricing Incentives in Vertical Mergers, 79 ANTITRUST L. J. 185 (2013).

trade-off between a price reduction for Good A due to EDM and a price increase for Good B from a “raising rivals’ costs” (RRC) incentive. This intuition turns out to be wrong, however. While the merger causes the profit-maximizing price to drop from \$35 to \$30, the price for Good B remains the same at \$35. This is the case despite the vertical upward pricing pressure. The intuition that vertical upward pricing pressure ensures an increase in the price of Good B fails because it ignores how a reduction in the price of Good A from \$35 to \$30 interacts with the effect of increasing the price of B from \$35 to \$36. There are two effects to consider. In (9’), the first term reflects the increased revenue the firm generates from the units of Good B that it continues to sell after the \$1 price increase. In equation (9’), the estimated effect is \$26. But, the reduction in the price of Good A from \$35 to \$30 causes demand for B to drop by 10 units. Thus, the \$1 increase in price underlying equation (9’) applies only to 16 units, not 26. Second, because the reduction in the price of Good A from \$35 to \$30 reduces the total margin on Good A, it also reduces the vertical upward pricing pressure. Taking account of the reduction in the price of Good A to \$30, the effect of increasing the price of Good B to \$36 becomes:

$$(9'') \Delta\pi_R = (36 - 35)16 - (35 - 20)4 + 2(30 - 10) = -4.$$

In this specific example, because the price of Good A drops while the price of Good B remains the same, consumers are better off. And this is so even assuming that the wholesale price of Good B remains constant. If MB responds to the reduced demand for Good B by lowering its wholesale price, then R would rationally respond by lowering the retail price of Good B as well, thus making consumers still better off.²⁰

While the vertical merger of R and MA benefits consumers, it lowers MB’s profits. Without the merger, it sells 30 units of B and, with a profit margin of \$10 per unit, earns profits of \$300. After the merger, it only sells 20 and, assuming it keeps the same margin,

²⁰ Another model in which this competitive effect on the price of the intermediate good can dominate the foreclosure effect is Michael A. Salinger, *Vertical Mergers and Market Foreclosure*, 103 Q. J. ECON. 345-56 (1988).

its profits drop to \$200. Given the reduction in MB's unit sales and profits, it should come as no surprise if MB complained to the competition authorities that the merger of R and MA will result in foreclosure of MB and will therefore be harmful to competition. But the profit reduction for MB resulting from the merger is due entirely to the reduction in the price of MA. If, as is appropriate, one interprets the retail margin on Good B as its cost of distribution, its loss of sales and profits does not reflect an RRC effect.

The exposition rests on linear demand functions and a specific set of assumptions about the parameters (constants) in those demand curves. Actual demand curves need not be linear. But there is nothing unusual about linear demand curves. Moreover, some other commonly used functional forms lead to similar conclusions. Thus, one cannot dismiss the results from linear demand curves as an odd special case.²¹

The condition on the parameters for a vertical merger to leave the price of Good B unchanged is that the coefficient on the price of Good B in the demand equation for Good A equals the coefficient on Good A in the demand equation for Good B. In equations (1) and (2), both equal 2. They do not have to be 2 for a vertical merger to have no effect on the price of B. That effect would be the same if both cross effects were both 0.5, 1 or 3.²² The result does not require that the other parameters be equal, so it does not require symmetric demand.

Even when the demand curves are not symmetric, there is a theoretical reason to

²¹ Another commonly used functional form assumes that the logarithm of demand is a linear function of the logarithm of prices. With this functional form, the elasticities and cross-price elasticities of demand are constants (meaning they are the same at all prices). For a technical reason – the profit function is not bounded – this functional form is not suitable for analyzing profit-maximizing decisions by a firm selling two substitute goods. For the same reason, assuming that the logarithm of demand is a linear function of the prices (as opposed to the logarithm of prices), is not suitable either. However, one can assume that the quantity demanded is a function of the logarithm of prices. If one calibrates such a model to imply the same quantities demanded, elasticities of demand, and cross-price elasticities of demand as in the linear example in the body of this paper, it predicts that a vertical merger causes the prices of both goods to drop.

²² As a technical matter, the magnitude of the own-price effects limits the magnitude of the cross-price price effects.

assume, as a base case, that the cross-price effects are equal.²³ They do not have to be; and, when they are not, a vertical merger between R and MA induces a change in the price R charges for Good B. When the coefficient on the price of Good B in the demand equation for Good A exceeds the coefficient on the price of Good A in the demand for Good B, then the R-MA merger causes an increase in the retail price of Good B. Under that condition, the force driving the merged firm to increase the price of Good B – the RRC effect – depends on the coefficient on Good B in the demand equation for Good A. The offsetting effect – the effect of a reduction in the price of Good A on the optimal price for Good B – depends on the coefficient on the price of Good A in the demand equation for Good B. When the two coefficients are equal, these two effects offset each other. When the coefficient on the price of Good B in the demand equation for Good A exceeds the coefficient on the price of Good A in the demand equation for Good B, the RRC effect dominates.

Even if one could present econometric evidence that the underlying demand conditions make an increase in the price of Good B likely, such a condition is not sufficient to establish net consumer harm (meaning a reduction in consumer surplus) from a vertical merger between R and MA. If the merger simulation implied an increase in the price of Good B and a decrease in the price of Good A, one would need to weigh the different effects. It is theoretically possible that the net effect on consumers could be negative. Indeed, it is theoretically possible that if the RRC effect is sufficiently strong and the countervailing competitive effect is sufficiently weak, the merged firm might have an incentive to increase the price of Good A as well as the price of Good B.

If a merger simulation predicts that a vertical merger between R and MA would

²³ The theoretical foundation is known as the “Slutsky condition,” which states that the cross-price effects in an individual’s compensated demand curve must be equal. An individual’s actual (or “Marshallian”) demand curve depends on both the compensated demand curve and income effects. Income effects can cause the cross-price effects to differ and, in any event, market demand curves need not have this property of individual demand curves.

cause the price of Good B to increase, the same model could predict that a vertical merger between R and MB would cause the price of Good A to drop. This lack of robustness in the models that might predict harm from a vertical merger poses significant challenges for policy makers. If enforcement policy would prevent a firm from merging with some firms at an adjacent stage but not others, the agencies should be able to provide reasonable guidance for what determines which deals they are likely to approve and which ones they are likely to challenge. The DOJ sought to block AT&T's acquisition of Time-Warner. Would it have sought to block AT&T from acquiring any major programmer? Would it have sought to block any major program distributor from acquiring Time-Warner? Even if the Agencies rely at least in part on the results of some sort of merger simulation, they need to provide enough guidance about what conditions tend to generate challenges that parties can rely on without hiring an economist to formulate and calibrate a Nash bargaining model.

B. Complications

In most merger investigations, an assumption underlying the analysis of competitive effects is that, both before and after the merger, the firms involved choose the prices that maximize their profits. This is the case whether the analysis is a full-blown merger simulation or the relatively recent development of Upward Pricing Pressure (UPP) analysis.²⁴

To be sure, the US competition agencies have increasingly relied on bargaining models in their merger simulations.²⁵ These models have proved particularly appropriate in markets where bargaining plays a prominent role in price determination, such as the

²⁴ Joseph Farrell and Carl Shapiro, *Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition*, 10 B.E. J. THEORETICAL ECON.: POLICIES & PERSPECTIVES 2 (2010), <https://faculty.haas.berkeley.edu/shapiro/alternative.pdf>.

²⁵ Aviv Nevo, Deputy Assistant Attorney Gen. For Econ., Antitrust Div., U.S. Dep't of Justice, *Mergers that Increase Bargaining Leverage* (Jan. 22 2014), <https://www.justice.gov/atr/file/517781/download>.

prices that managed care companies pay hospitals.

In analyzing bargaining situations, the standard practice among competition agency economists and experts who work for them is to rely on the Nash Bargaining solution.²⁶ The model in the previous section rested on the assumption of duopoly upstream and monopoly downstream. The bargaining assumption might seem more natural when an upstream monopolist sells an input to two competing downstream firms. In such a situation, the monopolist and each downstream firm might bargain over the price of the intermediate good that the upstream monopolist provides. Still, one might imagine R and MB negotiating over the retail margin R can charge on Good B.

Under the Nash bargaining solution, the price falls somewhere between the price the monopolist would ideally like to charge and the minimum it would be willing to accept. Where the price falls within that range depends on the relative bargaining power of the two firms. (If, as some modelers assume, the two parties have equal bargaining power, the final outcome falls near the middle of the range between the minimum price the seller would accept and the price that would maximize the seller's profits.)

In deciding the minimal terms that it is willing to accept, each firm considers what would happen if negotiations were to break down. When negotiations between the monopolist at one stage and one of two competing firms at the other stage break down, the result is typically increased sales by the other competing firm. When it is integrated with the other competing firm, the monopolist does not lose as much from the failure to reach an agreement because it gets the margin on the increased sales of the firm it owns. With less to lose from the breakdown of negotiations, it is certainly plausible that the merger would allow the firm to strike a more attractive bargain. Such an outcome is most

²⁶ John Nash, *The Bargaining Problem*, 18 *ECONOMETRICA* 128-40 (1950). For a discussion of using the Nash Bargaining Model for modeling vertical mergers, see William P. Rogerson, *Modelling and Predicting the Competitive Effects of Vertical Mergers: The Bargaining Leverage Over Rivals (BLR) Effect*, CANADIAN J. ECON. (forthcoming 2020), <https://media.justice.gov/vod/atr/comments-draft-vmg/dvmg-0068.pdf>.

plausible when the terms the monopolist negotiates before a vertical merger are worse than the minimum (from its perspective) acceptable terms after the merger. The case is less persuasive when the pre-merger terms are better from the standpoint of the monopolist than the minimally necessary terms for an agreement with MB to be profitable.

Another complication concerns contractual incompleteness. The transactions cost literature on vertical integration has stressed the risk of expropriation when firms make “durable transaction-specific investments.”²⁷ In the above example, if R is the only feasible retailer to distribute Good B to final consumers (as we have assumed), then any sunk costs MB had to incur to produce Good B are transaction specific. Suppose that MB’s entry into the market would be profitable if it could sell 30 per year with a profit margin of \$10 per unit over the life of its investment but would be unprofitable if it could only sell 20 per year. Under such circumstance, B might enter if antitrust enforcement is hostile to vertical mergers and not enter if antitrust enforcement is tolerant of vertical mergers. If, in fact, one could establish that MB would not have entered had it anticipated the merger between R and MA, is there a persuasive case that the merger is anticompetitive and should be blocked?

Such a position is problematic for at least two reasons. First, it ignores the possibility that R would acquire MB and that such an acquisition would increase the expected profitability of MB’s entry. Second, and more fundamentally, suppose that the profitability of MB’s entry also requires the persistence of tacit collusion with MA to keep prices above their marginal costs? If so, should the antitrust authorities permit price fixing between MA and MB because it is “dynamically” pro-competitive? Alternatively, suppose that MB had entered into a contract with R under which it promised to supply

²⁷ Oliver E. Williamson, *Transaction-Cost Economics: The Governance of Contractual Relations*, 22 J. L. & ECON. 233, 239 (1979).

MB to R for \$20/unit with the constraint that R not reduce the price of Good A below \$35/unit? If such a contract would be viewed as a naked restraint of trade that violates the Sherman Act, then blocking the merger between R and MA to accomplish the identical objective makes no sense.

As I will discuss in more detail below, companies often enter markets knowing that they rely critically on performance by companies at adjacent stages. When they do, they need to recognize and, to the extent possible, protect themselves against the risk that the company they rely on might alter its behavior.

Whenever entry requires sunk costs, as it almost always does, it entails risks. One of the common risks is that the market environment becomes more competitive, thus making entry less attractive. Encouraging entry by standing in the way of future procompetitive developments is the essence of protecting competitors rather than protecting competition.

II. THE NEW US VERTICAL MERGER GUIDELINES AND THEIR PREDECESSORS

The first US merger guidelines that covered vertical mergers were the DOJ's 1968 Merger Guidelines.²⁸ Prior to the newly-issued DOJ and FTC Vertical Merger Guidelines, the most recent US merger Guidelines with standards for vertical mergers were the DOJ's 1984 Merger Guidelines.²⁹ The DOJ and FTC have issued revised horizontal merger guidelines three times since 1984, most recently in 2010.³⁰ In 2007, the European Commission issued non-horizontal merger guidelines.³¹ The US agencies, however, had

²⁸ 1968 MERGER GUIDELINES, *supra* note 6.

²⁹ 1984 MERGER GUIDELINES, *supra* note 5.

³⁰ The revisions were in 1992, 1997, and 2010. See U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES (2010) [hereinafter 2010 MERGER GUIDELINES], <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>; U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES (1997), <https://www.justice.gov/atr/horizontal-merger-guidelines-0>; U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES (1992), <https://www.justice.gov/sites/default/files/atr/legacy/2007/07/11/11250.pdf>.

³¹ *Guidelines on the Assessment of Non-Horizontal Mergers Under the Council Regulation on the Control of*

not seen fit to issue new vertical merger guidelines until now. In evaluating the new US vertical merger guidelines, it is worth considering what they are replacing, why it took so long for the FTC and DOJ to decide to issue new vertical merger guidelines, and why they ultimately concluded that they needed to issue new vertical merger guidelines.

The 1968 Guidelines reflected the “structure-performance” paradigm that had dominated the industrial economics literature since the seminal work of Joe Bain as well as an implicit view that vertical mergers among firms with significant market shares posed nearly as great a threat to competition as horizontal mergers.³² They stated:

The Department's enforcement activity under Section 7 of the Clayton Act, as in the merger field generally, is intended to prevent changes in market structure that are likely to lead over the course of time to significant anticompetitive consequences. In general, the Department believes that such consequences can be expected to occur whenever a particular vertical acquisition, or series of acquisitions, by one or more of the firms in a supplying or purchasing market, tends significantly to raise barriers to entry in either market or to disadvantage existing non-integrated or partly integrated firms in either market in ways unrelated to economic efficiency.³³

The 1968 Guidelines did not explicitly use the term “self-preferencing,” but the stated concern about not putting other firms at a disadvantage embodies the view that self-preferencing by a firm in a sufficiently concentrated market would constitute an antitrust violation. To prevent the possibility that a vertical merger would put competing firms at a disadvantage, the DOJ expressed its intent to block a vertical merger when the supplier of the intermediate good has at least 10% of the market.³⁴ This threshold exceeded the market share thresholds for objectionable horizontal mergers, but not by much.

Between 1968 and 1984, the Chicago critique of the industrial economics literature

Concentrations Between Undertakings, 265 OFFICIAL J. EUR. UNION 6, 7 (Oct. 18, 2008), [https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52008XC1018\(03\)](https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52008XC1018(03)); Press Release, European Comm’n, Mergers: Commission Adopts Guidelines for Merging Companies with Vertical or Conglomerate Relationship (Nov. 28, 2007), https://ec.europa.eu/commission/presscorner/detail/en/IP_07_1780.

³² See JOE S. BAIN, *INDUSTRIAL ORGANIZATION* (1959).

³³ 1968 MERGER GUIDELINES, *supra* note 6, at § 11.

³⁴ *Id.* at 3 (“[A]dverse effects in the purchasing firm's market will normally occur only as the result of significant vertical mergers involving supplying firms with market shares in excess of 10%.”).

had significantly influenced antitrust policy makers.³⁵ A key component of the Chicago critique was the importance of the distinction between vertical mergers and restraints on the one hand and horizontal mergers and restraints on the other. The two models that were key to the Chicago school critique of vertical merger policy were the model of a monopolist vertically integrating into a perfectly competitive stage and the successive monopoly model. The former gave rise to what is commonly referred to as the “single monopoly profit theorem.”³⁶ It states that as long as an adjacent stage is competitive, a monopolist in one stage cannot increase its profits by vertically integrating into an adjacent stage. The underlying assumption of *perfect* competition (as well as some additional assumptions needed for the result) severely limit its relevance for antitrust policy. The key result in the successive monopoly model is that prices under successive monopoly are even higher than they are under vertically integrated monopoly and that, as a result, a vertical merger between successive monopolists would result in lower, not higher prices.

These ideas influenced policy and caused the section on vertical mergers in the 1984 Merger Guidelines to suggest much less enforcement against vertical mergers (and, implicitly, much less of a concern that self-preferencing is sufficient grounds for market intervention). The primary concern with vertical mergers expressed in those guidelines was potential competition. Although not explicitly stated, the underlying logic was much different from the logic underlying horizontal merger enforcement, which focuses heavily on how a merger will affect short run pricing incentives. With its focus on the disciplining effect of potential entry, the 1984 Guidelines would seem to suggest a merger of successive monopolists would face a serious risk of a challenge. Yet, according to the successive monopoly model, a merger of successive monopolists would create an

³⁵ While it was the Reagan era DOJ that issued the 1984 Merger Guidelines (as well as the more major revision in 1982), those guidelines have generally received bipartisan support.

³⁶ Ward S. Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19 (1957).

incentive to lower prices—not to raise them. Notwithstanding the successive monopoly model, however, the concern with eliminating potential competition was economically sound. When two firms each have dominant positions in successive (or complementary) stages of an industry, the dominant firm at one stage is typically the firm with the biggest incentive to challenge the monopoly at the adjacent stage.

The 2020 Vertical Merger Guidelines seem to represent a fundamental change in approach. The effect of a vertical merger on entry remains a concern. Section 1 states, “In addition, if one of the parties to a transaction could use its pre-existing operations to facilitate entry into the other’s market, the Agencies may consider whether the merger removes competition from the potential entrant, using the methods described in the Horizontal Merger Guidelines.”³⁷ This last clause is potentially significant. The 2010 Horizontal Merger Guidelines state:

A merger between an incumbent and a potential entrant can raise significant competitive concerns. The lessening of competition resulting from such a merger is more likely to be substantial, the larger is the market share of the incumbent, the greater is the competitive significance of the potential entrant, and the greater is the competitive threat posed by this potential entrant relative to others.³⁸

In cases of successive dominance, each firm has a (very) large share at its respective stage and the firm at the other stage is of great competitive significance. Thus, one can read the reference to the approach of the Horizontal Merger Guidelines as reflecting a particular concern for mergers of successively dominant firms. If the Agencies intended to indicate a special concern with such mergers, it is puzzling why they did so in such an indirect way (particularly since challenges to horizontal mergers based on potential entry concerns are rare).

Despite the reference to concerns about entry, these guidelines seem to suggest enforcement based on predicting relatively short-run price effects (which is also the focus

³⁷ VERTICAL MERGER GUIDELINES, *supra* note 4, at § 1.

³⁸ 2010 MERGER GUIDELINES, *supra* note 30, at § 5.3.

of most horizontal merger enforcement). How much enforcement will change as a result of the new Vertical Merger Guidelines is not clear as they are ambiguous in spots. Three are of particular importance.

The first issue concerns whether the projected price increases that will give rise to a challenge must be “downstream” (*i.e.*, final good) or, alternatively, whether a projected increase in upstream prices (*i.e.*, intermediate good prices) would be sufficient. Section 1 states, “When a merger involves products at different levels of a supply chain, the direct customers the Agencies will consider are actual and potential buyers of the *downstream* products.”³⁹ This sentence would seem to indicate that a projected increase in downstream prices will be necessary to warrant a challenge. However, Section 3 states, “In any merger enforcement action involving a vertical merger, the Agencies will normally identify one or more relevant markets in which the merger may substantially lessen competition.”⁴⁰ Then, the heading for “Example 1” is “Relevant markets can be upstream or downstream.” If an upstream market can be a relevant market, then one might read this passage to suggest that increase in the price of an input (which could be a downstream margin) will be sufficient to merit a challenge. This distinction is important because, as Section II demonstrated, a plausible outcome of a vertical merger is an increase in the price of an input despite a reduction in the price of the final good.

The second concerns two cryptic sentences:

To the extent practicable, the Agencies use a consistent set of facts and assumptions to evaluate both the potential competitive harm from a vertical merger and the potential benefits to competition.

The Agencies do not treat merger simulation evidence as conclusive in itself, and they place more weight on whether merger simulations using reasonable models consistently predict substantial price increases than on the precise prediction of any single simulation.⁴¹

³⁹ VERTICAL MERGER GUIDELINES, *supra* note 4, at § 1 (emphasis added).

⁴⁰ *Id.* at § 3.

⁴¹ *Id.* at § 4.

If a “consistent set of facts” requires models based on a single set of assumptions that incorporates the complicated cross-effects of vertical mergers and if the second sentence means that the models the Agencies rely on to justify a challenge to a vertical merger must be robust to assumptions that are difficult to verify (such as the functional form of demand curves), then they may find that very few vertical mergers meet their standards for a challenge. However, if the Agencies mean the phrase, “[t]o the extent practicable,” to provide wiggle room to challenge vertical mergers even if they do not have a coherent model that is robust with respect to a range of plausible alternatives, then their attempts at enforcement might be substantially more aggressive than would be implied by those two sentences.

Third, the discussion of foreclosure and raising rivals’ costs states that “a merger may increase the vertically integrated firm’s incentive *or ability* to raise its rivals’ costs by increasing the price or lowering the quality of the related product.”⁴² In general, the mere ability to raise prices without the incentive to do so is not taken either as evidence of market power or a legitimate basis for predicting price increases. For example, the hypothetical monopolist test that underlies market definition requires that a hypothetical monopolist over a product (or set of products) would find a small but significant non-transitory price increase to be profitable.⁴³ (Of course, a hypothetical monopolist would have the ability to raise prices even if doing so would cause demand to drop enough to make the price increase unprofitable.)

If the Agencies are only going to challenge vertical mergers when they have a coherent and robust set of models based on profit-maximizing behavior that predict that downstream prices will increase, then these guidelines do not signal a substantial change in policy. However, if they are going to challenge vertical mergers because one or more

⁴² *Id.* (emphasis added).

⁴³ 2010 MERGER GUIDELINES, *supra* note 30, at § 4.1.

firms rely on one of the merging firms for an input, do not have equally (or nearly equally) good alternative sources of supply, and if they are concerned that the merged firm will engage in self-preferencing, then the Agencies may seek to intervene in vertical mergers far more often than they have in the past.

III. MONOPOLY LEVERAGING

In the previous section, I argued that a firm with market power at one stage of production has the greatest incentive to enter an adjacent stage and that, as a result, a vertical merger between two firms with dominant positions at complementary stages can cause a substantial lessening of competition. But the realization of that competition through actual entry can also give rise to allegations of anticompetitive behavior if the integrating firm exhibits self-preferencing and, in so doing, creates an “unlevel playing field.” The problem has arisen frequently in the tech sector as highly successful firms have expanded into adjacent activities. In some of these cases, the integrating firm’s initial success was to create a “platform” that other firms used and came to rely on. The allegations of anticompetitive conduct often entail an implicit claim that platforms implicitly promise unbiased treatment to all users of the platform. A common complication is that the boundaries of stages and products change rapidly as technology advances. The economic models of leveraging posit two well-defined stages or products. The marketplace reality of the distinction between stages is often less clear-cut.

A. IBM and Manufacturers of Plug-Compatible Peripherals

Self-preferencing is hardly a new issue in antitrust. A set of cases brought against IBM by the manufacturers of plug-compatible peripherals in the early 1970’s illustrates a common pattern.⁴⁴ At the time, IBM was the largest provider of general-purpose

⁴⁴ *California Computer Prod., Inc. v. Int’l Bus. Machines Corp.*, 613 F.2d 727 (9th Cir. 1979); *In re IBM Peripheral EDP Devices Antitrust Litig.*, 481 F. Supp. 965 (N.D. Cal. 1979), *aff’d sub nom. Transamerica Computer Co. v. Int’l Bus. Machines Corp.*, 698 F.2d 1377 (9th Cir. 1983).

mainframe computers. Computer systems of that era consisted of a central processing unit (CPU) and a set of peripherals (tape drives, disk drives, card readers, and printers) that connected to the CPU. IBM sold all the components needed for a computer system. In addition, a set of companies reverse-engineered the interface between the peripherals and the CPU and offered “plug-compatible” peripherals (PCMs), typically at a lower price than IBM charged.

California Computer Products (CalComp) was one of the plug-compatible manufacturers that sued IBM for Sherman Act violations. Its products included disk drives and disk drive control units. CalComp alleged that IBM’s integration of the disk drive control unit into some models in its System 370 line of computers, thus obviating the need for a separate disk drive control unit, was anticompetitive because it denied CalComp the opportunity to supply disk drive control units for those computers.

In upholding the district court’s directed verdict in favor of IBM, the appeals court observed, “The evidence at trial was uncontroverted that integration was a cost-saving step, consistent with industry trends, which enabled IBM effectively to reduce prices for equivalent functions. Moreover, there was substantial evidence as well that in the case of Models 145, 158 and 168 the integration of control and memory functions also represented a performance improvement.”⁴⁵ It went on to rule, “IBM, assuming it was a monopolist, had the right to redesign its products to make them more attractive to buyers whether by reason of lower manufacturing cost and price or improved performance. It was under no duty to help CalComp or other peripheral equipment manufacturers survive or expand. IBM need not have provided its rivals with disk products to examine and copy, ... nor have constricted its product development so as to facilitate sales of rival products.”⁴⁶

⁴⁵ *California Computer*, 613 F.2d at 744.

⁴⁶ *Id.*

The key aspect of this case, which is generalizable to other cases involving self-preferencing, is that the IBM computer system created business opportunities for other firms; and these firms made investments that relied heavily on assumptions regarding IBM's future behavior. Despite being reliant on IBM, CalComp (and other PCMs) also invested to compete with IBM. If the conditions underlying the single monopoly profit theorem held, IBM could have benefited from a competitive peripheral sector, as better and cheaper peripherals would increase demand for IBM systems, which IBM could benefit from by charging higher prices for its CPUs. In fact, another one of CalComp's allegations was that IBM lowered the prices of its peripherals and raised the prices of its CPUs. While that pricing behavior is directionally consistent with the single monopoly profit theorem, it appears that IBM preferred to charge positive margins on all the components to its systems and that the competition from PCMs lowered its profits. Thus, there can be little question that IBM preferred to sell entire systems, rather than just some components of systems which also included equipment from PCMs.

Should the antitrust laws protect the likes of CalComp, or is the risk that IBM would act so as to reduce the profitability, or even make completely obsolete, the business model of companies like the PCMs simply a risk that PCMs should have recognized when they entered? As the court ruled in *Transamerica v. IBM*,

It is not difficult to imagine situations where a monopolist could utilize the design of its own product to maintain market control or to gain a competitive advantage. For instance, the PCMs were only able to offer IBM's customers an alternative because they had duplicated the interface.... Had IBM responded to the PCMs' inroads on its assumed monopoly by changing the ... interfaces with such frequency that PCMs would have been unable to attach and unable to economically adapt their peripherals to the ever-changing interface designs, and, if those interface changes had no purpose and effect other than the preclusion of PCM competition, this Court would not hesitate to find that such conduct was predatory....

It is more difficult to formulate a legal standard for design conduct than it is to imagine clearly illegal situations. Any such standard must properly balance a concern for the preservation of desirable incentives with the need to prevent monopolization by technology. Like pricing, equipment design can have pro-competitive as well as anti-competitive aspects. Truly new and innovative products are to be encouraged, and are an important part of the competitive process. For this reason, the acquisition or maintenance of monopoly power as a result of a

superior product does not violate the Sherman Act.⁴⁷

This statement clearly lays out the basic dilemma with respect to self-preferencing. The economics of why companies want to engage in self-preferencing are clear. Companies might, absent legal constraints, take actions for the sole purpose of excluding a competitor, but the challenge for public policy is to sanction anticompetitive cases without simultaneously chilling the incentive to continue to innovate.⁴⁸

B. Microsoft

Microsoft's first product was the operating system DOS. It attained a dominant position as the operating system for personal computers when IBM selected it as the operating system for its personal computers. In 1983, Apple introduced the Lisa line of computers, which were the first personal computers with a graphical user interface (GUI). Microsoft responded by introducing Windows. The first versions of Windows were desktop programs that sat on top of DOS. With its Windows 95 release, Microsoft integrated the desktop program into the operating system.

Windows (and, before it, DOS) is an open operating system. It exposes "Applications Programming Interfaces" (APIs) that writers of computer applications use as hooks to make their programs run. Windows is a platform that is a classic example of a two-sided product.⁴⁹ It needs to attract users, but users do buy Windows-based computers to use Windows applications, not just Windows itself. Microsoft needs

⁴⁷ *Transamerica*, 481 F. Supp. at 1003.

⁴⁸ The *Transamerica* court's ruling leaves open the issue of the burden of proof. Should IBM have to prove that its design changes were superior, or should there be a strong presumption that innovation in product design is pro-competitive and only in violation of competition statutes when there is evidence that the sole objective of the design change was to exclude competition?

⁴⁹ Another term for two-sided products is two-sided platforms or, more generally, multi-sided platforms. For more on multi-sided platforms, see John M. Yun, *Overview of Network Effects & Platforms in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

applications programmers to write programs for Windows, which is why Microsoft has Microsoft developer tools.

Precisely because Microsoft could expect to sell more copies of Windows if better Windows applications were available, it had an incentive to write applications itself. This need was particularly urgent when Lotus 1-2-3 and WordPerfect, which had been the most widely used spreadsheet and word processing programs for DOS, stumbled with their first versions for Windows. As businesses required a good set of productivity tools, developing a good spreadsheet and word processing program (as well as other components of what became the Office suite of programs) was critical to the success of Windows; and it did not take long for Microsoft's personal productivity tools to dominate the market.

Not only did Microsoft develop its own applications that it licensed separately from Windows, it continued to add features to its operating system that had previously been available as stand-alone products from a variety of sources. An example that might seem trivial is screen savers. At first, they were stand-alone applications. Microsoft's inclusion of a screen saver in Windows 3.1 did not completely destroy the market for screen saver programs—as some people were willing to pay for designs other than those Microsoft offered, but the market shrunk substantially. (Of course, subsequent features that simply shut off monitors after a period of inactivity would have eventually destroyed the market.)

If Microsoft's inclusion of a screen saver in Windows was not controversial, its decision to integrate Internet Explorer (IE) into Windows 98 was. When Microsoft introduced Internet Explorer as a stand-alone application for Windows 95, Netscape dominated the market for web browsers.

Netscape was founded in April 1994, shipped its web browser in December 1994, and went public in August 1995. In the quarter that proceeded its initial public offering (IPO), Netscape had a net loss of \$1.6 billion. Despite never having turned a profit, it went

public at a valuation of approximately \$1 billion and saw its value approximately double in the first day of trading (after nearly tripling in intraday trading). This IPO is credited as the start of the dot.com era in financial markets that culminated in the dot.com crash of 2000. Ultimately, Netscape lost the first round in the “browser war” to Microsoft.

When the DOJ and several states brought an antitrust suit against Microsoft in 1998, the centerpiece of their suit was that, at first, making Internet Explorer free and requiring original equipment manufacturers (OEMs) to install it and, subsequently, integrating Internet Explorer into Windows constituted an illegal tie. The district court ruled that it was and that, as a result, Microsoft – at the time the company with the highest stock market valuation in the world – should be broken up. The US Court of Appeals for the DC Circuit ruled that the district court had misapplied the modified per se rule against tying and remanded the case to the district court to judge the tie based on a rule of reason.⁵⁰ DOJ and Microsoft subsequently settled the case without a judgment as to whether the tie was reasonable.

Whether or not Microsoft’s actions with respect to IE violated the antitrust laws raises fundamental issues about the antitrust treatment of self-preferencing. One view is that Netscape’s innovation relied heavily on a complementary asset provided by Microsoft and that Microsoft’s actions effectively expropriated the value of Netscape’s innovation. According to this view, Microsoft’s tying, if legal, would act as a disincentive for small firms to come up with innovative – indeed, disruptive – products. It would also inhibit future competition in modularized products in which all companies compete on a “level playing field.”

But the dilemma that the *Transamerica* court so clearly articulated applies. It is easy to imagine how a company like Microsoft might abuse its position in the operating system market with respect to a successful application, but it is much harder to articulate an

⁵⁰ The DC Circuit did uphold the trial court on other claims.

economically sound standard under which its decision to integrate a new feature into its product is illegal. Economic models of markets with a platform and users of a platform assume a clear delineation between the two. Particularly in technologically advancing industries, however, such distinctions are rarely so clear. Before there was a web, web browsers were neither an application nor part of an operating system. It is not surprising that as the web developed, web browsers first appeared as stand-alone applications. But headlamps were first available only as stand-alone features for automobiles. Only after some time did they become a necessary component of a car. Particularly given the two-sided nature of Microsoft's business in which applications developers would want to embed calls to the web in their products, the reasonableness of Microsoft's behavior should not turn merely on whether a sufficiently large fraction of personal computer users might have preferred to use a different browser. Yet another factor to consider is that Netscape's business model entailed charging licensing fees for its browser. Had it prevailed in the browser wars, a double marginalization problem would have resulted.

Whether or not Microsoft's behavior with respect to IE was reasonable, Netscape and those who invested in it understood (or should have understood) the risk. As David Teece observed in a pathbreaking article in 1986,

It is quite common for innovators – those firms which are first to commercialize a new product or process in the market – to lament the fact that competitors/imitators have profited more from the innovation than the firm first to commercialize it! Since it is often held that being first to market is a source of strategic advantage, the clear existence and persistence of this phenomenon may appear perplexing if not troubling. The aim of this article is to explain why a fast second or even a slow third might outperform the innovator. The message is particularly pertinent to those in science and engineering driven companies that harbor the mistaken illusion that developing new products which meet customer needs will ensure fabulous success. It may possibly do so for the product, but not for the innovator.⁵¹

⁵¹ David J. Teece, *Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy*, 15 RES. POL'Y. 285, 285 (1986).

He went on to observe that control over key complementary assets often determines which company or companies profit from an innovation.

The prospectus for Netscape's IPO clearly articulated this risk. As it stated, "In particular, the Company's client software will likely be subject to price erosion due to free client software distributed by online service providers, Internet access providers and others. In addition, computer systems companies, such as Microsoft Corporation ('Microsoft') and International Business Machines ('IBM'), are now bundling or are planning to bundle client software with their operating systems at little or no additional cost to users, which will likely cause the price of Company's client products to decline."⁵²

As part of an extended discussion of the threat from Microsoft, the prospectus contains the observation, "Moreover, to complete development of Netscape Navigator for Windows 95, the Company must obtain certain technology from Microsoft. There can be no assurance that Microsoft will make such technology available to the Company on a timely basis, on commercially reasonable terms or at all."⁵³ It then goes on to explain that it expects similar behavior from IBM and Apple.

Netscape entered despite this risk; and, while one can presume that Netscape and investors in Netscape expected general protection under the law, it seems unlikely that Netscape's entry was based on the implicit assumption that antitrust law would protect

⁵² MORGAN STANLEY & CO., NETSCAPE PROSPECTUS 7 (1995), <https://archive.org/details/03Kahle001936/page/n5/mode/2up?q=Risk>.

⁵³ *Id.*

it against Microsoft's attempts to use its dominance in personal computer operating systems to its advantage in competing with its browser.

C. Google

No set of cases better exemplifies the challenges in formulating policy with respect to self-preferencing than those involving allegations of search "bias" against Google.

One of the first of these investigations internationally was the FTC's inquiry into whether Google's search results were "biased" towards its own "properties" and, if so, whether such self-preferencing was an unfair method of competition under Section 5 of the Federal Trade Commission Act. After a 19-month investigation, the FTC closed the investigation. In its strongly-worded closing statement, the FTC went well beyond saying that Google's behavior did not violate U.S. competition law. Rather, it asserted that the behavior at issue was the sort of competitive behavior that competition statutes encourage.⁵⁴ Competition authorities in other jurisdictions that have reached similar conclusions include Taiwan,⁵⁵ the UK,⁵⁶ Canada,⁵⁷ and Brazil.⁵⁸ A notable exception to this list is the European Commission (EC), which issued a record fine against Google, alleging an abuse of dominance with respect to its shopping search.⁵⁹

⁵⁴ U.S. Fed. Trade Comm'n, Statement of the Federal Trade Commission Regarding Google's Search Practices, In the Matter of Google Inc., No. 111-0163 (Jan. 3, 2013), https://www.ftc.gov/sites/default/files/documents/public_statements/statement-commission-regarding-googles-search-practices/130103brillgooglesearchstmt.pdf.

⁵⁵ See Debra Mao & Brian Womack, *Taiwan Fair Trade Agency Closes Investigations Into Google*, BLOOMBERG, (Aug. 6, 2015), <http://www.bloomberg.com/news/articles/2015-08-06/taiwan-fair-trade-agency-closes-investigations-into-google>.

⁵⁶ *Streetmap v. Google* [2016] EWHC (Ch) 253 [84].

⁵⁷ Press Release, Competition Bureau of Canada, Competition Bureau Statement Regarding its Investigation into Alleged Anti-Competitive Conduct by Google, (Apr. 19, 2016), <http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04066.html>.

⁵⁸ Vinicius Marques de Crvalho, *Brazil: CADE Dismisses Three Google Cases*, MONDAQ (Mar. 17, 2020), <https://www.mondaq.com/brazil/antitrust-eu-competition-/897908/cade-dismisses-three-google-cases>.

⁵⁹ Summary of Commission Decision of 27 June 2017 Relating to a Proceeding Under Article 102 of the

At issue in the FTC investigation was Google's use of its "universals." To understand what universals are, some background on internet search is necessary. The internet gives people access to a trove of information; but for that access to be useful, people must be able to locate the information they want. Yahoo! provided one approach to finding information on the internet. It had hired people to review web sites and catalog them into categories such as "sports" or "news" and then subcategories, such as "basketball" and "soccer" under "sports." As the information available on the web exploded, this approach proved impractical.

Algorithmic search provided another approach. It relied on technology for crawling and cataloging all web sites on the "open web." The results for a particular query term were then based on an algorithm that, for every query, assigned all the web sites the search engine had catalogued a score that reflected the match between the web site and the query. The results returned by early general search engines were a list of the sites to which the algorithm assigned the highest scores. Google's initial success was because its PageRank algorithm yielded results that searchers found more useful than those provided by the other search algorithms available at the time.⁶⁰

Google is a general search engine, meaning that it is designed to provide responses for any category of search. An alternative approach to search is thematic or "vertical" search, meaning search engines designed for specific categories of search. This approach to search preceded the start of Google in 1997. Travelocity and Expedia, which were two of the top three specialized Web travel sites before they merged in 2015, launched in 1996.⁶¹ MapQuest, an early Internet mapping service that AOL acquired in 2000, launched

Treaty on the Functioning of the European Union and Article 54 of the EEA Agreement (Case AT.39740 – Google Search (Shopping)), 2018 O.J. (C 9) 5.

⁶⁰ Sergey Brin & Lawrence Page, *The Anatomy of a Large-Scale Hypertextual Web Search Engine*, 30 COMPUTER NETWORKS & ISDN SYS. 107 (1998).

⁶¹ The third is Orbitz, which five of the six major airlines launched in 2001. Expedia recently merged with Orbitz as well.

in 1996. CitySearch, the first online source devoted to providing information about local merchants and locally available services, also launched in 1996.

General search engines have a natural advantage over thematic search engines in that they provide a sort of “one-stop shopping.” But they also have an inherent disadvantage. A fundamental problem for search engines is to ascertain user intent. Search terms are inherently ambiguous, and different people entering the same search term might be looking for much different information. While thematic search sites have this problem to some extent, a query in Expedia is almost surely a travel search, and knowing the class of search makes it far easier to generate relevant results.

The approach of Google and every other general search engine, including Bing, Yahoo!, and DuckDuckGo is, for every query, to run multiple thematic algorithms. That is, for every query, general search engines do not run just one algorithm. They run a shopping algorithm, a travel algorithm, a news algorithm, a local algorithm, and so on.

When Google first developed separate algorithms, it displayed them as different pages. Someone doing a shopping search on Google would have to click on the shopping page to see the results from Google’s shopping search, its news page to get results from Google’s news search, and so on. Of course, only users who understood what the separate pages in Google search results were would know to click on them. The different tabs reflecting different thematic search results gave Google what one commentator referred to as a “Swiss Army Knife” appearance.⁶²

Over time, Google and all other general search engines developed the technology to integrate their thematic search results onto their first “Search Engine Results Page” (or “SERP”) based on probabilistic assessments of the intent behind the search. A Google “universal” was a set of results from one of Google’s thematic searches placed together

⁶² *Danny Sullivan, Being Search Boxed to Death, CLICKZ (Mar. 28, 2001)*, <https://www.clickz.com/being-search-boxed-to-death/66309/>.

in a box along with a link to more results from the same thematic search. For example, if Google's algorithms determined a high probability that a search for "George Bush" (who was President when Google introduced universals) was likely a news-themed query, the SERP would contain a box with a set of links from Google's news results along with a link to a page with its full set of news results for a query for "George Bush." Similarly, if Google's algorithms ascertained that a query for "Nike shoes" would, with sufficient probability, reflect an intent to locate a merchant that offers Nike shoes for sale, the SERP would have included Google's shopping universal.

While Google achieved great initial success by generating superior results for some searches, its results for other types of searches were not as strong. Google's PageRank algorithm drew on the insight that the number of external links to a web page is a signal of page quality. As powerful as this insight was for some searches, it did not help much in searches for "Italian restaurants near me." Thematic local search sites like Yelp! would no doubt have preferred that Google continue to respond to such queries with links to thematic search sites. But someone entering a query for "Italian restaurants near me" into Google is likely looking for a nearby Italian restaurant rather than another search site that will provide a list of nearby Italian restaurants. In this regard, Google's universal search results were simply its search results for queries that it perceived with some probability to fit a particular theme, and allegations that Google search results were biased toward Google "properties" were, in effect, allegations that Google search results were biased toward Google search results. The implicit assertion that the thematic results were somehow distinct from Google's "general" search results reflects a fundamental confusion about the technology underlying general search.

Still, vertical search sites complained since Google was a significant source of traffic for them. As Yelp, a vertical search site specializing in local searches, claimed in its Prospectus, "Our success depends in part on our ability to attract users through unpaid

Internet search on search engines like Google, Yahoo! and Bing.”⁶³ It goes on to state:

Google in particular is the most significant source of traffic to our website accounting for more than half of the visits to our website from Internet searches during the nine months ended September 30, 2011. Our success depends on our ability to maintain a prominent presence in search results for queries regarding local businesses on Google. Google has removed links to our website from portions of its web search product, and has promoted its own competing products, including Google’s local products, in its search results. Given the large volume of traffic to our website and the importance of the placement and display of results of a user’s search, similar actions in the future could have a substantial negative effect on our business and results of operations.⁶⁴

Ultimately, the FTC rejected the complaints of vertical search sites and, in closing its investigation after 19 months, issued a closing statement in which it stated that universals were innovations in product design that Google intended to improve its search results and that any ill effects those changes had on other search sites reflected competition on the merits, not an unfair method of competition.

But the European Commission reached a different conclusion. In 2017, it found that Google had abused its position of dominance in “general search” to gain an unfair advantage in shopping search. This conclusion reflects a fundamental misunderstanding of search products and general search technology. Part of the problem stems from the multiple meanings of the word “general” as it applies to search. One meaning is a characterization of a type of search engine. Google (like Bing, Yahoo!, and DuckDuckGo) is a general search engine, meaning that it seeks to provide results for all classes of search. This meaning of “general” is similar to the word “department” when one says that Macy’s is a department store. Macy’s does not sell “departments.” It has multiple departments selling different types of goods. The word “department” distinguishes Macy’s (and stores like it) from stores that specialize in one type of good such as clothing stores or sporting goods stores. Similarly, the term “general search engine” distinguishes

⁶³ Yelp! Inc., Form S-1 Registration Statement 15 (Nov. 17, 2011), <https://www.sec.gov/Archives/edgar/data/1345016/000119312511315562/d245328ds1.htm>.

⁶⁴ *Id.*

Google, Bing, Yahoo!, and DuckDuckGo from thematic or vertical search engines that specialize in one type of search.

Every search has a specific intent. Someone who enters a query into Google for “running shoes” in hope of locating running shoes to purchase does a shopping search. Someone who enters a query into Bing for “restaurants near me” is doing local search. A query to DuckDuckGo for “1984 US merger guidelines” is not a shopping, travel, local, news, video, or image search. One might label this category as “miscellaneous” or “general information.” Another possibility, though, is to label this class of search as “general search.” If so, then general search is just one of many classes of search that general search engines seek to satisfy. General search engines are not the only places to engage in this type of search. Wikipedia, which is not a general search engine, is another site for finding general information. But it might be that Google’s share of general (or general information or miscellaneous) search is higher than its share of other categories of search.

Even if that is so, however, “general search” is not a component of shopping or local search, and so it makes no sense to suggest that bias in Google’s general search toward its own shopping results is an abuse of its alleged dominance in general search. Just as Macy’s needs to offer men’s suits that compete successfully with those available at men’s clothing stores if it wishes to have a successful men’s suit business, Google needs to compete with other providers of shopping search, including most notably Amazon, if people are going to use Google for shopping searches. When Google returns its shopping results at the top of (or anywhere on) the SERP in response to such a query, it is giving the user Google’s search results for that query. Those results are a single service. They are not a combination of multiple services or components, one in which it is dominant and one in which it is not.

By characterizing Google’s efforts to improve its results for shopping queries as monopoly leveraging, the EC’s Google shopping decision reveals the risks in bringing

unilateral conduct cases alleging monopoly leveraging. As the *Transamerica* court observed, it is easy to imagine situations in which a dominant company would have both the incentive and ability to take actions that have the sole purpose of excluding a competitor to the detriment of customers, but it is far harder to articulate practical standards that prohibit such behavior without chilling the incentive of successful firms to continue to innovate and improve their products.

CONCLUSION

One of the models that underpinned the Chicago critique of a range of competition policy doctrines related to vertical foreclosure was the model of a monopolist integrating into an adjacent, perfectly competitive stage. That model which, as noted above, is sometimes described as the “single monopoly profit theorem,” is sometimes taken to suggest that firms with market power at one stage of a production process or over one of a set of complementary goods cannot increase profits by integrating into the adjacent stage. While the result is of course correct given the underlying assumptions, those assumptions are quite strong and fail to apply in many real settings. In fact, firms often have an incentive to integrate (either directly or through merger) into adjacent stages that are not perfectly competitive; and, when they do, they often have an incentive to engage in self-preferencing.

For at least the past fifty years, antitrust economists have been arguing that the economic relationship among firms engaged in complementary activities is fundamentally different from those that sell substitute products and therefore compete with each other. Competitors have a mutual incentive to restrict output. In contrast, producers of complements have a mutual incentive to expand output. One lever to do so is to foreclose or raise the costs of rivals, but that is just one lever and it is not necessarily the dominant one. A key issue for policy makers is to judge whether the incentives for self-preferencing invalidate this distinction or, alternatively, whether it provides a

modest qualification that justifies intervention in a few rare exceptions to the general rule. And, whether or not the exceptions are rare, one needs to identify the conditions that distinguish when intervention is appropriate from those when it is not.

With respect to vertical mergers, I have argued that what may be a trend towards intervention based on short-run pricing incentives is not based on sound economics as it fails to recognize the complexity of the countervailing incentives. A more coherent and economically sound policy, I believe, is to focus vertical merger enforcement on instances of successive dominance. The theory of such an approach is potential competition. The FTC and DOJ have been far more reluctant than they once were to challenge mergers on potential competition grounds, and it may be that they will find resistance to such challenges in court. However, one of the barriers to successful potential competition cases is that it is often difficult to explain why a particular company presents a unique threat. In cases of successive dominance, such claims can be compelling because a firm with market power at one stage has the most to gain from increased competition at an adjacent stage.

With respect to monopolization (or other forms of unilateral conduct) cases, allegations of vertical foreclosure particularly in markets characterized by significant technological advances often implicate innovation in product design. Since changes in product design that have no purpose other than to exclude competitors are theoretically possible, some might argue that companies with significant market power should have to demonstrate consumer benefit from their innovations. Such a policy might seem consistent with consumer welfare maximization as the objective underlying competition policy enforcement. But such a position requires that competition agencies and courts are well-suited to judging the consumer welfare implications of innovations, and it makes no allowance for the possibility that attempts to innovate to improve products sometimes fail. Ford was not trying to fail with Edsel and the Coca-Cola Company was not trying to fail with New Coke. Even the most successful companies make mistakes in product

designs. Subjecting companies to antitrust liability for such cases would necessarily dull the incentive to innovate in product design and deny consumers the benefits from such innovations.

Toward the Peaceful Coexistence of Patent and Antitrust Law

*Richard A. Epstein**

INTRODUCTION

One of the most challenging issues in the modern law of economic regulation concerns the much-discussed overlap, if not conflict, between patent and antitrust law. The source of this problem lies in two short texts, each of which bristles with its own theoretical and interpretive difficulties. The first text is Article I, Section 8, Clause 8, of the United States Constitution, under which Congress has the power:

To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.

The second canonical text is the 1890 Sherman Act, specifically Sections 1 and 2, which reads:

Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several states, or with foreign nations, is declared to be illegal. . . .

and

Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons to monopolize any part of the trade or commerce among the several States, or with foreign nations shall be deemed guilty of a felony.

This chapter explores the interrelationship between these two basic provisions, both as a matter of general theory and through their development in case law over the past 130 years—which spans multiple eras of technological innovation.¹ It is easy to find

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¹ For my more exhaustive account of the historical origins of the patent clause, see Richard A. Epstein, *Patent Originalism*, 71 Case Western L. Rev. (forthcoming 2021).

cases where patent law appears to move in one direction and antitrust law in the opposite. But as a general matter, this chapter defends the thesis that, as the Federal Circuit has written, “[t]he patent and antitrust laws are complementary, the patent system serving to encourage invention and the bringing of new products to market by adjusting investment-based risk, and the antitrust laws serving to foster industrial competition.”² As a descriptive matter, today, this thesis is largely, but not uniformly, respected.³

More specifically, the central task of this chapter is to note how the concern with monopolization—explicit in the antitrust laws—plays a powerful, if somewhat concealed, role in the articulation of patent law as well. As is always the case, any concern with monopolization is a two-edged sword: It is always important to make sure that monopoly practices do not go undetected, but it is equally important that the doctrines of both patent and antitrust law do not impose penalties for supposed monopolistic practices that ultimately turn out to be procompetitive.

To discharge this task, this chapter begins with some fundamentals of intellectual property law before moving on to discuss the interaction of patent law with antitrust law. Section 1 lays the groundwork for the enterprise by articulating the standard rationales for patent protection and copyright protection. Section 2 then explores the relationship between patents and trade secrets as sources of protection. Section 3 examines the restrictions imposed on patent eligibility to deal with natural substances and abstract ideas and argues that these two concepts have been stretched too far—that, in their effort to prevent monopoly, they frustrate the emergence of useful technologies.

Section 4 explores the concept of an “exclusive right” to inventions and writings—whereby the simple assertion of an exclusive right is never sufficient to find a monopoly in the market to which the patent applies. Section 5 then looks at the way in which the

² *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1362 (Fed. Cir. 1999).

³ For one such inefficiency, *see Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008).

antitrust law deals with certain unilateral patentee practices. Section 6 does the same for coordinated efforts among different patentees—noting that there are vastly different consequences to bringing complementary patents under single control in order to overcome coordination problems than there are for bringing substitute patents into a single pool in order to create monopolization problems. Section 7 examines the saga of *Federal Trade Commission v. Qualcomm Incorporated*,⁴ in which liability was imposed outside the standard theories described in sections 5 and 6, before the Ninth Circuit Court of Appeals reversed the decision. A brief conclusion follows.

I. THE RATIONALE FOR PATENTS AND COPYRIGHTS

The text of the patent clause offers its own tight, theoretical justifications for the use of patents. The exclusive rights afforded to patents under Article I, Section 8, Clause 8, are stated as an explicit reward intended to promote science and the useful—read technological—arts.⁵ The logic behind that grant of exclusive right is that people would not invest sufficient time and energy to create “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof”⁶ if rivals were able to produce unlimited units of that same technology for commercial sale—without having to bear any of the heavy, front-end costs to design, make, and perfect the device or process. That ultimate demise would be known to the putative inventor, who would not invent if appropriation of that invention at lower cost is a direct threat. Thus, the main use for patent protection is between merchants. Nothing is more common than

⁴ 411 F.Supp.3d 658, 818 (N.D. Cal. 2019), *rev’d* 969 F.3d 974 (9th Cir. 2020).

⁵ Karl B. Lutz, *Patents and Science: A Clarification of the Patent Clause of the U.S. Constitution*, 32 J. PAT. OFF. SOC’Y 83, 87 (1950). “Useful arts” originally referred to the practical skills and methods of manufacture and craftsmanship taught as vocational subjects (*i.e.*, ways of *making*) as distinct from “liberal arts” which were academic subjects taught for intellectual development (*i.e.*, ways of *thinking*).

⁶ The phrase comes from 35 U.S.C. § 101, which reads in full: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”

for a purchaser of a patented device to share it with his friends, neighbors, or coworkers, without seeking to recover any additional charge. That kind of extra use is within the limits welcomed by the patentee because it increases both the scope of the market and the value of the good to any individual purchaser. But expansion of the market quickly turns negative if the purchaser seeks to go into competition with the patentee by selling versions of the same product at a lower price than what the inventor or his assignee charges. The resource effects are exactly the opposite as rival sales to strangers would no longer expand the market but contract it.

The same is true with copyrighted materials. The seller of a recording or of sheet music is delighted if his purchaser shares it with others, but rightly turns hostile when the copyrighted work is reproduced in any form that is then resold to third parties. The failure to understand this simple illustration can lead to dangerous results if innocent instances of customary sharing of patented or copyrighted works are said to stand for the far larger proposition that removing all intellectual property (IP) protections would cause no losses at all. The so-called “artificial scarcity” of intellectual property is justified—within the limits just stated—for commercial transactions. This scarcity can coexist happily with the noncommercial sharing of different forms of IP.⁷ The obvious differences between tangible property—which can be used by only a single person—and information, which can be shared, does not make intellectual property a misnomer or a dangerous form of monopolization. It only justifies—given the tradeoffs between common and private use of the different asset classes—a regime that limits the duration of intellectual property, without leading to its total demise.⁸

⁷ For the mistake, see BRINK LINDSEY & DANIEL TAKASH, NISKANEN CENTER, WHY ‘INTELLECTUAL PROPERTY’ IS A MISNOMER (2019) (noting that it is common for a woman who hears a song whistled by a neighbor in the field to sing it at night to put her baby to sleep. The song in question, however, was not copyrighted in the first place, and there was no commercial use. This makes Lindsey and Takash’s example inapposite.).

⁸ For a systematic treatment of these issues, see Richard A. Epstein, *What Is So Special About Intangible Property? The Case for Intelligent Carryovers*, in COMPETITION POLICY AND PATENT LAW UNDER UNCERTAINTY:

II. PATENTS AND TRADE SECRETS

It follows from the above analysis that *some* patent law is necessary for innovation markets to operate effectively, but the hard, theoretical question lies in determining just how these markets will operate when the exclusive right is either eliminated or, more often, unduly circumscribed. It is not the case that we should expect *no* inventive activity, even in the extreme case where all patent protection is removed. Rather, we should expect that the level of innovation would be lower than it would be if a sound form of patent protection were afforded, and that this reduction would translate into some loss in overall productivity. Even in the absence of patent protection, it is possible that an inventor would gain a first mover advantage that lets him establish a toehold (or footprint) before the imitators could enter the fray. More importantly, an inventor may be able to obtain limited protection for various inventions under trade secret law, which is defined today as “any information that can be used in the operation of a business or other enterprise and that is sufficiently valuable and secret to afford an actual or potential economic advantage over others.”⁹ Those trade secrets have customarily been held to include “a formula for a chemical compound, a process of manufacturing, treating or preserving materials, a pattern for a machine or other device, or a list of customers.”¹⁰ The protection for the trade secret is limited in that it only stops people from stealing the secret. Unlike patents, it does not stop other individuals from independently discovering the same, or similar secret—so two competitors may, unbeknownst to each other, possess the same form of intellectual property. For the most part, the critics of patent protection treat the prospect of such discovery as protection against the monopoly risk that they perceive—wrongly—to be created by all forms of patent or copyright protection.

REGULATING INNOVATION 42 (G. Manne & J. Wright, eds., 2011).

⁹ Restatement (Third) of Unfair Competition §39 (Am. Law Inst. 1995).

¹⁰ Restatement (First) of Torts § 757, cmt. *b* (Am. Law Inst. 1934).

It should be apparent that there is an enormous overlap between the types of intellectual property that potentially fall under both patent and trade secret law. Chemical compounds, for example, are compositions of matter that can be fashioned by machines, by techniques of manufacturing; they are therefore patentable. The know-how required to make such compounds may quite plausibly be valuable and secret; they are therefore within the domain of trade secret law. Fortunately, the Supreme Court has held that trade secret law covers both patentable and nonpatentable subject matters, on the grounds that “the patent policy of encouraging invention is not disturbed by the existence of another form of incentive to invention.”¹¹

The legal protection afforded to trade secrets does not require the holder of a trade secret to limit its use to the internal operations of the firm. It has been universally held that any holder of a trade secret is entitled to license that secret, on either an exclusive or nonexclusive basis, to other individual firms—who in turn must be able to share those secrets with their workforce and their subcontractors—so long as the holder of the trade secret makes reasonable efforts to keep it confidential.¹² All of these arrangements put the recipient under a general obligation to keep the trade secret confidential, which is necessarily lost with public disclosure at any point; universal usage can negate any economic advantage to the creator of that secret. This evident vulnerability means that the trade secret must be protected in all jurisdictions. Its disclosure in one location necessarily allows for its use worldwide—one reason why the forced disclosure of trade secrets in any one jurisdiction is treated as a taking of the secret.¹³ And, in general, it

¹¹ See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 484 (1974).

¹² *Rockwell Graphic Systems, Inc. v. DEV Industries, Inc.*, 925 F.2d 174 (7th Cir. 1991).

¹³ See *Ruckelshaus v. Monsanto*, 467 U.S. 986 (1984); *Philip Morris v. Reilly*, 312 F.3d 24 (1st Cir. 2002). *Monsanto* first recognizes that trade secrets are property, *id.* at 1000–03, only to reverse field and hold that the government can require the release of trade secret information to a competitor, whose own secret formula must be approved for use on health and safety grounds by the United States. *Id.* at 1005–06. That argument necessarily rejected the application of the unconstitutional conditions doctrine as it applied to this form of monopoly power. *Philip Morris* departed from the Supreme Court precedent on this point and

appears that the set of legal, contractual, and informal sanctions has met this condition of universal secrecy. Within this general framework, the licensing provisions between commercial parties are normally theirs to decide, so that gains from trade increase the value of the trade secret, just as licenses increase the value of patents.

Any truncation of the class of patentable inventions surely enlarges the role of trade secrets. But it also remains the case that trade secrets are often—especially for nascent firms—a poor substitute for patent protection. These observations quickly lead to the question of *which* form of protection should be preferred when both are available; and that question in turn usually leads to a split verdict. For processes, firms typically prefer trade secret protection because they know that if the process is made public, it will be exceedingly difficult for them to determine which products manufactured or sold by rival firms will have resorted to the use of a particular process— routinely, multiple processes are available to do a particular job. On the other hand, trade secrets cannot protect any product for sale where imitation is far easier. In these cases, patents are far preferable because they allow for the dissemination of the product without loss of the right to exclusivity. This exclusivity comes with the condition, as has always been required under Section 112,¹⁴ that the patentee, as part of his or her application, supplies information as to the best mode of production that rival inventors can use to design their own devices or compositions of matter that do not infringe existing patents. Section 112

by a divided vote held that Massachusetts could not force the limited publication of trade secret information as a condition for letting a cigarette company market its product within the state. There are other ways to make sure that tobacco additives do not contain harmful substances, without requiring release of valuable trade secret information. For example, states could mandate the publication of a list, in order of concentration, of key additives—without revealing the full trade secret to Philip Morris competitors. For discussion, see Richard A. Epstein, *The Constitutional Protection of Trade Secrets under the Takings Clause*, 71 U. CHI. L. REV. 57 (2004).

¹⁴ 35 U.S.C. § 112 (“The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.”).

requires this disclosure, notwithstanding that the similar functionality of these other products allows them to provide competition for the products sold under alternative patents, or, indeed, with once-patented products that have already entered the public domain.

III. PATENT ELIGIBILITY AND MONOPOLY POWER

How, then, is the scope of patent protection determined? In practice, there is a prominent public choice dimension to the debate over what form intellectual property protections should take. There are strong reasons to believe, as Jonathan Barnett has argued, that large, established, and integrated firms are in a better position to protect their intellectual property portfolios, through internal use on the one side, and trade secret licensing (including cross-licensing agreements) on the other.¹⁵ In contrast, small start-up firms with a single product must be able to sell in the open market to a large number of unrelated parties, with whom they do not have prior, dense relationships. Their common business plan requires strong patent rights. Hence, the striking conclusion—it is *weak* patent rights that act as a barrier to entry. Barnett's hypothesis is borne out by the legislative position that major high-tech firms have taken in connection with debates over patent strength, most recently in connection with several recent decisions on patent eligibility—which requires courts, under Section 101 of the Patent Act, to draw a line between patentable inventions on the one side, and laws of nature or abstract propositions on the other. These large, established firms consistently favor weakening patent rights in at least two dimensions: Narrowing of the class of patentable

¹⁵ See Jonathan M. Barnett, *INNOVATORS, FIRMS, AND MARKETS: THE ORGANIZATIONAL LOGIC OF INTELLECTUAL PROPERTY* (forthcoming, Oxford University Press). "Certain firms—especially older, larger, and more integrated firms—have the ability to earn returns on innovation without recourse to IP rights, while other types of firms—especially, younger, smaller, and less integrated firms—do not. Where the largest, most established, and most highly integrated firms can mimic and even outperform the IP rights delivered by the state, reducing IP rights can raise entry costs and shelter incumbents against the competitive threat posed by more efficient innovators."

inventions, and making it more difficult to obtain injunctive relief for patent infringement.

Tellingly, both of these points are cardinal elements of the position of the powerful High Tech Inventors Alliance, whose membership includes Adobe, Amazon, Cisco, Dell, Google, Intel, Oracle, and Salesforce. Its mission statement reads: “HTIA supports a balanced patent system that fixes the problems of low quality patents, baseless assertions and patent troll litigation while promoting investment in new technologies and American jobs.”¹⁶ In order to advance that position, the Alliance commissioned a paper from Paul C. Clement to advance the view that patent rights are, as his title suggests, the antithesis of property rights, such that their protection is more a matter of legislative grace than constitutional entitlement.¹⁷

An emphasis on the tension between property rights and patents has profound implications for the structure of patent law and the scope of its exclusive right. The language of Section 101 talks about “any new and useful process, machine, manufacture, or composition of matter.” Although this collection of terms may not appear to have any antitrust implications, the connection between these definitional provisions and the traditional antitrust concern with monopoly is key. A narrow reading of these four terms necessarily reduces the scope of any exclusive right, thus increasing the area of the public domain. Two key items are exempted from the scope of patent protection: Natural substances and abstract propositions. In the conventional sense, both of these limitations make good sense. Could one imagine how the progress of mathematics would take place if, for example, James Napier could obtain a patent on the use of logarithms, or charge subsequent users a royalty for the use of the decimal point in mathematics? But then he would be required to pay royalties to any mathematician whose theorems he relied on in

¹⁶ *Id.*

¹⁷ PAUL C. CLEMENT, PATENT RIGHTS VS. PROPERTY, THE FRAMER’S UNDERSTANDING OF PATENTS (2019). For my response, see Richard A. Epstein, *Patent Originalism*, CASE WESTERN L. REV. (forthcoming 2020).

his own work. The blockade on these matters would rise to the level of insanity if each advance had to pay royalties to others. It is a clear that everyone is better off from the free exchange of information rather than from a system of exclusive rights in abstract propositions. Hence it has always been the case that support of mathematics has taken the form of salaries and prizes to the people who make these key advances, precisely because these rewards give incentives for productivity, while keeping all the building blocks of knowledge firmly within the public domain. Similarly, it would make no sense to give Madam Curie the exclusive right to the use of radium, solely because she was the first person to isolate it in the laboratory. A Nobel Prize works fine for these discoveries.

At this generalized level, there is no opposition to these two limitations of patentability; but, in recent years, both of these conceptions have been expanded greatly to cover forms of knowledge where holdout problems are the exception and not the rule. Indeed, the broader the definition of these two areas, the narrower the scope for patents and the smaller the risk of monopolization—a benefit that comes at the cost of potentially inhibiting innovation. So, drawing the proper line becomes critical. In two recent cases, *Mayo v. Prometheus*¹⁸ and *Alice Corp. v. CLS Bank International*,¹⁹ the Supreme Court has narrowed the scope of patentable subject matter, both for abstract propositions and for natural substances: *Mayo* gave a narrow construction to medical devices, and *Alice* did the same with respect to algorithms for financial models.

This development has not gone unnoticed. In his statement before the Senate Judiciary Committee, the Executive Director of HTIA, David Jones, insisted that the high levels of current investment justified the continuation of the *Alice/Mayo* regime.²⁰ In

¹⁸ 566 U.S. 66 (2012) (holding a method for calculating proper dosage of thiopurine to treat autoimmune diseases should be treated as an unpatentable law of nature).

¹⁹ 573 U.S. 208 (2014) (holding that techniques to minimize settlement risk—i.e. nonpayment—by using third parties are unpatentable abstract ideas).

²⁰ *The State of Patent Eligibility in America: Part II hearing before the Subcomm. On Intellectual Property of the S. Comm. on the Judiciary* 116th Cong. (2019) (statement of David W., Jones) (“although medical diagnostics is

contrast, the rival statement by Professor Adam Mossoff, with no backing whatsoever from powerful institutions, examined and criticized the line of cases that applied the *Alice/Mayo* definitions to both abstract ideas and natural laws, denying coverage to small inventors with major innovations.²¹ He writes: “As a result of the *Alice-Mayo* framework, the U.S. is now denying patent applications or invalidating issued patents in cutting-edge discoveries in medical care, such as treatments for breast cancer, diabetes, and strokes, among others.”²²

In examining this issue, it is important to look at this granular level to see whether the decisions are sound—which I believe that they are not—and then assess their economic impact. It takes hard work and constant testing to figure out these interrelationships, and the earlier decisions of Judge Giles Rich in such cases as *In re Alappat*, dealing with medical devices,²³ and *State Street Bank & Trust Co. v. Signature Financial Group*, dealing with business method patents, represent a sound approach that should still be followed today.²⁴ In both these situations, mathematical transformations took input data from outside the system and turned it into commands that could be executed by the system, yielding specific instructions on how to behave. The key element

often cited as the area of life sciences most impacted, according to Crunchbase, almost \$400 million was invested in bio-diagnostics during the month of May, 2019, alone.”).

²¹ *The State of Patent Eligibility in America: Part II hearing before the Subcomm. On Intellectual Property of the S. Comm. on the Judiciary* 116th Cong. (2019) (statement of Adam Mossoff).

²² *Id.* at 2, where he instances these cases: *Cleveland Clinic Found. v. True Health Diagnostics LLC*, 760 Fed. Appx. 1013 (Fed. Cir. 2019) (nonprecedential) (invalidating a patent on a biotech-based medical test for detecting heart disease as covering a patent-ineligible law of nature); *Athena Diagnostics, Inc. v. Mayo Collaborative Servs., LLC*, 915 F.3d 743 (Fed. Cir. 2019) (invalidating a patent on a biotech-based medical test for identifying neurological disorders as covering a patent-ineligible law of nature); *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371 (Fed. Cir. 2015) (invalidating a patent on non-invasive prenatal test using fetal DNA found in the blood of the mother as covering a patent-ineligible law of nature and natural phenomenon).

²³ 33 F.3d 1526 (Fed. Cir. 1994) (upholding a patent for “creating a smooth waveform display in a digital oscilloscope”).

²⁴ 149 F.3d 1368 (Fed. Cir. 1998) (use of a data processing system for implementing an investment structure).

here, which both courts correctly recognized, is that the middle, computational element of an invention should never be looked at in isolation. To do so puts virtually all claims at high risk of invalidation. As the *State Street Bank & Trust Co* court put it, “the mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers, and storing numbers, in and of itself, [does] not render it nonstatutory subject matter.”²⁵

These rules require that all patentable subject matter involves some substance or device. It is not possible, for example, to obtain a patent for the exclusive use of some natural resource because of the massive preclusive effect on other inventors who seek to develop alternative devices utilizing that same natural resource. The most vivid statement of that principle is found in *O’Reilly v. Morse*,²⁶ where Chief Justice Taney writes in no uncertain terms:

“Eighth. I do not propose to limit myself to the specific machinery or parts of machinery described in the foregoing specification and claims; the essence of my invention being the use of the motive power of the electric or galvanic current, which I call electro-magnetism, however developed for marking or printing intelligible characters, signs, or letters, at any distances, being a new application of that power of which I claim to be the first inventor or discoverer.”

It is impossible to misunderstand the extent of this claim. He claims the exclusive right to every improvement where the motive power is the electric or galvanic current, and the result is the marking or printing intelligible characters, signs, or letters at a distance.

If this claim can be maintained, it matters not by what process or machinery the result is accomplished. For aught that we now know some future inventor, in the onward march of science, may discover a mode of writing or printing at a distance by means of the electric or galvanic current, without using any part of the process or combination set forth in the plaintiff’s specification. His invention may be less complicated—less liable to get out of order—less expensive in construction, and in its operation. But yet if it is covered by this patent the inventor could not use it, nor the public have the benefit of it without the permission of this patentee.²⁷

The ambiguity in this passage is whether Taney’s characterization that this patent

²⁵ *Id.* at 1374.

²⁶ 56 U.S. 62 (1853).

²⁷ *Id.* at 112–13.

was an attack on abstract principles fairly lines up with the would-be patentee's claim. Historically, there is some doubt about this issue because the nineteenth century style of claiming tended to treat each count as part of the full application, and not in isolation from the other counts.²⁸ Looked at as a whole, listing eight elements of the claim do nothing out of the ordinary in comparison to a modern legal claim. Thus, this claim could be read as an early anticipation of the doctrine of equivalents—a key doctrine of patent law intended to make sure that the exclusive right conferred by a grant is not too narrow, lest it be evaded by the inconsequential substitution of one kind of motor or battery for another that allows a so-called “new” device to freeload off the original inventor. It is too costly to insist that a patent application list every possible permutation of a given design in advance; the general rule allows for close substitutes to receive the same protection as the covered invention, unless of course a particular extension is disclaimed in the patent application.²⁹ One could read “claim eight” as stating only that proposition. But if “claim eight” is read more broadly, as asserting an exclusive right to any use of electromagnetism to create markings, then Taney has a point, applicable both in his own time and today. For in that case, the claimed invention will block out serious competitors from using the natural world, impeding an important feature of scientific inquiry. Such preclusion matters because the state of technology is often such that multiple parties are homing in on the same invention at the same time. Indeed, Taney did make the explicit reference that, “in this state of things it ought not to be a matter of surprise that four

²⁸ For an exhaustive review of these earlier practices, see Adam Mossoff, *O'Reilly v. Morse and Claiming a "Principle" in Antebellum Era Patent Law*, XXX Case Western Reserve Law Rev. (forthcoming 2021): “[t]he early nineteenth-century legal practice in patent law in which patent claims secured the essential “principle” of an invention, as distinguished from the peripheral claims today that defined the boundaries of the property right in an invention.”

²⁹ For an early recognition of the doctrine of equivalents, see *Graver Tank & Mfg. Co. v Linde Air Prods. Inc.*, 339 U.S. 605, 607 (1948) (Courts “have also recognized that to permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing.”).

different magnetic telegraphs, purporting to have overcome the difficulty [of preventing loss of signal power over distance], should be invented and made public so nearly at the same time that each has claimed a priority.”³⁰

Two general conclusions, both consistent with the basic economic preference for competition over monopoly, are at work here. First, preventing close substitution increases the value of acquiring and protecting property rights, which encourages the initial innovation. Second, preventing the patenting of natural objects means that patent law does not become a barrier to entry by allowing only one person to use what could be described as part of the common heritage of all humankind. One notable illustration of this principle is found in *Association for Molecular Pathology v. Myriad Genetics*,³¹ which concerned the patentability of the BRCA1 and BRCA2 genes. These genes are positively correlated with the occurrence of breast cancer in women. Their structure was first identified by Myriad, which then sought to patent the genes itself.

At issue are two distinct questions that should receive very different treatment. The first asks whether Myriad could have any exclusive rights over the BRCA genes *in situ*, to which the answer should be in the negative. These are natural occurring substances, which by definition have not been isolated from their natural environment. It would be an incredible limitation on the advancement of knowledge—the creation of, as it were, an undeserved monopoly—if the party that isolated the gene could prevent anyone else from treating its associated diseases in a patient without the consent of the patentee.

The second question is whether Myriad should be able to patent the isolated gene. The restriction-on-treatment issue could not arise with the isolated gene, given that the gene is, again by definition, never isolated inside any human being. But at the same time,

³⁰ *O'Reilly*, 56 U.S. at 107–108.

³¹ 569 U.S. 576 (2013).

it is much more defensible to allow for the patenting of the gene outside of the human body. In dealing with this issue, Justice Thomas insisted that it was proper to obtain a process patent that would prevent other individuals' use of Myriad's method for the reproduction of the BRCA genes; namely, the creation of a complementary form of DNA (cDNA), which offers a template for DNA found in nature to be produced in a cheap and reliable fashion. cDNA is patent-eligible precisely because it is created by using materials that are not found in nature. But it is a far more difficult question to decide whether the process patent should be sufficient for the BRCA genes, given that Myriad's work has made using other methods to produce the gene far easier.

That exact issue was raised in the earlier decision of *Parke-Davis & Co. v. H.K. Mulford Co.*,³² which concerned the patentability of adrenaline, which had been isolated and purified by Jōichi Takamine, a Japanese chemist. Learned Hand baldly stated: "Takamine was the first to make it available for any use by removing it from the other gland-tissue in which it was found, and, while it is of course possible logically to call this a purification of the principle, it became for every practical purpose a new thing commercially and therapeutically. That was a good ground for a patent." Without any analysis, Learned Hand conferred on that "new thing" a substance patent, not just a patent for the process of its isolation. He offered no systematic analysis as to why he applies the stronger form substantive protection (which precludes the synthesis of adrenaline by any other technique during the patent period), and that debate rages on today.

At the back of the argument is an empirical disagreement over the optimal

³² 189 F. 95 (C.C.S.D.N.Y. 1911), *aff'd in part, rev'd in part*, 196 F. 496 (2d Cir. 1912). For a discussion of the connection between *Parke-Davis & Myriad* written before the Supreme Court decision, see Jon M. Harkness, *Dicta on Adrenalin(e): Myriad Problems with Learned Hand's Product-of-Nature*, 93, J. PATENT & TRADEMARK OFFICE SOC'Y 363 (2011).

strength of the exclusive protection that should be given to the inventor who takes the first critical step. The more alternative pathways for synthesis, the less valuable the process protection—which could be insufficient to induce the optimal amount of innovative effort. But the broader substance protection could give enormous breadth to a patent when multiple paths to discovery exist, thereby conferring monopoly power on the holder of that patent. The empirical debate can vary from substance to substance, and it is quite possible that a greater level of protection was preferable in 1911, and a lesser level is preferable today. But by the same token, it should be recalled that, according to the Jonathan Barnett thesis,³³ weaker levels of patent protection will have a greater impact on small firms seeking to break into the market than on larger firms that are more likely to have alternative means to protect their intellectual property. Hence it is not surprising that no consensus has emerged on this troublesome issue. But, even if patent protection is extended to the isolated DNA, nothing should prevent finding BRCA *in situ* as a nonpatentable natural substance, not created by either human wit or invention.

If *Myriad* raises hard questions, the same is not true of the *Alice/Mayo* line of cases that goes far beyond both *Morse v. O'Reilly* and *Parke-Davis*. There is no plausible resemblance between the discovery of the electromagnetic spectrum or the identification of adrenaline on the one side, and the ad hoc determinations, obtained typically by trial and error, to determine a method for calculating proper dosage of thiopurine, which is about as specific as possible—as if there could be any general principle to determine the proper dosage of any particular chemical. These recent decisions are an unhappy throwback to the 1948 case of *Funk Brothers Seed Co. v. Kalo Inoculant Co.*,³⁴ which refused to grant a patent to an inventor, who first discovered a way to mix distinctive inoculants for six different leguminous plants into a common package. The new process saved both

³³ See *supra* at note 15.

³⁴ 333 U.S. 27 (1948).

time and money and depended on detailed, specific research to achieve the correct mix. Once again, it is a mistake to think that this combination should be treated, as Justice Douglas believes, as a law of nature, given that the mix cannot be deduced from first principles: it was discovered in a unique, context-specific way. Indeed, the Seventh Circuit got it correct when it wrote that “the evidence is clear that what he discovered was that certain existing bacteria do not possess the mutually inhibitive characteristics which had previously prevented a successful commercial composite inoculant and that those uninhibitive species may be successfully combined. It was this contribution of noninhibitive strains which successfully combine that brought about a new patentable composition.”³⁵

The economic advantages of a six-in-one package are commendable because it both reduces error and increases the rate of application. It is hard to think of how any system of salaries and prizes that work for natural substances could provide the needed incentive here, when the risks of freeriding are so manifest. Speaking more generally, the economic consequences here are serious, because if the property rights are too narrow, the first entrant will not come into the field; just as if they are too broad, no new entrant could ever enter the field.

IV. EXCLUSIVE RIGHT

At this point, it becomes necessary to tie this general discussion back into the discussion of what is meant by the phrase “exclusive right to their respective inventions,” which is “secured” by the constitutional protection of patents. One common argument is that this phrase confirms the obvious fact that all patents are monopolies, which should in turn be uniformly and necessarily subject to regulation under the antitrust laws, like other forms of monopoly. That extension has been uniformly rejected in nineteenth

³⁵ *Kalo Inoculant Co. v. Funk Bros. Seed Co.*, 161 F.2d 981, 986 (7th Cir. 1947).

century cases, even if it has gained some more traction in recent years. In his 1833 Circuit Court opinion in *Ames v. Howard*,³⁶ Joseph Story neatly linked the appropriate rule of the construction of patents to the view that patents were granted in the public interest:

Patents for inventions are not to be treated as mere monopolies odious in the eyes of the law, and therefore not to be favored; nor are they to be construed with the utmost rigor, as strictissimi juris. The constitution of the United States, in giving authority to congress to grant such patents for a limited period, declares the object to be to promote the progress of science and useful arts, an object as truly national, and meritorious, and well founded in public policy, as any which can possibly be within the scope of national protection. Hence it has always been the course of the American courts, (and it has latterly become that of the English courts also,) to construe these patents fairly and liberally, and not to subject them to any over-nice and critical refinements.³⁷

That sentiment was followed in other cases. Thus, in 1855, in *Allen v. Hunter*,³⁸ dealing with the setting of mineral teeth on metallic plates, Circuit Justice McLean wrote:

Patentees are not monopolists. . . . No exclusive right can be granted for anything which the patentee has not invented or discovered. . . . [T]he law repudiates a monopoly. The right of the patentee entirely rests on his invention or discovery of that which is useful. And which was not known before. And the law gives him the exclusive use of the thing invented or discovered, for a few years, as a compensation for “his ingenuity, labor, and expense in producing it.”

Similarly, in *Birdsall v. McDonald*,³⁹ involving a combined thrashing and hulling machine, Justice Swayne wrote:

Inventors are a meritorious class of men. They are not monopolists in the odious sense of that term. They take nothing from the public. They contribute largely to its wealth and comfort. Patent laws are founded on the policy of giving to them remuneration for the fruits, enjoyed by others, of their labor and their genius. Their patents are their title deeds, and they should be construed in a fair and liberal spirit, to accomplish the purpose of the laws under which they are issued.

Note that there is no hesitation in treating the patent as a form of property, protected by “title deeds” —and not as an “odious” monopoly that restricts output, raises prices, and generates social losses. After all, these patents are not just gratuitously

³⁶ 1 F. Cas. 755 (1833).

³⁷ Id. at 756

³⁸ 1 F. Cas. 476, 477 (C.C.D. Ohio 1855) (No. 225).

³⁹ 3 F. Cas. 441, 444 (C.C.D. Ohio 1874) (No. 1,434) (Swayne, C.J.).

awarded as a favor or a political payback from the Crown or the government. The exclusive right to a patentable invention is on a model that is an antithesis to the standard economic monopoly. A patent is no more of a monopoly than giving a title deed that gives an owner of a plot of land exclusive rights to its possession, use and disposition. It is well understood, in both the Roman and the Anglo-American tradition, that the notion of property in land carries with it, as Thomas Merrill has noted, the idea of exclusivity,⁴⁰ which the Supreme Court has often said—most notably in *Kaiser Aetna v. United States*—counts as “one of the most essential sticks in the bundle of rights that is commonly characterized as property.”⁴¹ Indeed, Merrill goes one step further and insists that, without the right to exclude, there is no such thing as property at all.

It is important to sort out the cross currents in these various claims. First, it is incorrect to claim generally that, without exclusivity, there is no property right. Indeed, the sentence, as quoted, does not distinguish between private and common property. The right to exclude is part of the former but not of the latter. But the latter is still governed by property rights, albeit of a different sort. A property right in the commons—both for real and intellectual property—means that *all* persons have the right *not to be excluded* from the access to a particular resource, such that it should be a taking (perhaps even of property) if someone has been excluded from access to the commons, as by building a wall that separates a riparian from access to water in a river to which he or she would otherwise have access.⁴² The argument in favor of treating this denial of access as a taking is that the same action of blocking access, if done by a private party, would subject that party to damages for past losses and an injunction against future walls.⁴³ The wall could

⁴⁰ Thomas W. Merrill, *Property and the Right to Exclude*, 77 NEB. L. REV. 730 (1998).

⁴¹ *Kaiser Aetna v. United States*, 444 U.S. 164, 176 (1979).

⁴² See, e.g., *Rands v. United States*, 389 U.S. 121 (1967) (sadly held the opposite).

⁴³ For discussion, see Richard A. Epstein, *Playing by Different Rules? Property Rights in Land and Water*, in PROPERTY IN LAND AND OTHER RESOURCES 317 (Daniel H. Cole & Elinor Ostrom, eds., 2012).

well be for public use, but that fact alone should not dispense with the need to supply just compensation to the aggrieved riparian. That result has been avoided in the decided cases, solely on the false claim that in dealing with water rights, the rules that apply to disputes between private parties are said not to carry over to actions brought by the government, which is claimed, without explanation, to have a “paramount” or “dominant” easement over all public waters, which functions like an absolute claim.⁴⁴ That sovereign claim is in stark contrast to the usual analysis of riparian rights, whose typical refrain talks about correlative duties, for the obvious reason that a river, stream or lake—which can be used for transportation, recreation, fishing, watering homes, cattle, and crops—is worth more as a “going concern” than as still water poured into a large barrel.

This issue, moreover, has an exact parallel in the intellectual property space, where there is a similar commons consisting of abstract ideas and natural substances, which are from the outset open to all. In addition, since intellectual property grants are made only for a limited period of time, a patented invention (but not subsequent improvements thereon)—the original technology—passes into the public domain at the expiration of the initial term of years. Setting the length of that term is critical to the overall success of the system. Make it too short, and the inventor will not have sufficient time to recoup the front-end costs of development, before the technology enters the public domain. Make it too long, and the exclusion could lead to the perpetuation of undue rents to the patentee, by denying use to those who value the technology at more than zero, but less than the

⁴⁴ See *United States v. Willow River*, 324 U.S. 499, 510 (1945) (“Rights, property or otherwise, which are absolute against all the world are certainly rare, and water rights are not among them. Whatever rights may be as between equals such as riparian owners, they are not the measure of riparian rights on a navigable stream relative to the function of the Government in improving navigation. Where these interests conflict they are not to be reconciled as between equals, but the private interest must give way to a superior right, or perhaps it would be more accurate to say that as against the Government such private interest is not a right at all.”).

prices charged.⁴⁵

Of equal importance is the scope of patentability, given that laws of nature and abstract propositions are excluded from their scope. Here, it is possible to confuse the definition of an exclusive right with that of a monopoly. But that comparison is flawed. Professor Merrill, for example, stresses the element of exclusivity as part of the definition of a property right, but not once in his article does he equate exclusivity to monopoly power. In this connection, the same rules apply to real property and to patents, notwithstanding that the former are typically of indefinite duration and the latter are only for limited terms. As a matter of first principle, it is not possible to create a competitive market unless owners of land and other forms of property have some exclusive right. The right, of course, must be more than the right to exclude, for such a right would be of little, if any, value, if the property owner labors under a disability whereby he cannot enter his own property, let alone use, develop, sell, lease, mortgage, or otherwise dispose of the property in question.

The point becomes clear when one looks at the additional value conferred as each of these rights are added to a system of property. The right to exclude, even standing alone, is not without value. It allows, for example, the owner of some adjacent property to preserve views over the vacant lot, and it also allows that owner the ability to keep out competition from rivals to his own business. But the added value to ownership from being able to enter the land is surely great, and, as a rough empirical generalization, the losses to others—especially if they get the same set of augmented rights with respect to their own properties—will be trivial in comparison. As with all great social generalizations, the source here is common social understanding, which long antedates

⁴⁵ This is yet another version of the so-called marginal cost controversy. See Ronald H. Coase, *The Marginal Cost Controversy*, 13 *ECONOMICA* 169 (1946); William Vickery, *Some Objections to Marginal-Cost Pricing*, 56 *J.P. ECON.* 218 (1948); John Duffy, *The Marginal Cost Controversy in Intellectual Property*, 71 *U. CHI. L. REV.* 37 (2004).

any supposedly empirical studies on the question. Similarly, rights to use and develop land can be added to the bundle, because they confer great value on the user with, in most instances, relatively small losses by others. Given the reciprocal nature of these rights across all users, the gains are large. One way to test the possibility of reciprocal gains is to note that when a single-owner creates a condominium or gated community, rights of use and development are always included in the mix.⁴⁶ Yet, at the same time, the risk of negative externalities grows from incompatible uses and developments; thus, the set of restrictions on use and development are almost always larger than those on occupation. These risks are less evident in cases of intellectual property than they are with physical property, because the class of nuisance-like activities is far smaller—which explains why police power limitations on patents and copyrights are much harder to justify.

Finally, extensive rights of use and development, standing alone, fall short in yet another way; namely, they do not permit gains from trade in either the outright transfer, or the pooling of both intellectual and physical assets. Here, the gains from trade call for allowing these efforts to take place, but again, there is with intellectual property, as with other forms of assets, an implicit limitation that systematic losses to third parties will, in some cases, eclipse the gains to the parties from cooperative assets. Ordinary competition always results in losers who cannot match the price, but that form of competitive harm should never be restrained, because otherwise there would be enormous harm imposed on consumers who are deprived of buying goods at a lower price. The traditional legal systems understood this—along with the harm from blocked views—and treated them as *damnum absque iniuria*, or harm without legal injury, which could easily be dismissed for doubletalk, when it is not. The net positive social gains from a system of competition

⁴⁶ For a discussion on how this works, see Richard A. Epstein, *Positive and Negative Externalities in Real Estate Development*, 102 MINN. L. REV. 1493 (2018).

can only be achieved if disappointed competitors try to use their resources somewhere else, which is why the nineteenth century cases called these instances “noncognizable” or “nonactionable harms.” But the situation is very different when the agreement calls for the destruction of physical (or intellectual) property of third parties, for now the choices for consumers are reduced, not enhanced. The case of monopoly is less compelling but more common, for with contracts in restraint of trade, the gains to the contracting parties, systematically, are more than offset by the social losses from restricting output and raising prices, which explains the social objection to cartelization. That restraint applies with equal force to intellectual property and other forms of assets, once again proving there is a continuity between intellectual property and other forms of assets. The right to dispose receives a strong general endorsement, subject to a limited antitrust exception.

V. UNILATERAL CONDUCT

At this point, it is possible to make a smooth transition from intellectual property rules to explicit antitrust concerns. Definitionally, “unilateral” conduct does not mean that a party enters into no agreements at all. Rather, it means that all the agreements are made with parties on the opposite side of the market—sellers to buyers, landlords to tenants, lenders to borrowers—and none with potential competitors. In these circumstances, the general rule is that the owner of a patent, like the owner of a plot of land, is free to use or dispose of his property however he sees fit, without any independent constraint under the antitrust laws. There are three relevant variations on this theme: pricing, common carriers, and tie-in arrangements.

A. Pricing

An early statement of the pricing rule is found in *E. Bement & Sons v. National*

Harrow Co.,⁴⁷ where the National Harrow Company, the plaintiff below, had entered into a licensing agreement for its patented “float spring tooth harrows, their frames, and attachments applicable thereto.” When the plaintiff sued to recover liquidated damages and obtain injunctive relief for breach of contract, the defendants sought to avoid enforcement by showing that the contract was in violation of the Sherman Act, due to a “combination on the part of all the dealers in patented harrows to control their manufacture, sale, and price in all portions of the United States,”⁴⁸ by such devices as manufacturing or sale quotas, territorial restrictions, line of use restrictions and the like,⁴⁹ all of which would be the source of per se antitrust liability if done by dealers as part of a horizontal cartel. But in this context, the dealers’ role was a makeweight, for all the power lay exclusively in the hands of National Harrow, the patentee, who selected the dealers and instructed them on all these terms. Hence the defense failed. Justice Peckham, in line with earlier authority, upheld the unilateral actions of National Harrow:

The plaintiff, according to the finding of the referee, was at the time when these licenses were executed the absolute owner of the letters patent relating to the float spring tooth harrow business. It was, therefore, the owner of a monopoly recognized by the Constitution and by the statutes of Congress. An owner of a patent has the right to sell it or to keep it; to manufacture the article himself or to license others to manufacture it; to sell such article himself or to authorize others to sell it.⁵⁰

The impeccable economic logic behind this opinion is as sound today as it was on the day it was written. The owner of any form of property is of course entitled to keep or sell it. There is nothing which says that the sale of a particular property has to be made to one, and only one, person. It is clear that the patent confers some ability to raise price over marginal cost, but this advantage is exactly what patents are intended to produce.

⁴⁷ 186 U.S. 70 (1902).

⁴⁸ *Id.* at 84.

⁴⁹ See Adam Mossoff, A Simple Conveyance Rule for Complex Innovation, 44 *Tulsa L. Rev.* 714-15 (2009) (citations omitted).

⁵⁰ *National Harrow*, 186 U.S. at 88–89.

Or, to put the point in general terms: anyone who owns an especially desirable asset can reap extra gains by selling it into a competitive market, without running afoul of the antitrust laws. In standard economic terms, the seller reaps Ricardian rents. By way of example, these rents are enjoyed by the owner of coal deposits that lie close to the surface and thus can be mined at lower cost than other market participants, whose coal lies deeper underground. Thus, if the market price of coal is \$25 per ton, everyone who can produce at below that price will remain in the market. A coal owner who can extract at a cost of \$10 will earn a Ricardian rent of \$15 per ton and will remain in the market, so long as the price of coal exceeds that level, even as those with higher costs of production will exit first. If the first party sells its mine to another, the sales price will reflect the present discounted value of the future Ricardian rents, allowing the late entrant only the normal competitive rate of return. Accordingly, Ricardian rents do not create an umbrella for new entry, but monopoly rents do.⁵¹ Put otherwise, the violation of the antitrust law comes *only when two or more independent sellers* come together and raise the competitive price, at which point the seller whose coal is near the surface gets some mixture of a legal Ricardian rent and an illegal monopoly return.

Exactly the same situation applies to patented goods. The patent (or trade secret) creates a Ricardian rent but does not create a market distortion. It follows, therefore, that it should be allowed to use whatever means it sees fit to exploit that position. Ordinarily, any restriction on the mode of its disposition will reduce monopoly rents, but it will render the system of distribution less efficient than it was before. Hence Justice Peckham is entirely correct in noting that the patentee can act by itself or through one or more agents, and can sell or license, absolutely or on condition.

⁵¹ See Joseph Shaanan, *Ricardian or Monopoly Rents? The Perspective of Potential Entrants*, 32 EASTERN ECON. J. 19 (2006).

B. Common Carriers

To this particular pricing rule, moreover, there is an important exception dealing with common carriers. Much of the late-nineteenth and early-twentieth century law dealt with the difficult questions of rate regulation that arose when new technology was discovered; important industries like railroads and public utilities were often serviced by a single supplier of the new technology. In some instances, these suppliers obtained a natural monopoly position because they received an exclusive government franchise. In others, there were physical limitations that prevented the entry of rival suppliers. Starting with the important English case of *Allnut v. Inglis*,⁵² the English Courts held that a common carrier was restricted to charging a competitive rate, which could be easily determined on the facts of that case. The defendant operated a customs house that was exempted from inland taxes because the goods stored there were to be shipped overseas. The tax exemption was an effort of the British government to steer international transportation through British ports. The proprietor attempted to raise his rates to capture some of the tax reduction, which impaired the success of the two-part system. The government had to come in to correct the situation by limiting the proprietor's rates to match the competitive warehouses located nearby.

The incorporation of the common carrier doctrine into the United States rested on the explicit reliance on *Allnut* in the great American rate case of *Munn v. Illinois*,⁵³ which gave rise to a far more difficult question of how to apply the principles of rate regulation when there was no competitive benchmark lying nearby. At such a point, the entire enterprise requires rate of return regulation, which was one of the main topics of the late-nineteenth and early-twentieth century Supreme Court case law. The complex system is

⁵² 104 Eng. Rep. 206 (K.B. 1810). For a detailed account of the case, see Richard A. Epstein, *PRINCIPLES FOR A FREE SOCIETY: RECONCILING INDIVIDUAL LIBERTY WITH THE COMMON GOOD* 282–286 (1998).

⁵³ 94 U.S. 113, 127 (1876) (citing *Allnut v. Inglis* 104 Eng. Rep. 206 (K.B. 1810)).

hard to describe in a few lines, but the challenge faced by the courts was to find the middle path between unacceptable extremes: monopoly profits from unregulated rates and asset confiscation from low rates determined by a public utility commission, which could result in the inability of a firm to recover its invested capital.⁵⁴ For our purposes, the precise formulas for determining reasonable rates are not in issue. What does matter is that in *Bement*, Justice Peckham rightly held that the same power to regulate the rates of common carriers that held a monopoly position also applied to patent holders in that same position. Thus, in *Bement*, Peckham wrote that service duties applied

because a telephone company, being in the nature of a common carrier, was bound to render an equal service to all who applied and tendered the compensation fixed by law for the service; that while the patentees were under no obligation to license the use of their inventions by any public telephone company, yet, having done so, they were not at liberty to place restraints upon such a public corporation which would disable it to discharge all the duties imposed upon companies engaged in the discharge of duties subject to regulation by law.⁵⁵

That formula has, in rate regulation circles, been called service on (F)RAND, or (fair), reasonable and nondiscriminatory terms. The argument for using this formula is the same today as it was back in the early 20th century. The term “fair” was intended to show that the rates in question could not be left to the appetites of the parties, but rather had to meet some external standard of validity. The term “reasonable” was included to imitate the overall rate of return reduced to a competitive-market rate, adjusted for risk under the particular regulatory environment, and the term “nondiscriminatory” meant that certain forms of price discrimination, namely, any practice that charged different rates to customers who had equal cost of service had to be banned. It is exactly these basic conditions that are used today in dealing with so-called standard essential patents. The exact formulas that are used to resolve these cases can vary, owing to the fact that there

⁵⁴ See, e.g., *Chicago, Mil. & St. Paul R. Co., (The Minnesota Rate Cases)*, 134 U.S. 418 (1890) (cautioning against the false equivalence of regulation and confiscation); *Smyth v. Ames*, 169 U.S. 466 (1898) (same).

⁵⁵ *Bement*, 186 U.S. at 91.

is no unique price that is mutually advantageous for all parties.⁵⁶ But these are common problems in all rate regulation cases, and the sole purpose of these observations is to stress that these difficulties are not unique to the patents.

C. Tie-ins

Another form of unilateral conduct is tie-in sales or required purchases accompanying leases of patented goods.⁵⁷ Under the general logic of *Bement*, there is no sharp distinction between the various kinds of restrictions that the patentee can impose on the use of its object. Thus, tie-in arrangements for a patented product, in which a company forces the purchase of an accompanying non-patented product, would have been subject to a rule of per se legality that applies to price so long as there was no cooperative arrangement with other parties. That position was taken by the Supreme Court in *Henry v. A.B. Dick Co.*, where the requirement to use unpatented ink was attached to the sale of a patented rotary mimeograph machine.⁵⁸ The Court held that the patentee could sue a rival supplier of ink to one of its customers as a form of contributory infringement. That decision, in turn, raised a dissent from Chief Justice White, who objected to the tying arrangement, in his view, as the abuse of “legislative power” to extend the patent to cover things that are not within its original scope.⁵⁹ The dissent proved influential with Congress, which two years later passed Section 3 of the Clayton Act. That section applied to the sale or lease of both “patented or unpatented”

⁵⁶ See, e.g., Mark A. Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 BERK. TECH. L. J. 1135 (2013) (using baseball final offer arbitration to resolve rate disputes); Richard A. Epstein & Kayvan Noroozi, *Why incentives for “Patent Holdout” Threaten to Dismantle FRAND, and Why it Matters*, 32 BERK. TECH. L. J. 1381 (2017) (requiring licensees to make offers before attacking FRAND rates, given a bilateral risk of holdouts).

⁵⁷ For a careful background discussion, see Keith Hylton, *ANTITRUST LAW: ECONOMIC THEORY & COMMON LAW EVOLUTION* 278–310 (2003).

⁵⁸ 224 U.S. 1 (1912) (where a tie-in of the sale of ink was tied to the use of a patented product).

⁵⁹ *Id.* at 51.

merchandise of all kinds and description, on condition that the lessee or purchaser cannot use that product in dealing with the product of some competitor, if that restriction substantially lessens competition or tends to create a monopoly in any line of commerce.⁶⁰

Section 3 reflects the basic view of Chief Justice White: that ties-ins allow parties to “lever” their monopoly position in one market into a monopoly position in the sales of the tied good. For many years, the Supreme Court went even further by taking the position that “[t]ying agreements serve hardly any purpose beyond the suppression of competition,”⁶¹ in holding that Standard Oil could neither make nor enforce an exclusive dealing contract for petroleum products and automobile accessories. In the course of his opinion, Justice Frankfurter correctly made reference to tie-in arrangements with patented goods. In this context, the key decision is *International Salt. Co v. United States*,⁶² which carried forward the tradition of per se illegality of tying agreements. International Salt (IS) owned two key patents: “the ‘Lixator,’ [which] dissolves rock salt into a brine used in various industrial processes, [and] the ‘Saltomat,’ [which] injects salt, in tablet form, into canned products during the canning process.” Both of these goods were tied to a non-patented good, salt. IS’s standard business practice required lessees of these patented machines to only use IS’s salt. By way of justification, IS claimed that its salt in question had a higher level of purity than other brands of salt commonly available in the market, and that using lower quality salts could ruin the leased equipment in which IS still had a proprietary interest. Its contract also contained a provision that stated that if a competitor offered an equivalent product at a lower price, IS would have to meet that price or forfeit its exclusivity. The Supreme Court, speaking through Justice Jackson, held

⁶⁰ 38 Stat. 731(1914). This section was held to override *A.B. Dick. See Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 517–518 (1917).

⁶¹ *Standard Oil of California v. United States*, 337 U.S. 293, 305–306 (1949) (striking down exclusive dealing contracts).

⁶² 332 U.S. 392 (1947).

that the tying arrangement was a per se violation of the antitrust laws that was not saved by either of the purported justifications.

Given the basic logic of *Bement*, why is it the case that IS contains complete freedom of pricing over its own product, but none over the use of tied goods? In choosing its marketing strategy, IS could charge the same price for the entire package if it raised the price of its equipment and lowered the price of the salt, in order to ward off further competition in the salt market. But would that be wise, given that the proportions matter? At one extreme, it would not do to charge some fixed price for the machine and nothing for the salt, no matter how much was used. Nor, at the other extreme, would it work to charge nothing for the machine, and obtain all revenues from the sale of salt. The difficulty with these polar arrangements arises whenever (as is always the case) the various lessees use different amounts of salt with the same equipment. High demanders would gravitate to the first arrangement, on which the company could lose money, as the low demanders would drop out. Conversely, on the latter arrangement, the low demanders would stay and the high demanders would drop out. Clearly some intermediate solution would work best to keep the full range of potential customers, and there is no reason to think that any court could find that intermediate position better than IS. Simply put, there is no sensible reason to let a court force IS to change the relative price of its two products.

Justice Jackson was also wrong to pooh-pooh the “meeting competition” provision of the agreement, which allows for price reduction to remain in the market if a competitor offers the same goods or services for less. That term gave the company an advantage in the case of ties, but it did nothing to prevent a more efficient salt producer from offering salt at a price that IS could not match, thereby retaining competition for both the tying and the tied good. The right of first refusal is common in other contexts, and this

provision is just a variation on that theme.⁶³ And, finally, there is a difference between stipulating a standard of salt that outsiders must supply and supplying it yourself. There is less of a quality control problem when a company supplies its own product than when it has to monitor the lessee's use an inferior product, which might cause equipment damage that is borne by the lessor.

It should be clear that this brief discussion undercuts the once-regnant theory calling for per se illegality in patent tie-in cases—namely “a hostility to use of the statutorily granted patent monopoly to extend the patentee's economic control to unpatented products.”⁶⁴ A more finely attuned understanding of these business arrangements reveals that different arrangements, such as tie-ins or exclusive dealing contracts, might well have efficiency justifications that render per se illegality an inappropriate response to the issue. Hence the modern cases have marked a retreat from the per se rule in favor of a move toward a rule of reason analysis, most notably in *Jefferson Parish Hospital District Number 2 v. Hyde*.⁶⁵

That shift in attitude has worked its way back into dealing with patent tie-in cases in *Illinois Tool Works, Inc. v. Independent Ink, Inc.*⁶⁶—yet another patent tie-in case with ink and cartridge that applied the rule-of-reason test from *Jefferson Parish*. At issue in the case was yet another instance in which the sale of ink was the tied product to a sale of a patented inkjet printer, to which was attached a condition that the ink for that equipment had to be purchased from Illinois Tool Works. The decision rested specifically on the notion that the holding of a patent should not be regarded as holding a monopoly position in the sale of the tying good, and that such claims had to be separately proved,

⁶³ Meg Prater, *What is a Right of First Refusal? Absolutely Everything You Need to Know*, HUBSPOT (Oct. 8, 2019), <https://blog.hubspot.com/sales/right-first-refusal>.

⁶⁴ *United States v. Loew's Inc.*, 371 U.S. 38, 46 (1962) (citing *International Salt*, 332 U.S. at 392).

⁶⁵ 466 U.S. 2 (1984).

⁶⁶ 547 U.S. 28 (2006).

without any presumption in favor of treating the patent as a dominant product. As Justice Stephens had noted, the patent law had come to reject the position that the tie-in condition was a form of market abuse, and he held that the antitrust laws should take the same view with respect to the patented equipment. Indeed, that analysis has to be correct, because otherwise there would be two different bodies of law to respond to the common question of monopoly. At this point, however, the question does arise as to how exactly a rule-of-reason inquiry should work in tie-in cases. First, the printing business is highly competitive, so the entire monopoly issue seems to be misplaced; but second, the decision here—while explicitly rejecting the claim of *Standard Oil* that tie-in arrangements are used solely to suppress competition—does not stop to answer the question of what kind of efficiency justifications *should* be allowed once *Standard Oil*'s major premise is rejected. And so the law seems to come to its resting place, when it appears that a rule of per se legality most accurately captures the situation.

D. Coordinated Conduct

The last question on the intersection between the patent and antitrust laws concerns the cases where two or more patentees agree, between themselves, to some cooperative arrangement. In line with the general thesis of this chapter, general antitrust principles should apply with equal force to patented goods, which was the position taken, in 2017, by the Department of Justice and the Federal Trade Commission in their *Antitrust Guidelines for the Licensing of Intellectual Property*.⁶⁷ At this point, the key distinction in

⁶⁷ DEPARTMENT OF JUSTICE & FEDERAL TRADE COMMISSION, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY (2017), https://www.ftc.gov/system/files/documents/public_statements/1049793/ip_guidelines_2017.pdf (“These Guidelines embody three general principles: (a) for the purpose of antitrust analysis, the Agencies apply the same analysis to conduct involving intellectual property as to conduct involving other forms of property, taking into account the specific characteristics of a particular property right; (b) the Agencies do not presume that intellectual property creates market power in the antitrust context; and (c) the Agencies recognize that intellectual property licensing allows firms to combine complementary factors of production and is generally procompetitive.”).

antitrust law is between horizontal and vertical agreements, where the former link together rival producers at the same level of production, and the latter link together producers at the different levels of production. The reason for the sharp distinction between these two cases depends on key, first-order differences. With horizontal arrangements, the coordination between rival producers creates a cartel situation, in which the parties are able to raise prices above marginal cost and obtain a monopoly profit that they could divide among themselves, thereby generating a social loss. The vertical arrangements join together producers at different levels of the process, and ordinarily have strong efficiency justifications: the elimination of the double-marginalization problem, and the coordination of production in technology across different stages of production.⁶⁸

The first of these justifications is the elimination of the blockade problem that arises when the cooperation of all parties is necessary to bring a particular good to market.⁶⁹ The situation is similar to the historical blockades along the Rhine River, where each toll could block movement along the entire river—an arrangement that was undone by the Treaty of Westphalia.⁷⁰ The greater the number of tolls, the more the impediment, until the cumulative demands are so great that the shipment stops altogether. If it is

⁶⁸ For more on vertical arrangements, see John M. Yun, *Vertical Mergers and Integration in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020), and Daniel P. O'Brien, *The Economics of Vertical Restraints in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁶⁹ See James L. Hamilton & Ibrahim Mqasqas, *Double Marginalization and Vertical Integration: New Lessons from Extensions of the Classic Case*, 62 S. ECON. J. 567, 567 (1996) ("Suppose that an upstream industry sells an intermediate good to a downstream industry, which in turn produces a final product that it sells to consumers. Then, because the upstream and downstream industries independently engage in noncompetitive pricing, the firms in each industry only see the effect on their output restriction on their own profits, and do not see that their output restriction also affects the profits of the firms in the other industry. This myopia creates a 'vertical externality' that vertical integration would internalize. In the simplest case, when the products are homogeneous and final production has fixed input proportions, the conventional wisdom about double marginalization is that '... the integrated industry makes more profit than the nonintegrated industry, and the consumer price is lower in the case of the integrated firm.'").

⁷⁰ Treaty of Westphalia, art. LXX, Oct. 1648, Art. LXX, https://avalon.law.yale.edu/17th_century/westphal.asp.

assumed that some fees have to be collected to maintain the river, a single set of charges to cover the entire course offers a better way to raise those funds, without disrupting what goes on.

A second advantage of the unified vertical production line is that it eases problems in the coordination of production. A closer integration within the firm allows for the tighter integration of the various steps involved and also has the added advantage of making it easier to deal with external parties, be they merchants or consumers, when a finished product fails in some regard. Without vertical integration, disappointed purchasers or users who wish to get relief may sue the maker of the finished product—who, in turn, might find it difficult to defend the case if it does not know how each component functions, or which one went wrong. Worse, even if the original claim is disposed of, actions for contribution and indemnity may quickly follow. These could be litigated by contract on a piecemeal basis, at great cost and uncertainly, especially given that subcontractors might be involved. Vertical integration makes sense when internal controls are more efficient than litigation to achieve the desired ends. That need not be the case; but, if so, separate firms can continue to operate linked together only by contract—which might well happen when many of the key components sell to many independent players. But where these mergers do take place, the efficiency justifications seem to dominate any purported monopoly problem.

These differences are what drove the original merger of three major shoe companies, each with a different specialization, to form the United Shoe Machinery Company in 1899, in a transaction orchestrated by Louis Brandeis.⁷¹ That transaction was upheld in *United States v. Winslow*, explicitly on efficiency grounds:

On the face of it the combination was simply an effort after greater efficiency. The business of the several groups that combined, as it existed before the combination, is assumed to have

⁷¹ For the early history see *United States v. Winslow*, 227 U.S. 202 (1913). For discussion, see Richard A. Epstein, *ANTITRUST CONSENT DECREES IN THEORY AND PRACTICE: WHY LESS IS MORE* 40–54 (2007).

been legal. The machines are patented, making them is a monopoly in any case, the exclusion of competitors from the use of them is of the very essence of the right conferred by the patents, *Paper Bag Patent Case*, 210 U.S. 405, 429 [1908] and it may be assumed that the success of the several groups was due to their patents having been the best. As, by the interpretation of the indictment below, and by the admission in argument before us, they did not compete with one another, it is hard to see why the collective business should be any worse than its component parts.⁷²

The arguments thus far point again to per se legality, but that is not the position that is taken by the DOJ/FTC guidelines. These guidelines argue that a vertical merger poses two risks. The first is that its position in the upstream market may lead it to foreclose the activities of rivals in a downstream market.⁷³ That certainly could happen, but mostly in unique situations, given that the firm must sacrifice potential sales in the hope that the lost profits from those ventures could be made up elsewhere. There will always been some reluctance to engage in that activity, but if it takes place, the hard question is why it is wrong for a given company to cease serving a given client if there is no obligation to begin that service in the first place. It was therefore instructive that, in the AT&T/Time Warner merger, the parties responded to this threat by saying that it would not unilaterally cut off any outside distributor from its content, and offered all third party distributors a baseball-style arbitration for seven years, whereby each party would set a price for the transaction and require the arbitrator to pick the number that was closer to the arbitrator's own assessment of price.⁷⁴ That concession only makes sense because it does not impair the efficiency elements of the transaction.

The second risk is that the dominant firm may well acquire valuable information about the trade secrets of one of its trading partners, which it could put to good use in its

⁷² Winslow, 227 U.S. at 217.

⁷³ U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, VERTICAL MERGER GUIDELINES, at 4 (2020), https://www.ftc.gov/system/files/documents/reports/us-department-justice-federal-trade-commission-vertical-merger-guidelines/vertical_merger_guidelines_6-30-20.pdf.

⁷⁴ Tony Romm, *AT&T pledged that CNN and TBS channels won't go dark on any pay TV services if it's allowed to buy Time Warner*, VOX (Nov. 28, 2017), <https://www.vox.com/2017/11/28/16712632/att-cnn-tbs-wont-go-dark-pay-tv-buy-time-warner-merger>.

own business. But leaks of information do not depend on having any market power. They only depend on having access to information that could be valuable, even if neither firm has close to a dominant position. These two risks seem far less important than the identifiable gains relating to double marginalization and supply chain management, so even though the Vertical Guidelines purport to treat them as matters of increased concern, most of these arrangements are likely to pass muster unless some clear inefficiency could be identified.

VI. THE QUALCOMM SAGA: WIPEOUT AND RECOVERY

There was, however, one complex transaction on which the DOJ and FTC have parted ways. It involves an attack on Qualcomm for alleged antitrust violations by the misuse of its patent portfolio. The story took place in two stages. At the District Court level, Judge Lucy Koh ordered Qualcomm to engage in a complex set of practices that would have required it, among other things, to license its technology to its direct competitors; to renegotiate the prices for its chipsets to its customers in the United States and overseas; to offer its chips without any collateral conditions; and to submit to arbitration of judicial resolution of disputes over reasonable royalties, other patent terms, and standard essential patents.⁷⁵ That decision was in turn reversed by a panel of the Court of Appeals for the Ninth Circuit.⁷⁶ The district court opinion had attracted extensive commentary, much but not all of it critical.⁷⁷

As the Ninth Circuit eventually concluded, the District Court's *Qualcomm* decision

⁷⁵ 411 F.Supp. 3d 658, 818 (N.D. Cal. 2019).

⁷⁶ Fed. Trade Comm'n v. Qualcomm, Inc., 969 F.3d 974 (9th Cir. 2020).

⁷⁷ See, e.g., Richard A. Epstein, *Judge Koh's Monopolization Mania: Her Novel Assault Against Qualcomm is an Abuse of Antitrust Theory*, 97 NEB. L. REV. 241 (2019) (by way of disclosure, I advised Qualcomm during the course of the litigation); Douglas H. Ginsburg, Joshua D. Wright & Lindsey M. Edwards, *Section 2 Mangled: FTC v. Qualcomm on the Duty to Deal, Price Squeezes, and Exclusive Dealing*, 8 J. ANTITRUST ENFORCEMENT 335 (2020). But see Brief of Amicus Curiae Open Markets Institute in Support of Plaintiff-Appellee, Federal Trade Commission v. Qualcomm Incorporated, 969 F.3d 974 (9th Cir. 2020).

involved multiple departures from established antitrust policy. First, Judge Koh attacked Qualcomm's "no license-no chips" policy, which stated that Qualcomm would not sell its chips to parties that did not take out a technology license from the company for their use. To the FTC, this policy represented an unfair method of competition because it let Qualcomm use its alleged dominance in the market for chipsets to extract elevated royalties from all licensees of its patented technology under standard FRAND licenses. Thus the FTC complaint stated that Qualcomm's "'no license-no chips' policy dramatically increases customers' costs of challenging Qualcomm's preferred license terms [for use of its patented technology]" such that "Qualcomm's customers have accepted elevated royalties and other license terms that do not reflect an assessment of terms that a court or other neutral arbiter would determine to be fair and reasonable."⁷⁸

To this charge, the simple rejoinder is that anyone who chooses to license the technology need not purchase any Qualcomm chips. At this point, the options are these: Those who want to buy both the chips and the technology from Qualcomm are indifferent to the allocation of the package costs between the two goods, so long as the total paid minimizes their costs. But for those who want to buy only the license, without the chips, the situation is as it was in *Bement*; namely, the firm is entitled to get the full cash price for the use of its technology when it is sold on a stand-alone basis, at which point any reference to "fair and reasonable" rates is irrelevant to the overall analysis. Commissioner Maureen K. Ohlhausen was correct in her dissent to the FTC decision to prosecute, when she denied that Qualcomm could use its "alleged chipset monopoly" to force higher rates for its technology packages. It is unclear, moreover, where that monopoly is. As the Ninth Circuit observed, the Taiwanese company MediaTek and the Korean firm Samsung have made major moves in the 5G market.⁷⁹ The Ninth Circuit hit hard on this point when it

⁷⁸ Federal Trade Commission's Complaint for Equitable Relief, *Fed. Trade Comm'n v. Qualcomm, Inc.*, No. 5:17-CV-00220, 2017 WL 242848 (N.D. Cal. Jan. 17, 2017).

⁷⁹ See Jeremy Horwitz, *Samsung and Mediatek Emerge as Qualcomm's top 5G Chip Rivals in 2020*, VENTUREBEAT

wrote:

The FTC's conclusion that OEM-level licensing does not further competition on the merits is not only belied by MediaTek and Intel's entries into the modem chip markets in the 2015–2016 timeframe, it also gives inadequate weight to Qualcomm's reasonable, procompetitive justification that licensing at the OEM and chip-supplier levels simultaneously would require the company to engage in “multi-level licensing,” leading to inefficiencies and less profit.⁸⁰

This second half of this passage offers a powerful efficiency judgment that is too often overlooked in antitrust cases. The patent exhaustion rule makes it clear that a patentee is only able to enforce its patent rights against the initial buyer or licensee.⁸¹ That limitation on freedom of contract in turn makes it unwise for Qualcomm to license any patents to rival chip manufacturers, because the patent exhaustion rule will then make it impossible for them to enforce any patent rights against original equipment manufacturers where the need for product control is clearly greater. Hence, the peculiarities of the patent law offer an additional justification for Qualcomm practices that might not be needed if the company could enter into comprehensive agreements at all levels, without fear of contractual nonenforcement. The limitations on freedom of contract have implications that go beyond any particular contract to cover a full range of interdependent transactions.

It is also worth noting that this particular arrangement does not result in any form of market foreclosure of the sort mentioned in *Jefferson Parish*. The risk of a tie-in is not present because any company that purchases only the technology is charged the same right as one that purchases both halves of the package, negating any risk of monopoly extraction. That risk would arguably be present if Qualcomm had announced a “no chips-no license” policy, which would have made it impossible to use anyone else’s chips with Qualcomm’s patented technology—itself a risky strategy, given that many people will

(Nov. 8, 2019), <https://venturebeat.com/2019/11/08/samsung-and-mediatek-emerge-as-qualcomms-top-5g-chip-rivals-in-2020/>.

⁸⁰ *FTC v. Qualcomm*, 969 F.3d at 996.

⁸¹ *See id.* at 984, quoting from *Quanta Computer v. LG Electronics*, 553 U.S. at 625.

choose to take neither instead of both. But, far from that possible form of foreclosure, the only asserted claim of foreclosure was the agreement between Qualcomm and Apple for Apple to take its chips exclusively from Qualcomm. There are obvious efficiencies in having a single source of supply, and, even if we put those aside, in *Tampa Electric Co. v. Nashville Co.*,⁸² the Supreme Court held that an exclusive-dealing arrangement “does not violate the section unless the court believes it is probable that performance of the contract will foreclose competition in a substantial share of the line of commerce affected”⁸³—but no such line of commerce was identified by Judge Koh, and it would have to cover more than a single contract in what is clearly a global market with many versions of 5G technology in place, or quickly coming on board.

On this point, the Ninth Circuit went a long way to clarify the basic market definition when it correctly noted how the District Court strayed from its initial determination that the relevant markers were “the market for CDMA modem chips and the market for premium LTE modem chips,”⁸⁴ only to then extend its analysis to cover all instances of cellular service, including the OEMs, who as the customers of Qualcomm are not entitled under the antitrust laws to have any particular prices for their services.

Nonetheless, it is hard to see how Qualcomm had power in some broader market. For example, the supposed preclusive power of Qualcomm’s exclusive agreement with Apple did not stop Apple from jettisoning Qualcomm entirely in 2015 by signing an exclusive dealing agreement with Intel—which was not challenged under the antitrust laws. Next, Apple sued Qualcomm for antitrust violations, after which Qualcomm sued Apple for improperly sharing Qualcomm’s trade secrets with Intel, purportedly to help Intel build its own rival 5G chips to power the next generation of Apple smart devices.⁸⁵

⁸² 365 U.S. 320 (1961).

⁸³ *Id.* at 327.

⁸⁴ *FTC v. Qualcomm* 411 F. Supp. 3d at 683.

⁸⁵ *See Qualcomm Inc. v. Apple Inc.*, Trade Secrets Institute, Docket No. 37-2017-00041389-CU-BC-NC (Sept.

Both cases were settled in April 2019, when Apple and Qualcomm dropped all claims against each other.⁸⁶ Thereafter, Apple entered a six-year licensing agreement to use Qualcomm chips in its new phones—undoing its 2015 deal with Intel,⁸⁷ while agreeing to pay Qualcomm between 4.5 and 4.7 billion dollars for past royalties.⁸⁸ Hours after this settlement was announced, Intel exited the 5G market amid rumors that it would be unable to meet its development goals on time.⁸⁹ A simple efficiency explanation for the event is that Qualcomm chips were superior—which Judge Koh did not even allude to in her opinion. Yet the Ninth Circuit picked up the irony when it noted that Qualcomm offered Apple “billions of dollars in incentive payments contingent on Apple sourcing its iPhone modem chips exclusively from Qualcomm and committing to purchase certain quantities of chips each year.”⁹⁰ Monopolists normally do not have to pay their customers. By this arrangement, Qualcomm sought to retain the loyalty of Apple, which it would hardly have to do if Apple had no other party to whom it could turn.

As the Ninth Circuit powerfully demonstrated,⁹¹ Judge Koh also faltered dramatically with her second argument, which was that Qualcomm had a duty under the

24, 2018), <http://tsi.brooklaw.edu/cases/qualcomm-inc-v-apple-inc>.

⁸⁶ For the public announcement, see *Qualcomm and Apple Agree to Drop All Litigation*, BUSINESSWIRE (Apr. 16, 2019), <https://www.businesswire.com/news/home/20190416005931/en/>.

⁸⁷ See Jean Baptiste Su, *Analysis: Apple To Drop Qualcomm Modems From Next iPhones For Intel, Samsung Wireless Chips*, FORBES (July 26, 2018), <https://www.forbes.com/sites/jeanbaptiste/2018/07/26/analysis-apple-to-drop-qualcomm-modems-from-next-iphones-for-intel-samsung-chips/#3d9e06fc4960>.

⁸⁸ For one brief account of the supposed terms of settlement, see *Qualcomm Got \$4.7 Billion from Apple Settlement According to Earnings Release*, MACRUMORS (May 1, 2019), <https://www.macrumors.com/2019/05/01/qualcomm-apple-settlement-4-billion/#:~:text=Qualcomm%20Got%20%244.5%20Billion%20From%20Apple%20Settlement%20According%20to%20Earnings%20Release,-Wednesday%20May%201&text=Qualcomm%20today%20announced%20its%20quarterly,its%20recent%20settlement%20with%20Apple>.

⁸⁹ Chaim Gartenberg, *Intel says Apple and Qualcomm’s surprise settlement pushed it to exit mobile 5G*, THE VERGE (Apr. 25, 2019), <https://www.theverge.com/2019/4/25/18516830/intel-apple-qualcomm-surprise-settlement-pushed-exit-mobile-5g-modems>.

⁹⁰ *Qualcomm v. FCC*, 969 F.3d at 986.

⁹¹ *Id.* at 993-95.

antitrust laws to deal with its direct competitors. As a general matter, the antitrust laws are intended to preserve competitive conditions, so it is odd in the extreme to say that one competitor is under a duty to furnish assistance to its rivals, especially because a court will have to foist a complex agreement on an unwilling party to enforce such a duty. It was for these reasons that Justice Scalia, in a widely quoted passage in *Verizon Communications v. Law Offices of Curtis V. Trinko*,⁹² wrote: “We have been very cautious in recognizing such exceptions, because of the uncertain virtue of forced sharing and the difficulty of identifying and remedying anticompetitive conduct by a single firm.”⁹³

Nonetheless, Judge Koh found that “[u]nder certain circumstances, a refusal to cooperate with rivals can constitute anticompetitive conduct and violate § 2.”⁹⁴ For that proposition, she relied on the much-criticized decision⁹⁵ of *Aspen Skiing Co. v. Aspen Highlands Skiing Co.*,⁹⁶ which held that it could constitute an antitrust violation for three ski resorts, which previously offered package deals with a fourth, to break off that arrangement. *Aspen Skiing* did not require the court to force novel obligations on competitors who were never cooperators. Instead, the companies only had to reinstate the earlier agreement—and even that conclusion is dubious, given that the other three ski resorts might have been able to show that they terminated the agreement because the plaintiff’s facilities did not reach the standard found in the other lifts, at which point the pooling arrangement (which helps bring people to the slopes) is offset by an efficiency disadvantage to the three stronger resorts. But here, the only prior relationships were twenty years earlier in unrelated transactions. The huge gap provoked an angry response

⁹² 540 U.S. 398 (2004).

⁹³ *Id.* at 408.

⁹⁴ *FTC v. Qualcomm*, 411 F.Supp.3d at 758 (quoting *Trinko*, 540 U.S. at 411).

⁹⁵ See Dennis W. Carlton, *A General Analysis of Exclusionary Conduct And Refusal to Deal—Why Aspen and Kodak Are Misguided* (NBER Working Paper 8105, 2001), <https://www.nber.org/papers/w8105.pdf>.

⁹⁶ 472 U.S. 585 (1985).

by Christine Wilson, a new FTC Commissioner who explicitly broke ranks with her predecessors, noting that it was indefensible to impose a duty to deal today based on Qualcomm business practices that “involved licensing different patents, to different competitors, in a different century.”⁹⁷ As if on cue, the Ninth Circuit followed this analysis closely in reversing Judge Koh.⁹⁸

What is most striking about Judge Koh’s *Qualcomm* decision is how it sidesteps the fundamental task of antitrust law, which is to weigh the restrictive practices of a defendant against any efficiency justifications that it can advance in justification of its behavior. The various permutations of tie-ins and exclusive dealing call out for that treatment—but, although the word “efficiency” is mentioned a few times in the opinion, Judge Koh made no sustained effort to understand either the industry or the business practices. Yet on top of all that, Judge Koh ordered a set of world-wide remedies that were as comprehensive and demanding as her opinion was weak. The Ninth Circuit followed its stay with an emphatic reversal of the decision—which did not come a moment too soon. But the saga is not yet over; the FTC is pursuing *en banc* review before the full Ninth Circuit.

CONCLUSION

The purpose of this chapter was to tease out the relationships between patent and antitrust law, insofar as they seek to address, in their separate ways, the problem of monopoly. No one should doubt that the mission is a legitimate one; but, as with all such arrangements, it is a task fraught with risk—given that false charges of monopoly are, in their own way, as dangerous as cases of monopoly practices that escape detection and sanction. To get the right result, it is important first to note that property rights are not tantamount to monopolies, solely because they are exclusive to their holder. This basic

⁹⁷ Christine Wilson, *A Court’s Dangerous Antitrust Overreach*, WALL ST. J. (May 28, 2019).

⁹⁸ FTC v. Qualcomm, 969 F.3d at 994-95.

insight should not only govern such distinctive patent law questions as patent eligibility and patent abuse, but it should also carry over so that at no point does the antitrust law impose liability for monopoly behavior that passes muster under the patent law, or in the reverse. Harmonization is a *minimum* condition for a successful integration of the two bodies of law, but it is not a sufficient condition.

At the same time, it is important to make sure that there are no sharp discontinuities between the antitrust laws as they apply to patents and as they apply to other areas. In large measure, the doctrinal unification across separate substantive areas should stabilize this entire body of law. But that will only happen to the extent that the standard theories developed to date continue to apply to patent and nonpatent contexts alike. The subject is far too big to be raised in a final paragraph, but it is worth noting that the entire structure will be transformed for the worse if populist versions of antitrust law are allowed to dominate the area. It is a general proposition that bodies of law are good at doing one, and only one, task. The moment they are given two jobs—to promote efficiency and to create income equality, say—goals conflict and the doctrine muddles. In this regard, the Ninth Circuit decision to overturn the District Court is a watershed decision because it prevented what could have been a first major step in dismantling what has been by and large a well-crafted structure that integrates patent and antitrust law in a way that has served this nation well.

SECTION II: THE STATE OF COMPETITION IN THE DIGITAL ECONOMY

Is the Digital Economy Too Concentrated?

Jonathan Klick*

INTRODUCTION

Who cares if the digital economy is concentrated? Apparently, lots of people. “Many of the most innovative internet-derived digital markets, such as search engines, social networks, network operating systems, ecommerce, and ride-sharing, are highly concentrated and have been dominated by one or a few firms for a number of years. The lack of entry of competitors in these important markets—despite high profits—suggests either barriers to entry or exclusionary conduct, or both”¹ declares Fiona Scott Morton² and her co-authors in a Stigler Center Report. Thomas Philippon argues “competition has declined in most sectors of the U.S. economy,”³ paying particular attention to Amazon, Apple, Facebook, and Google as he makes his case, noting that “Information technology (IT) markets are highly concentrated.”⁴ Jason Furman and Peter Orszag fret that network effects “create tremendous barriers to entry in areas like online advertising, search, and operating systems for mobile phones and computers,”⁵ potentially leading to retarded

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¹ GEORGE J. STIGLER CTR. FOR THE STUDY OF THE ECON. & THE STATE, COMM. FOR THE STUDY OF DIG. PLATFORMS, MARKET STRUCTURE AND ANTITRUST SUBCOMM., REPORT 11 (2019) [hereinafter STIGLER CTR. REPORT], <https://research.chicagobooth.edu/-/media/research/stigler/pdfs/market-structure-report.pdf>.

² Elsewhere, Fiona Scott Morton notes that concentration measures are likely unhelpful in assessing competition and ultimate consumer welfare, instead preferring indicators such as price mark-ups (while noting that they too along with other accounting signals of reduced competition bear a complex relationship with consumer welfare and generally involve measurement difficulties). See Steven Berry, Martin Gaynor & Fiona Scott Morton, *Do Increasing Markups Matter? Lessons from Empirical Industrial Organization*, 33 J. ECON. PERSPS. 44 (2019).

³ THOMAS PHILIPPON, *THE GREAT REVERSAL: HOW AMERICA GAVE UP ON FREE MARKETS* 9 (2019).

⁴ *Id.* at 265.

⁵ Jason Furman & Peter Orszag, *Slower Productivity and Higher Inequality: Are They Related?* 11-12 (Peterson Inst. for Int’l Econ., Working Paper No. 18-4, 2018), <https://www.piie.com/system/files/documents/wp18-4.pdf>.

innovation⁶ and increasing inequality.⁷

This academic concern is accompanied by substantial political hand wringing and calls for new approaches to regulating the big players in the digital economy. Toward the end of her campaign for the Democratic nomination for president, Elizabeth Warren wrote that as companies like Amazon, Google, and Facebook “have grown larger and more powerful, they have used their resources and control over the way we use the Internet to squash small businesses and innovation, and substitute their own financial interests for the broader interests of the American people. To restore the balance of power in our democracy, to promote competition, and to ensure that the next generation of technology innovation is as vibrant as the last, it’s time to break up our biggest tech companies.”⁸ Around the same time, in an Associated Press interview, Joe Biden also indicated an openness to intervention in the digital economy saying that breaking up large technology companies is “something we should take a really hard look at.”⁹ The

⁶ The relationship between competition and innovation in general has long been and will continue to be debated. Innovation as an outcome is not particularly well-suited for rigorous empirical study given the uncertain time lags between investments in the inputs to innovation and the fruits of those investments. Relying on interesting lab experiments to side-step these empirical problems (at the potential cost of losing external validity), Philippe Aghion, Stefan Bechtold, Lea Cassar & Holger Herz, *The Causal Effects of Competition on Innovation: Experimental Evidence*, 34 J. LAW, ECON. & ORG. 162 (2018) shows that the links between competition and innovation are complicated even in the contrived experimental setting. Further highlighting the complicated nature of innovation, the Stigler Center report referenced above distinguishes between disruptive innovation and innovations made by incumbents, implying that the former type is better for consumers without much evidence. STIGLER CTR. REPORT, *supra* note 1, at 54.

⁷ Furman and Orszag use increasing concentration as an indicator of reduced competition, as do many individuals in this literature. However, as argued by Autor, et al., *The Fall of the Labor Share and the Rise of Superstar Firms*, 135 Q.J. Econ., 645, 702-04 (2020), increased concentration can be a result of increasing competition that leads to a rise in inequality. Others dispute the supposed empirical regularity that concentration is rising, suggesting that more appropriate micro analyses of consumer markets do not support this assumption. See, e.g., Esteban Rossi-Hansberg, Pierre-Daniel Sarte & Nicholas Trachter, *Diverging Trends in National and Local Concentration*, at 4, in 35 NBER MACROECONOMICS ANNUAL 2020 (Martin Eichenbaum & Erik Hurst eds., forthcoming 2020).

⁸ Elizabeth Warren, *Here’s How We Can Break up Big Tech*, MEDIUM (Mar. 8, 2019), <https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c>.

⁹ Hunter Woodall, *2020 Hopeful Biden Says He’s Open to Breaking up Facebook*, ASSOCIATED PRESS (May 13, 2019), <https://apnews.com/71c998ad3b39486ca1dcc220201b68b0>.

growing scrutiny of Big Tech's market power is bipartisan, as indicated by multiple inquiries by state attorneys general across the political spectrum,¹⁰ and even President Donald Trump has hinted his administration might join the fight against these companies. Trump indicated the federal government "should be suing Google and Facebook and all that," adding, "perhaps we will."¹¹

Those calling for action against the Big Tech companies generally agree that they are too big and that their size yields network externalities that insulate them from competition. In addition to being protected from competitors, both existing and future potential entrants, it is sometimes claimed that there are no real substitutes for the products offered by Big Tech firms, and it is sometimes suggested that the products are near necessities, allowing the firms to exploit consumers without limit. Some critics likewise argue that firms such as Google can use their advantage in their core market to gain market power in ancillary markets,¹² further cementing their dominance and leading to an even broader erosion of consumer welfare.

In addition to claims about the general exploitation of consumers and predictions that entry into digital markets is largely foreclosed by the dominance of companies like Facebook, Amazon, Apple, Netflix, and Google (the so-called FAANG companies), as well as some other villains like Uber and Microsoft, other claimed ills arising from high

¹⁰ See, e.g., Steve Lohr, *New Google and Facebook Inquiries Show Big Tech Scrutiny Is Rare Bipartisan Act*, N.Y. TIMES (Sept. 6, 2019), <https://www.nytimes.com/2019/09/06/technology/attorney-generals-tech-antitrust-investigation.html>.

¹¹ Tony Romm, *Trump Signals U.S. Government 'Should Be Suing Google and Facebook'*, WASH. POST (June 26, 2019), <https://nyti.ms/3gWU728>.

¹² See, e.g., Benjamin Edelman, *Does Google Leverage Market Power Through Tying and Bundling*, 11 J. COMPETITION L. & ECON., 365 (2015). For an even more pointed direct attack, see Fiona M. Scott Morton & David C. Dinielli, *Roadmap for a Monopolization Case Against Google Regarding the Search Market* (Omidyar Network Working Paper 2020), <https://www.omidyar.com/sites/default/files/Roadmap%20for%20a%20Monopolization%20Case%20Against%20Google%20Regarding%20the%20Search%20Market.pdf>.

concentration in Big Tech include reduced innovation,¹³ increasing inequality,¹⁴ reduced privacy and security of personal data,¹⁵ and decimated markets for labor¹⁶ and other intermediate goods¹⁷, to say nothing of the demise of democracy itself.¹⁸ Big is bad, the story goes, when it comes to these tech giants, and the primary prescription is more antitrust intervention, including break-ups¹⁹ and direct regulation,²⁰ as well as adopting new standards to govern antitrust law altogether.²¹

These academic and policy concerns hinge critically on the claim that the relevant markets are highly concentrated.²² I investigate that claim and argue that many of the stylized concentration facts are misleading. I also provide some analysis suggesting that fears of leveraging supposed market dominance to gain control of related markets may

¹³ See, e.g., Teresa Rivas, *Breaking Up Amazon, Apple, and Facebook Could Drive More Innovation, Analyst Says*, BARRON'S (June 19, 2019), <https://www.barrons.com/articles/breaking-up-apple-facebook-amazon-google-innovation-51560955244>.

¹⁴ See Shi-Ling Hsu, *Antitrust and Inequality: The Problem of Super Firms*, 63 ANTITRUST BULL. 104 (2018) for a review of some of these arguments.

¹⁵ See, e.g., Dina Srinivasan, *Why Privacy Is an Antitrust Issue*, N.Y. TIMES (May 28, 2019), <https://nyti.ms/35avyfG>.

¹⁶ See, e.g., Karen Weise & David McCabe, *Unions Push F.T.C. to Study if Amazon Warps the Economy*, N.Y. TIMES, February 27, 2020, <https://nyti.ms/3haPvWl>.

¹⁷ See, e.g., Valentina Pop & Sam Schechner, *Amazon to Face Antitrust Charges From EU Over Treatment of Third-Party Sellers*, WALL ST. J. (June 11, 2020), <https://www.wsj.com/articles/amazon-to-face-antitrust-charges-from-eu-over-treatment-of-third-party-sellers-11591871818?st=f2dla774u2blk11>.

¹⁸ See, e.g., Lina Khan, *Amazon's Antitrust Paradox*, 126 YALE L.J. 710, 743 (2017).

¹⁹ See, e.g., Lauren Hirsch & Megan Graham, *States Are Leaning Toward a Push to Break up Google's Ad Tech Business*, CNBC (June 5, 2020), <https://www.cnbc.com/2020/06/05/states-lean-toward-pushing-to-break-up-googles-ad-tech-business.html>.

²⁰ See, e.g., Cecilia Kang & Adam Satariano, *Regulators Around the World Are Circling Facebook*, N.Y. TIMES (Apr. 25, 2019), <https://nyti.ms/2ZcJfaf>.

²¹ See, e.g., Marshall Steinbaum & Maurice E. Stucke, *The Effective Competition Standard: A New Standard for Antitrust*, 87 U. CHI. L. REV. 595 (2019).

²² As noted earlier, increasing concentration could be consistent with increased competition and improved consumer welfare. Autor, et al., *supra* note 7. By saying these concerns hinge on increasing concentration, I am suggesting that increasing concentration is a necessary (although not sufficient) element of the concerns discussed here.

be overblown.

I. DEFINING MARKETS TOO NARROWLY IS QUESTION BEGGING

Amazon is a behemoth when it comes to online sales. Based on common estimates, Amazon accounted for 37% of retail e-commerce sales in 2019, and it is expected to push 40% by 2021.²³ The next closest competitors (Wal-Mart and eBay) do not even control 5% of e-commerce sales each.²⁴ However, relegating Amazon's market to e-commerce rather than retail more generally might be a little like treating Sonic as controlling the market for hamburgers delivered to your car while you sit in a parking lot stall because McDonald's won't do that. That is, there is little *a priori* reason to carve out something known as e-commerce from retail more generally. In fact, data from a 2018 survey suggest that most consumers still prefer shopping offline. When asked, "If you had to choose, which would you say is your preferred method of shopping? . . . In person at a store, online, with items being shipped to you, online, and picking up items at a store," 55% indicated they preferred to shop in person at a store, and an additional 5% said they preferred to shop online but pick the item up at a store. Of the remaining respondents, 37% said they preferred shopping wholly online.²⁵ Given this background preference for in-person shopping, treating e-commerce as its own market, as opposed to a substitute to the primary retailing market, may be problematic. The survey data strongly indicate that most shoppers regularly bounce between physical and online retailers.

If U.S. retail sales more generally are taken as the denominator of Amazon's

²³ See eMarketer, *Amazon Remains the Undisputed No. 1* (Mar. 11, 2020), <https://www.emarketer.com/content/amazon-remains-the-undisputed-no-1>.

²⁴ ANDREW LIPSMAN, TOP 10 US ECOMMERCE COMPANIES 2020 WALMART AND TARGET CLIMB RANKINGS ON CLICK-AND-COLLECT GAINS (2020), <https://www.emarketer.com/content/top-10-us-ecommerce-companies-2020>.

²⁵ CNBC. CNBC All-America Economic Survey, Dec, 2018 [survey question]. 31117461.00038. Hart Research Associates/Public Opinion Strategies [producer]. Cornell University, Ithaca, NY: Roper Center for Public Opinion Research, iPOLL [distributor], accessed Jul-24-2020.

market share, the company looks a lot less threatening. As seen in Table 1, switching the relevant market to overall retail sales as opposed to e-commerce sales will reduce Amazon's measured market share significantly.

Table 1: E-Commerce as a Share of Total Retail Sales			
Year	Total Retail Sales (in \$millions)	E-Commerce Sales (in \$millions)	E-Commerce Share of Total
2010	3,816,760	169,141	4%
2011	4,102,027	199,098	5%
2012	4,296,762	230,771	5%
2013	4,458,197	262,303	6%
2014	4,633,589	301,365	7%
2015	4,721,579	344,982	7%
2016	4,837,599	395,987	8%
2017	5,058,370	457,239	9%
2018	5,272,247	518,468	10%
2019	5,452,351	595,916	11%
Note: Data source is U.S. Census Bureau, Retail Indicators Branch. Annual figures are summed from quarterly adjusted figures from Quarterly E-Commerce Report available at https://www.census.gov/retail/mrts/www/data/excel/tsadjustedsales.xls .			

In its financial statements,²⁶ Amazon does not provide U.S. specific sales numbers. It does break out the North American component of net sales, with North America representing 61% in both 2018 and 2019. Amazon does not provide this geographic breakdown when differentiating net product sales from net service sales (which includes things like Amazon Web Services), but assuming that the breakdown for North America is comparable to that for the company as a whole (i.e., about 60% of total net sales come from net product sales), Amazon's North American net product sales were about \$103 billion in 2019. Since the U.S. net product sales would only be a subset of this North American number, the absolute maximum share of U.S. retail sales accounted for by

²⁶ Amazon.com, Inc., Annual Report (Form 10-K) (Jan. 31, 2020), <https://www.sec.gov/ix?doc=/Archives/edgar/data/1018724/000101872420000004/amzn-20191231x10k.htm>.

Amazon's first party sales is less than 2%.

Third party sales on Amazon's platform are often included in the conventional estimates of Amazon's share of e-commerce. It is not clear that these sales should be lumped together for market concentration purposes. If, however, one includes third party sales, the total "Amazon-related" share of total U.S. retail sales is likely well below 5%.²⁷ As a point of comparison, Walmart's U.S. net sales of \$331,666 million in 2019 represent about a 6% share of total U.S. retail sales,²⁸ despite lagging behind Amazon in terms of e-commerce share, where Walmart holds about 5%.²⁹ Interestingly, Amazon's success in attracting third party sellers to its platform appears to have induced Walmart to enter that market as well.³⁰

Perhaps the narrow framing of e-commerce as its own market is the correct one. If consumers buying their retail goods online from Amazon and Walmart are distinct from the consumers who drive to Amazon or Walmart stores (among others) to buy something they want, with little competition across the shopping channels (as well as others such as catalogues or other direct marketing approaches), e-commerce should be treated as a distinct market. However, if changes in one channel (such as price movements, changes in quality provided, service levels, etc.) affect consumer choices in the other channel, it is not valid to act as if Amazon exists independently of brick and mortar retailers. Unfortunately, the academic literature does not provide much in the way of well-identified, rigorous econometric analyses of the degree to which these market channels

²⁷ Amazon's financial statements do not include figures for the net sales by third parties on Amazon. In a letter to Amazon shareholders, Jeff Bezos suggested that third party sales accounted for a little less than 60% of total net sales in 2018. Jeff Bezos, *2018 Letter Shareholders* (2020), <https://www.sec.gov/Archives/edgar/data/1018724/000119312519103013/d727605dex991.htm>.

²⁸ See Walmart Inc., Annual Report (Form 10-K) (Jan. 31, 2020).

²⁹ See LIPSMAN, *supra* note 24.

³⁰ See Melissa Repko, *Walmart Steps up Competition with Amazon by Fulfilling Orders for Third-Party Vendors*, CNBC (Feb. 25, 2020), <https://www.cnbc.com/2020/02/25/walmart-wants-to-make-it-easier-for-third-party-vendors.html>.

interact, leaving it as a mostly open question of how much competition Amazon actually faces.

One interesting study, however, might provide some clues about how much competitive discipline Amazon faces. A 2018 paper by Brian Baugh, Itzhak Ben-David, and Hoonsuk Park examined how consumers changed their electronics purchasing behavior when states required Amazon to collect sales taxes on Amazon purchases.³¹ First, the authors found that consumers were sensitive to the change, reducing their Amazon purchases, especially for higher priced electronic items. Second, they found substantial substitution toward the second largest online electronics retailer (Newegg) which was not required to collect sales taxes by and large due to its limited legal contacts with jurisdictions outside of California. Perhaps most interestingly, the authors found that “heavy” Amazon users were the most sensitive to this cost change, suggesting that Amazon potentially faces competition even for its highest volume users. This implies that even though Amazon would appear to have a tight hold of the supposed e-commerce-specific market, effective price changes of a few percent lead consumers to switch to other online options. Unfortunately, because the paper only examines electronics products, we are left wondering to what degree there is substitution in other product categories. That said, survey evidence suggests that price is a primary driver of Amazon shoppers. In December 2015, 56% of Amazon users indicated that price is “extremely important” with another 24% saying price was “pretty important” to them.³²

This paper does not provide much insight into the extent of competitive rivalry between Amazon and physical retailers. The authors only examine potential substitution

³¹ Brian Baugh, Itzhak Ben-David & Hoonsuk Park, *Can Taxes Shape an Industry? Evidence from the Implementation of the ‘Amazon Tax’*, 73 J. FIN. 1819 (2018).

³² HART RESEARCH ASSOCIATES/PUBLIC OPINION STRATEGIES, CNBC AAES FOURTH QUARTER SURVEY 12 (Nov./Dec. 2015), <https://www.scribd.com/doc/292784115/CNBC-All-America-Economic-Survey-results-December-9-2015>.

to a single brick and mortar retailer (Best Buy) and do not find a statistically significant effect. A related paper, while not examining Amazon, does look at the effect of a similar natural experiment involving the reduction of sales tax on some apparel items in New York City and the coincident effect on the online and catalog sales of a specific retailer's sales to customers in New York City as compared to simultaneous changes to customers in unaffected locales (Connecticut and Massachusetts). That paper found a significant reduction in the retailer's online and catalogue sales that appears to be causal as New York City shoppers substituted to making purchases at physical stores in the city. Again, although this does not directly tell us about whether Amazon competes with brick and mortar stores, it does hint at the competitive dynamic between physical and online retailers.³³

Perhaps a similar natural experiment could be examined based on when Amazon introduced same-day delivery in a handful of markets in 2015.³⁴ Presumably, prior to the availability of same-day delivery, if online and brick and mortar outlets are competitors, one of the reasons a consumer might choose to buy at a physical store is due to impatience. With the introduction of shorter shipping times, the benefit of buying at an actual store is reduced. If non-online retail sales dropped (in relative terms) in markets where Amazon introduced same-day delivery, this would be reasonably strong evidence that online retail outlets and physical retail outlets should be included in the same market. If no such effect is observed, that would be *prima facie* evidence that the two markets are indeed distinct.³⁵ Without such evidence, discussing policies to head off

³³ Yu Jeffrey Hu & Zhulei Tang, *The Impact of Sales Tax on Internet and Catalog Sales: Evidence from a Natural Experiment*, 32 INT'L J. INDUS. ORG. 84 (2014).

³⁴ If data were available, there is potentially even more variation to exploit in this experiment to the extent that same-day delivery was not available for every product.

³⁵ Of course, the intuition presented here makes the *ceteris paribus* assumption regarding the relative price (net of shipping) and quality of the Amazon and other retailers' goods before and after the policy change. In practice, the researcher would need to account for possible changes.

Amazon's supposed monopoly power would seem to be premature at best.

The early 2020 coronavirus experience may present a similar, though potentially more complicated, natural experiment from which we can learn about the contours of what in which Amazon resides. As cities and states adopted stay at home regulations and ordered the closure of physical retail establishments, online retail went largely unaffected. If physical retail sales do not present competitive discipline for Amazon and its online competitors, presumably we should not observe much of a substitution between physical retail sales and online sales. Instead, the physical sales should have largely disappeared altogether. Such a study design would need to account for non-competitive influences impacting online sales, such as expected reductions in income generated by the coronavirus pandemic, as well as exogenous demand shifters (e.g., as individuals bought equipment to transition to work in at-home offices), but these are the kinds of studies that are needed to determine whether e-commerce is its own market; market definition should not be based on intuitive say-so.

On top of these existing (though as yet unknown or at least not rigorously quantified) market dynamics, the extent to which Amazon can exploit consumers and even third party retailers is also potentially limited by entry and expansion in the U.S. market by firms like Alibaba.³⁶ If consumers are really harmed by Amazon somehow favoring its own products over those of third party sellers, a concern raised by a number of critics that has also generated congressional scrutiny,³⁷ Alibaba's model of just providing a sales platform without first party product competition would presumably attract U.S. consumers and third party retailers. Alibaba surely has the technical and

³⁶ See, e.g., Warren Shoulberg, *It's Alibaba, Not Walmart, That Amazon Should Really Be Worried About*, FORBES (June 15, 2020), <https://www.forbes.com/sites/warrenshoulberg/2020/06/15/its-alibaba-not-walmart-that-amazon-should-be-really-worried-about/#65484ee07ddc>.

³⁷ See, e.g., Gilad Edelman, *Amazon Doesn't Favor Its Own Brands—Except When It Does*, WIRED (Nov. 24, 2019), <https://www.wired.com/story/amazon-gating-private-labels-antitrust/>.

financial wherewithal to compete with Amazon if there is a demand for it.

II. MIND YOUR PS AND YOUR QS

In the book *The Great Reversal: How America Gave Up on Free Markets*, Thomas Philippon names a chapter “Bad Concentration, Good Concentration” where he suggests that as Walmart gained market share in the 1980s and 1990s, consumers benefited with lower prices. He attributes this decline in retail prices to, among other things, Walmart’s advances in logistics and supply chain management. “The growth of Walmart provides us with an example of efficient concentration. Its profit margins remain stable or even decline, and most important, prices go down. Consumers benefit from Walmart’s expansion. It is fair to debate and challenge Walmart’s labor and management practices, but there is little doubt that Walmart has been good for U.S. consumers.”³⁸ Philippon uses the Bureau of Economic Analysis’s PCE (Personal Consumption Expenditures) index, which is a price deflator for goods and services purchased by consumers in a given year, relative to the overall consumer price index (CPI) showing that this metric of retail prices was well above the broader CPI from 1960 through the mid-1980s, at which point it declined steadily until about 2005, at which point the ratio flattened.³⁹ Philippon argues that the period of declining retail prices coincides with Walmart’s increase in retail market share,⁴⁰ whereas the flattening portion of the curve matches Amazon’s ascendancy: “We have seen that, as Walmart’s market share increased, retail prices decreased sharply. But the improvement stops in 2005. This coincides with the development of online shopping, and in particular with the growth of Amazon.”⁴¹

Philippon purports to focus on a data driven approach that favors many empirical

³⁸ PHILIPPON, *supra* note 3, at 34.

³⁹ *Id.* at 33.

⁴⁰ *Id.* at 32.

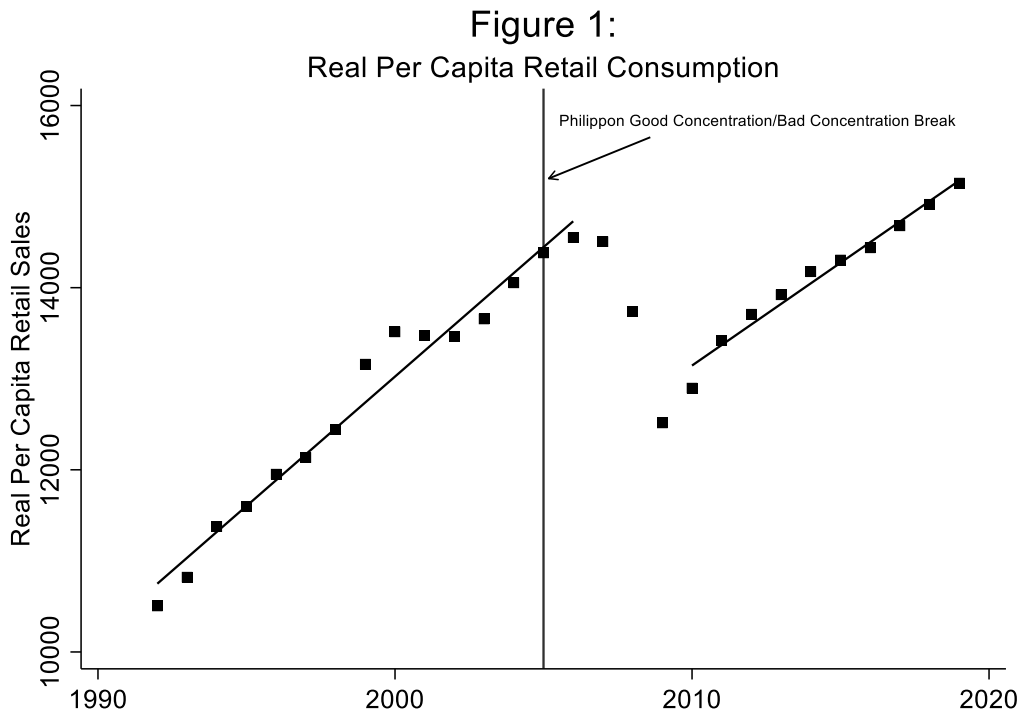
⁴¹ *Id.* at 39.

metrics when examining his argument that firms like Amazon have made markets in the U.S. less competitive and, therefore, have made consumers worse off. As suggested above, Philippon examines prices, as well as profit margins and productivity measures. However, in his Walmart and Amazon (good concentration and bad concentration) example, he ignores one of the best metrics of consumer well-being – consumption. People don’t eat prices; they can’t even hang them on the wall and marvel at them. We care about prices because they affect how much an individual consumes. Further, the prices Philippon examines are only one component of the total price, which includes the cost of acquiring the object (time and effort to go to the store, or the cost of shipping, or the effect of delay, etc.). Ignoring the latter components of total price, while understandable given the lack of systematic data on these aspects, might be misleading. Perhaps it makes more sense to look at how much people are consuming in the various periods of Walmart’s rise and Amazon’s rise.

In Figure 1 below, I use the same PCE index⁴² used by Philippon to deflate the retail sales data provided by Census⁴³ on a per capita basis using Census population data. While Philippon uses 2005 as his “online shopping” break point, the Great Recession (2007-2009) is an obvious confounder. Instead, I break the time series into 1992 (the beginning point for the currently posted retail data from Census) through 2006 and 2010 through 2019.

⁴² U.S. Bureau of Economic Analysis, *Personal Consumption Expenditures*, <https://fred.stlouisfed.org/series/PCE>.

⁴³ U.S. Census Bureau, *Estimates of Monthly Retail and Food Services Sales by Kind of Business: 2020*, <https://www.census.gov/retail/mrts/www/mrtssales92-present.xls>.



As indicated by the graph, retail consumption is trending at basically a comparable rate⁴⁴ in Philippon's Amazon/online shopping period as it was through the 1990s during the period when Walmart generated increasing concentration in the retail market generally. Based on this metric of consumer well-being, it is hard to declare that Walmart's concentration was somehow good for consumers, while Amazon's concentration is somehow bad.

Philippon does suggest that Walmart's gains went primarily to poor people while Amazon's accrue to those from a higher socio-economic class, saying "Walmart created more value for lower-income consumers. Amazon is more valuable for upper middle-class households whose disposable income and opportunity cost of time are relatively high."⁴⁵ Such a claim is based on intuition rather than any data. One can easily think of possible counter claims. For example, for poor individuals lacking reliable and

⁴⁴ Given the limited number of observations, it is not sensible to formally test equality of these trends in a statistical sense.

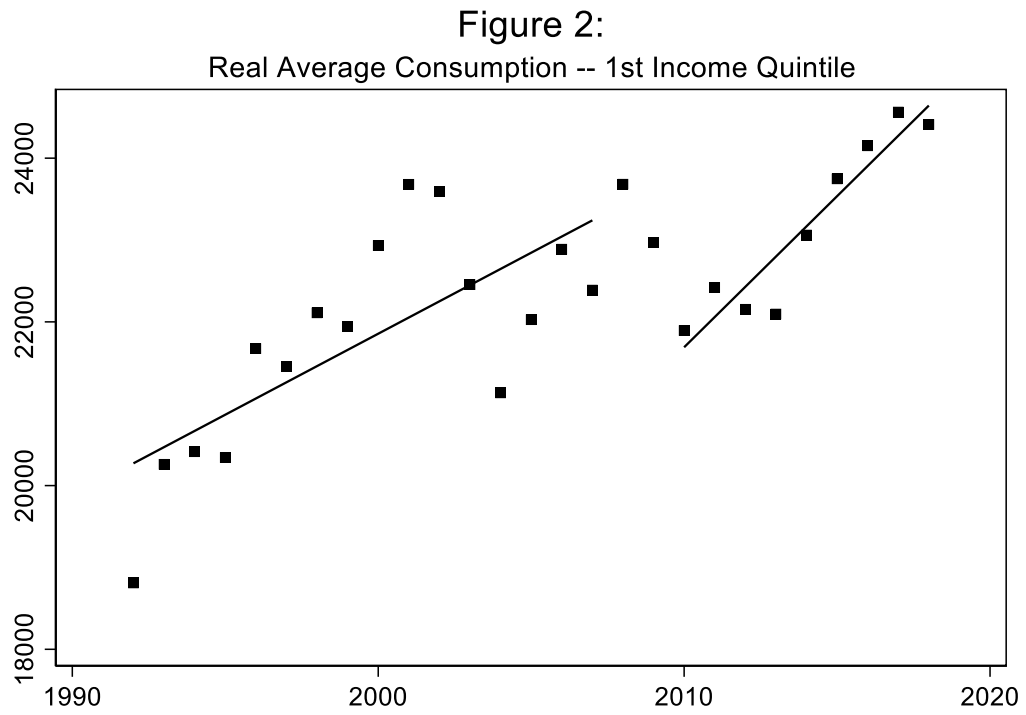
⁴⁵ PHILIPPON, *supra* note 3, at 40.

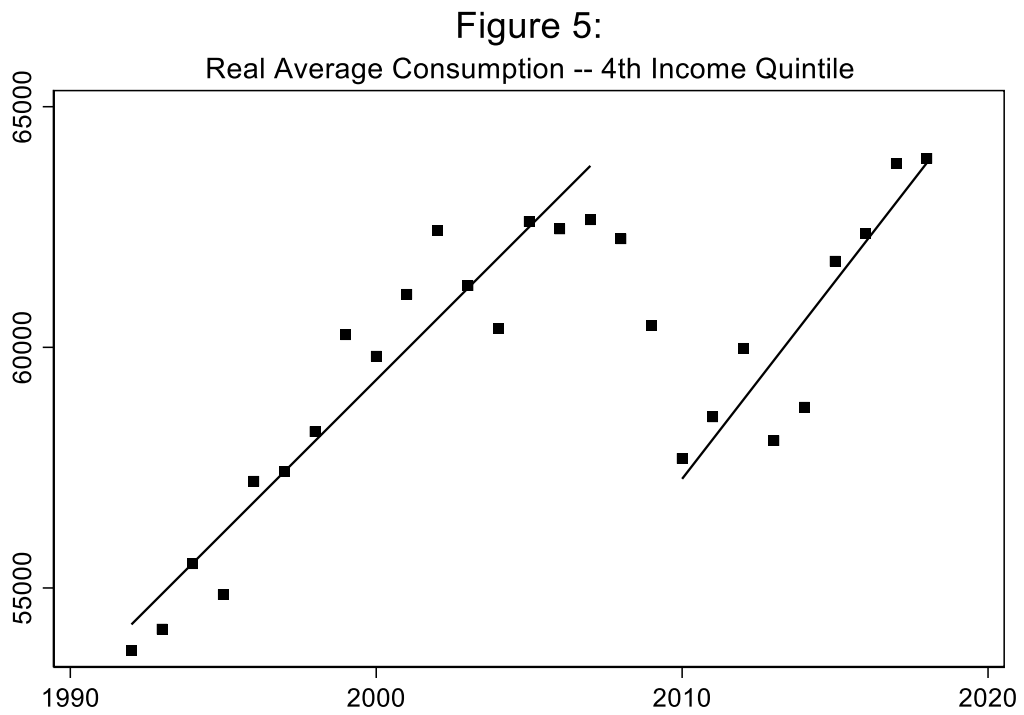
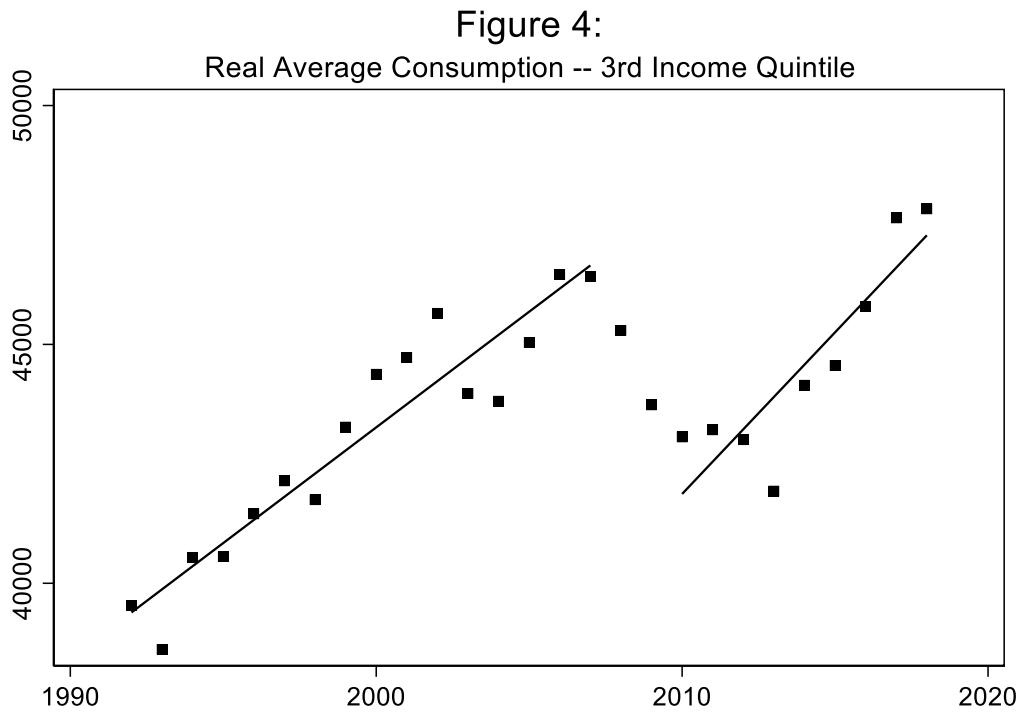
convenient transportation, venturing out to do one's shopping becomes more of a chore than it is for a suburban family loading into its SUV for a Sam's Club run. Similarly, individuals working an inflexible schedule might find it difficult to get to a store during business hours,⁴⁶ whereas a busy white-collar professional might have more control over the particulars of her schedule. On the other hand, the poor may face other impediments to online shopping such as less access to credit cards and less of an ability to secure delivered packages. It is interesting to note, however, given Philippon's assumption regarding Walmart being more valuable for the poor and Amazon being more valuable for richer people, Amazon has made attempts to increase its services for lower income people.⁴⁷

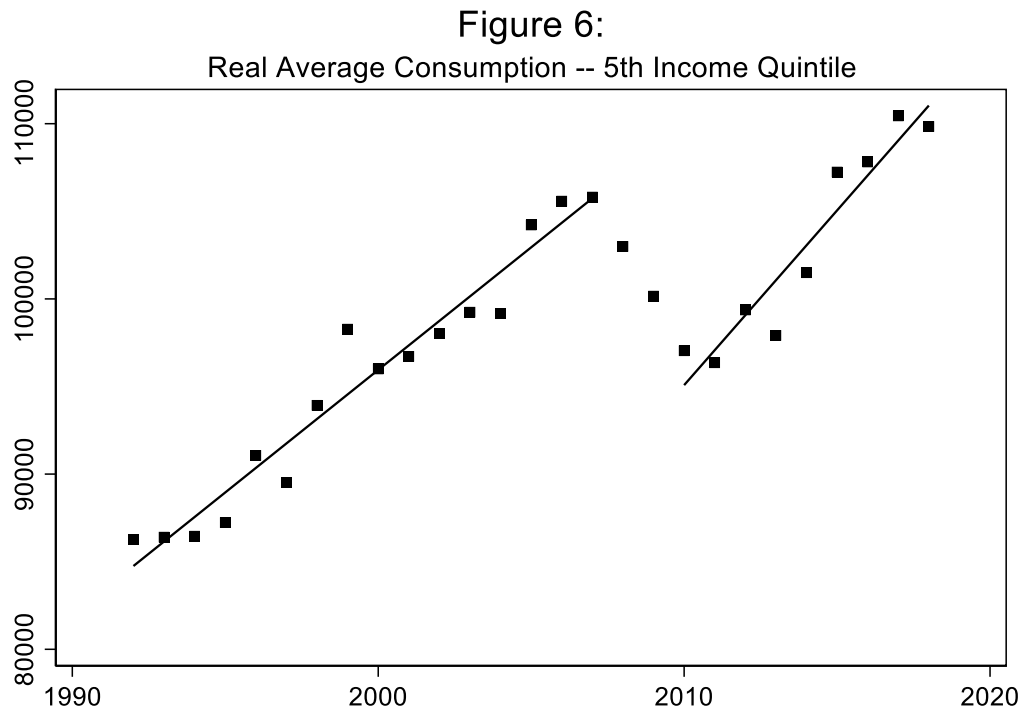
Rather than speculate, it is useful to explore the data. The Bureau of Labor Statistics has a long-running consumer expenditure survey, which asks people how much they spend on various categories of goods and services. In Figures 2-6, I use the average total reported consumption amount, deflated by Philippon's PCE index plotted for the same time periods used above for total per capita retail sales, namely 1992-2006 and 2010 through 2018 (the last available year for the Consumer Expenditure Survey) separately for individuals in each income quintile.

⁴⁶ While many Walmarts are open 24 hours per day, seven days per week, not all are. *See, e.g.,* Kelly Tyko, *Walmart Cuts Hours at 24-Hour Stores and Other Locations Nationwide Starting Sunday Due to Coronavirus*, USA TODAY (Mar. 14, 2020), <https://www.usatoday.com/story/money/2020/03/14/coronavirus-walmart-store-hours-retailer-temporary-change/5052603002/>.

⁴⁷ *See, e.g.,* Derek Thompson, *Amazon's Pivot to Poor People: Amazon Wants To Become Walmart Faster than Walmart Can Become Amazon*, THE ATLANTIC (June 6, 2017), <https://www.theatlantic.com/business/archive/2017/06/amazons-pivot-to-poor-people/529383/>.





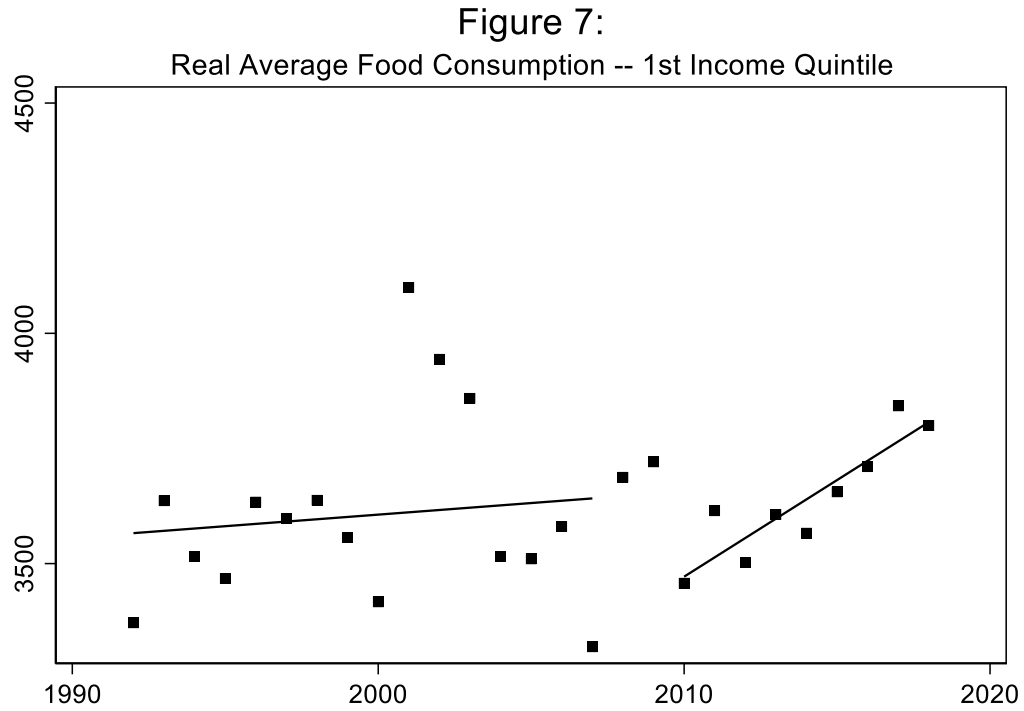


If one were to buy into Philippon's notion that the 1990s through 2005 or so were the period when Walmart was helping poor people and the 2005 plus period is when Amazon was helping well-off people, the consumption data don't provide much support. For all income quintiles, both periods, excluding the 2007-2009 Great Recession, represent increasing trends in real consumption. If anything, the first and second quintile folks (i.e., the relatively poor) have seen a steeper growth in Philippon's Amazon/online shopping period.

The aggregate consumption numbers may be a bit over-broad for the purposes of focusing on the types of goods Walmart and Amazon sell; to mitigate this concern, in Figures 7-10, I examine the consumption data for only the first income quintile respondents by various categories of consumption to better isolate any possible Walmart/Amazon effects. In each case, I again deflate by the PCE index.⁴⁸

⁴⁸ While using sector-specific price indexes would provide even better indications of consumption quantity, I continue to use the PCE index for continuity's sake. Using sector-specific deflators yields comparable trends.

In figure 7, food expenditures are used. In the Amazon period, real food consumption increases at a faster rate than during Philippon's Walmart period.



For clothing, shown in Figure 8, real consumption among those in the first quintile of income declines at a similar rate in the Amazon period to that observed during the Walmart period.

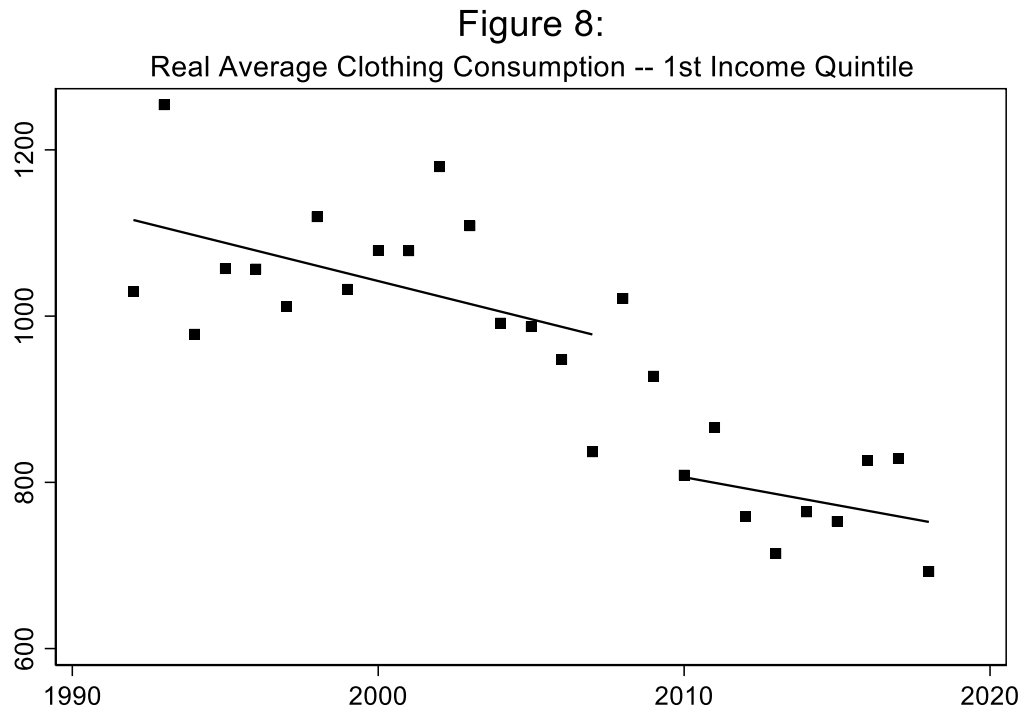


Figure 9 examines real consumption of personal care products among those in the first quintile of income. The upward trend in the Amazon period exceeds that observed in the Walmart period.

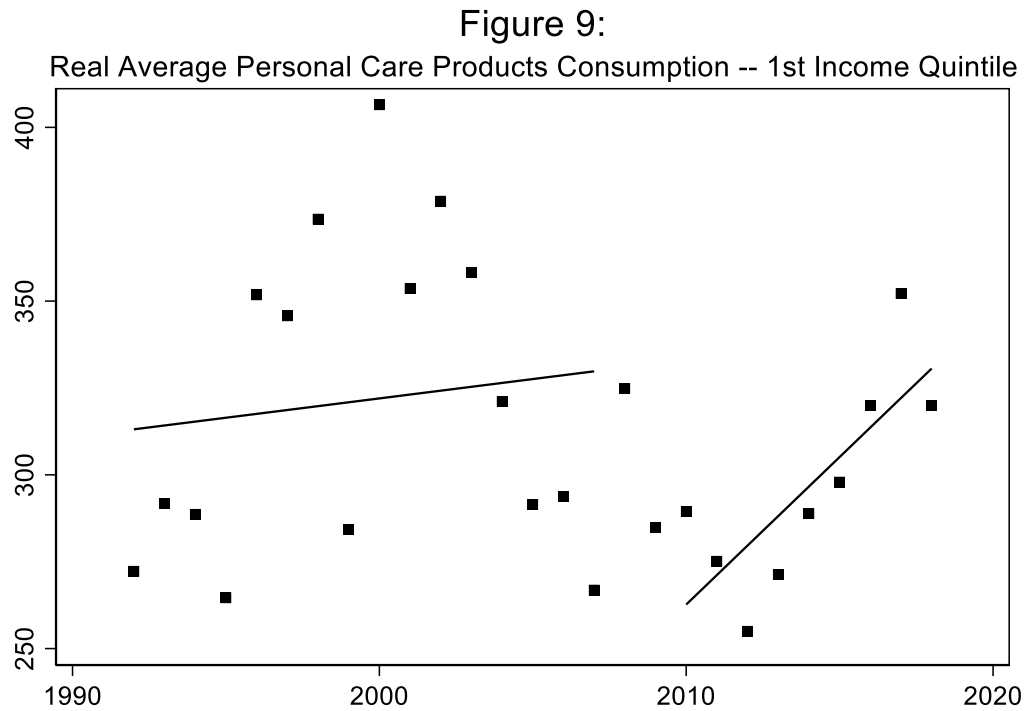
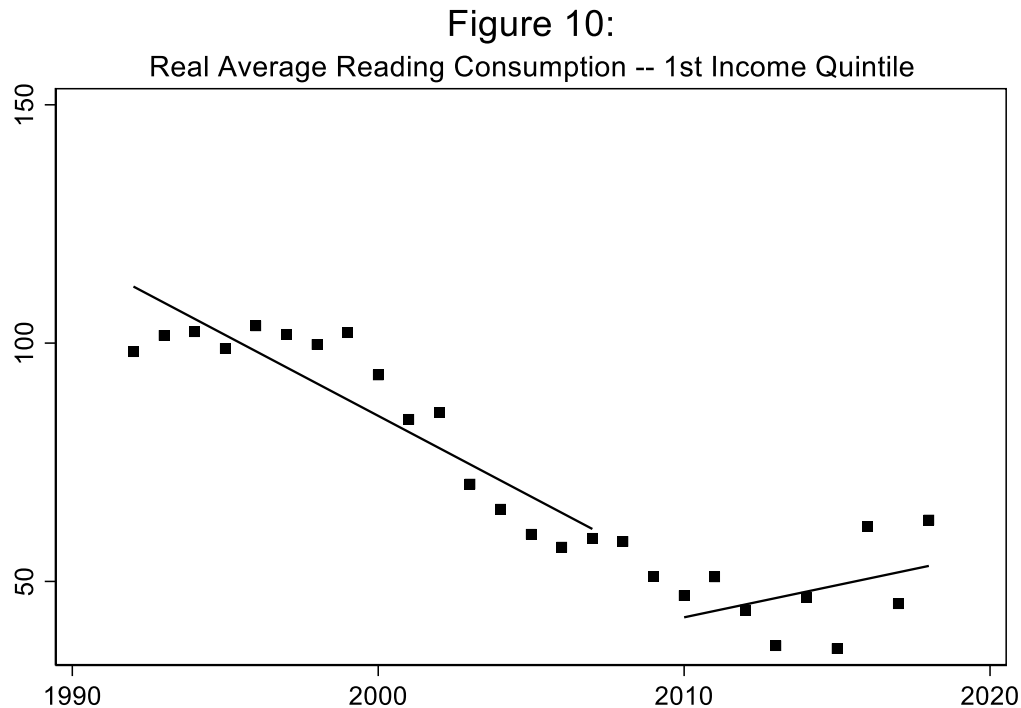


Figure 10 plots deflated expenditures on reading products. In this case, while the reading consumption metric declined steadily in the Walmart period, it rises during Amazon's ascendancy.



By these consumption metrics, with the exception of clothing purchases, it would appear as if the Amazon period has actually been relatively good for those at the bottom of the socio-economic ladder. Consumption, which is central to any notion of consumer welfare, has improved as Amazon has increased its market share. Now I do not make any claim to causality. That is, it is not possible short of better data (used in a design like that suggested above where one examines various shocks to the availability of various Amazon and/or Walmart products and services) to assess whether Amazon or Walmart, through any channel including increasing concentration, has led to, in a causal sense, any of the trends depicted in the figures above.

Likewise, even if we were confident that such a causal relationship existed, it is impossible to know how the mechanism works—is it because of a reduction in prices

faced by the poor, is it because the total cost (explicit price plus time and convenience costs) declined, is it because the availability of products was better suited to the tastes of people in this income category, is it because Amazon increases the income of the poor through better jobs or by providing an easier way to sell products (through the Amazon market place), is it some mix of each of these, or something else altogether? The only point made with these data points is that Philippon's assumption that Amazon only or even primarily benefits the well-off is not obviously true, and there is at least some evidence to suggest it is false.

Philippon continues to focus on price differences when comparing the supposedly worse regulatory environment of the United States to various European exemplars.⁴⁹ In the introductory chapter of his book, Philippon uses broadband internet, mobile phones, and plane tickets as illustrative examples of how the United States has done worse than Europe, implying that this is because competition has declined in the United States and this "lack of competition is explained largely by policy choices,"⁵⁰ including weaker antitrust enforcement. Although he notes that all proxies for competition are imperfect, and notes particular problems in examining price having to do with taxes and exchange rate comparisons, Philippon sticks to price, profit rates, and market shares as his metrics for indicating the welfare of consumers.

In each of these cases, however, it is easy to imagine aspects of welfare that are poorly proxied by price. A cheaper 25 Mbps broadband connection might be inferior to a gigabit connection, at least for some consumers, and unreliable service at either speed might be shunned for a slower but steadier connection. Mobile phones come bundled with all sorts of services (subsidized streaming subscriptions, hardware rebates, beneficial contract terms, etc.) that may be favored by some consumers even if they lead

⁴⁹ See PHILIPPON, *supra* note 3, at 5-10.

⁵⁰ *Id.* at 9.

to higher mobile phone subscription costs. Ryan Air or French Bee might offer lower base ticket prices, but individuals may prefer higher cost options that allow for marginally more pleasant flights.

Once again, price comparisons might not be the best approach when trying to proxy for subjective consumer welfare when products are multi-dimensional and heterogeneous. Although not perfect, examining outcome metrics may shed more light when comparing the attractiveness of regulatory regimes.

With regard to broadband, Philippon notes the higher average monthly cost of broadband in the United States compared to Germany or France in 2017. More recent data (2019) from the same source tells the same story with the average cost (in U.S. dollar terms) of the surveyed broadband packages coming in at \$28.74 for Germany, \$27.81 for France, with a whopping \$50 for the United States.⁵¹ What Philippon does not note, however, is that the story is reversed when the cost per megabit per month is examined with Germany costing \$0.50, France at \$0.49, and the United States coming in at about half the cost with a per megabit per month cost of \$0.26. While these numbers do not tell us conclusively where consumers are “better off,” they do put a wrinkle in Philippon’s story. It might also be interesting to note that, perhaps predictably, U.S. consumers are much more likely to have higher speed broadband plans than either of those European countries. According to OECD data for 2019, while only 11% and 12% of residents in Germany and France respectively have broadband plans with speeds between 100 and 1,000 Mbps, 21% of U.S. residents do.⁵² Data on average speed of connection by country in 2017 tell a similar story with the United States notching 19 Mbps, followed by Germany

⁵¹ Cable.co.uk, *The Cost of Fixed-Line Broadband in 206 Countries*, <https://www.cable.co.uk/broadband/pricing/worldwide-comparison/>.

⁵² OECD, *Fixed Broadband Subscriptions Per 100 Inhabitants, Per Speed Tiers* (Dec. 2019), <https://www.oecd.org/sti/broadband/5.1-FixedBB-SpeedTiers-2019-12.xls>.

at 15 Mbps, with France bringing up the rear at 11 Mbps.⁵³ These numbers, however, are only inputs to the ultimate consumption question (which itself is an input, albeit an important one, to the consumer welfare question). One estimate of broadband consumption suggests that the broadband consumption of the average internet user in the United States approaches 2 terabytes annually, whereas Germany and France barely get above 0.5 terabytes per user.⁵⁴

In his analysis of the mobile phone comparison between the United States and France (in a chapter titled “How European Markets Became Free” presumably in contrast to the book’s subtitle “How America Gave Up on Free Markets”), Philippon presents a striking picture where the price of a telecom subscription in France was 10-20% higher than in the United States until 2011, when, as Philippon tells it, Free Mobile obtained a 4G license and “became a significant competitor for the incumbents, making an immediate impact. Until 2011, French consumers paid between €45 and €65 per month for their smart-phone plans, with limited data and a few hours of talk time. Free offered unlimited talk, unlimited SMS and MMS messages, and unlimited data with a speed reduction after 3GB for €20.⁵⁵” By 2014, Philippon notes that France went from having telecom prices that were 15% higher than the United States to 25% cheaper. In terms of explaining the institutional mechanisms behind this reversal, Philippon argues that European regulators are tougher, more independent, and less prone to lobbying than their counterparts in the United States.⁵⁶

⁵³ AKAMAI, STATE OF THE INTERNET Q1 2017 REPORT (2017), <https://www.akamai.com/fr/fr/multimedia/documents/state-of-the-internet/q1-2017-state-of-the-internet-connectivity-report.pdf>.

⁵⁴ Bhaskar Chakravorti, Ajay Bhalla & Ravi Shankar Chaturvedi, *Which Countries Are Leading the Data Economy?* HARV. BUS. REV. (Jan. 24, 2019), <https://hbr.org/2019/01/which-countries-are-leading-the-data-economy>.

⁵⁵ PHILIPPON, *supra* note 3, 140-141.

⁵⁶ *Id.* at 142-143.

As suggested before, however, prices tell only a limited, and potentially misleading story. With my current mobile phone plan, which admittedly costs lots, I have bundled access to at least one streaming service that my kids use, a host of internet tools that allow me to shut off that streaming service and their phones when the kids annoy me, and it includes multiple discounts on replacement phones that I buy for the same annoying kids. How should all of that be factored into adjusting the price of my subscription to compare it with Free Mobile's plan which, as best as my limited French (which consists of being able to say "hon hon hon" and "Gerard Depardieu") can tell me, includes no bundled streaming service but does include a better allowance for international calls and might include some kind of phone hardware discount?

A potential way forward, once again, is to look at quantity or usage metrics. A phone plan that provides more value will be used by more people and will be used more intensively on average. That is, higher quantity is a useful proxy for higher consumer welfare. OECD data on mobile broadband subscriptions in 2019 indicates that people in the United States have 149 mobile broadband subscriptions per 100 inhabitants, whereas France has 94 and Germany has 87. Only Finland (155) and Estonia (158) have a higher rate than the United States in Europe, and the only other country in the dataset that exceeds the United States is Japan at 179.⁵⁷ At least on the extensive margin, the usage in the United States appears inconsistent with the story painted by Philippon. As for the intensive margin, in a month, a U.S. subscriber uses about 3.1 GB of mobile data. This exceeds the 1.8 GB number for Germany, but it lags the 3.5 volume for France.⁵⁸ However, recalling that there are almost 1.5 mobile broadband subscriptions for each inhabitant in the U.S. as compared to 0.94 for France suggests that, on a per person basis, the United

⁵⁷ OECD, *Historical Fixed Broadband Subscriptions Per 100 Inhabitants*, <https://www.oecd.org/sti/broadband/1.5-BBPenetrationHistorical-Data-2019-12.xls>.

⁵⁸ OECD, *MEASURING THE DIGITAL TRANSFORMATION: A ROADMAP FOR THE FUTURE* 101 (2019).

States leads France 4.6 GB to 3.3 GB.⁵⁹ In either case, the usage metrics point in a different direction than Philippon's price comparison.

As for Philippon's last example, airlines, while not part of the digital economy, a similar critique of Philippon's analysis can be made. Philippon notes a large increase in the concentration of the U.S. airline industry between 2010 and 2020⁶⁰ and also includes a direct comparison of prices and profitability of the U.S. industry with the European market. He writes, "airlines are probably among the worst offenders. The Economist noted in 2017, 'Airlines in North America posted a profit of \$22.40 per passenger last year; in Europe the figure was \$7.84 [footnote omitted].' Around 2010, the net profit per passenger was similar in both regions, but since then, prices have increased more in the United States than in Europe."⁶¹

Illuminating price metrics are perhaps most elusive in the airline industry. Are bags bundled in the price? How about beer and pretzels? How many miles do I get for the flight and what can I trade them in for? What are the flight change rules? Can I watch the newest superhero movie or am I stuck with a half filled in Sudoku grid to pass the time? The variables that require adjustments in coming up with a sensible price comparison are many and life is short. Luckily, as in the previous analyses, we can look to quantity metrics as a kind of catch all proxy. Despite being so expensive according to Philippon, the U.S. domestic market is the largest single market in terms of air travel passengers as of 2018, with almost 600 million passengers.⁶² In terms of total passengers flown, both domestically and internationally, the United States again leads the world

⁵⁹ Multiplying the average data used per month per subscriber by the average number of subscriptions per resident yields a per resident data usage figure.

⁶⁰ PHILIPPON, *supra* note 3, at 37.

⁶¹ *Id.* at 7.

⁶² INT'L AIR TRANSP. ASSOC., WORLD AIR TRANSPORT STATISTICS 5 (2019) [hereinafter IATA], <https://www.iata.org/contentassets/a686ff624550453e8bf0c9b3f7f0ab26/wats-2019-mediakit.pdf>.

with almost 800 million,⁶³ as compared to France with 140 million and Germany with 171 million.⁶⁴ These counts are not perfect quantity metrics to the extent that there presumably needs to be some control for population, though the punchline does not change on a per capita basis with the United States coming in at 2.4 passengers per person, with France and Germany's measure at around 2.1. Beyond the population normalization issue, these passenger counts, and miles flown data lump together flights by foreign airlines in the United States and U.S. airlines in other countries. That said, in terms of both measures, four of the top five airlines are U.S. firms.⁶⁵ While there is no ideal quantity measure for this market, it is perhaps surprising that so much flying is done with airlines that Philippon suggests are so expensive in relative terms.

As a general matter, quantity indicators are at least as important as price metrics when making inferences about consumer welfare, and for a number of reasons, quantity might be superior to price when it comes to judging the competitiveness of a market. Adjustments for quality, convenience, selection, and a host of other factors are necessary when judging consumer welfare effects based on price, but these adjustments are always difficult and are often not possible, especially when subjective valuation is taken seriously. Quantity metrics, on the other hand, effectively have these adjustments already baked in. Of course, when making causal inferences about the effect of some public policy decision or firm choice on quantity, it is necessary to control for other shifters of supply and demand in a rigorous way, but the same is true when examining price. At a minimum, price should not be used to the exclusion of quantity when making claims about what is good for consumers.

⁶³ The U.S.'s measure of total distance flown is likewise tops in the world. See IATA, *supra* note 62, at 18.

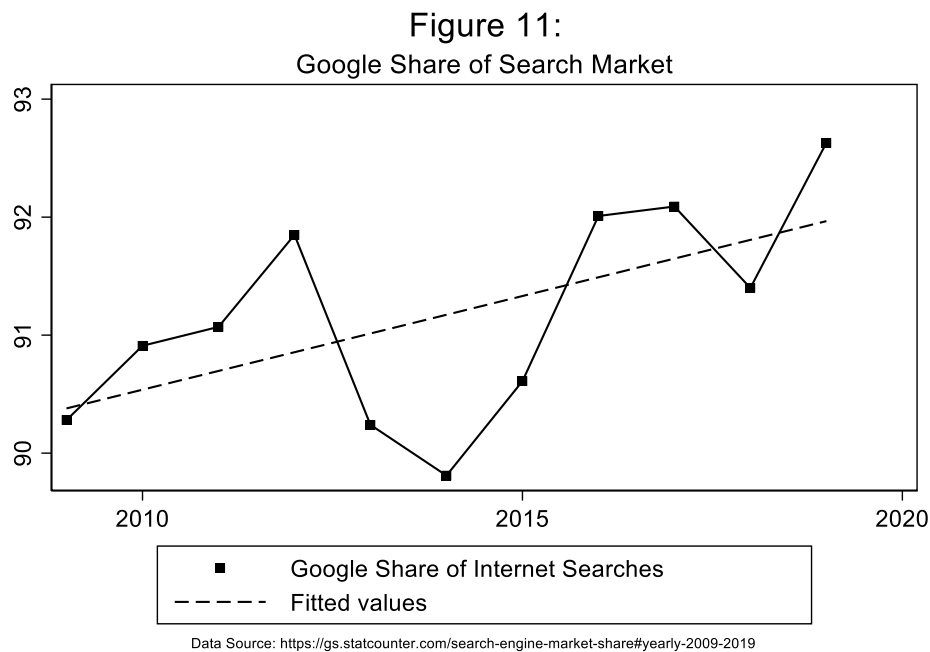
⁶⁴ *Id.* at 31-33.

⁶⁵ *Id.* at 19-20.

III. GREAT GOOGLEY MOOGLY

Many of the earlier issues can be raised with respect to the concentration claims about Google, especially in terms of what is the relevant market. After briefly examining that issue, I consider the claim that Google can leverage its power in the search market to gain uncompetitive advantages in related markets.

It is generally assumed that Google has a massive advantage in the internet search market. By most counts, Google accounts for something like 90% of internet searches if not more.⁶⁶ Google's number in the United States might be as high as 95%. The next three most popular search engines, Bing, Yahoo!, and Baidu might make up a total of 5% of the worldwide market. As imposing as those numbers are, as shown in Figure 11, Google's share is actually on an upward trend over the last decade, though, presumably, such a trend cannot go on forever.



⁶⁶ See, e.g., StatCounter, *Search Engine Market Share Worldwide*, <https://gs.statcounter.com/search-engine-market-share> which indicated google accounted for almost 92% of worldwide internet searches in June 2020.

All of that said, it is worth considering whether other forms of information search online should actually be included in the discussion of Google's dominance. For example, in a 2018 poll, when asked where they start shopping online, two-thirds of respondents said something other than "a search engine such as Google," with 44% indicating they started with Amazon, 10% saying they start with a specific retailer's website, 6% indicating a product brand's website, and 5% starting with a non-Amazon online market place like eBay.⁶⁷ When shoppers have a specific product in mind, they appear to be even less likely to start their search on Google.⁶⁸

Searching for information outside of the search engine framework appears to extend beyond shopping as well. When asked about where they get information about political candidates, less than half of respondents in a 2018 poll said they used a search engine such as Google, mentioning social media sites more often, and including a sizable dose of other online sources such as newspaper, television and radio station, and magazine websites, as well as blogs.⁶⁹ A 2018 poll likewise found Google search lagging behind other online sources when people were looking for information about breaking news, with only 15% of respondents mentioning a search engine.⁷⁰ Further, the standard search engine market share numbers ignore peoples use of other websites and applications to search for information (e.g., Yelp, Wikipedia, etc.). All in all though, even with these adjustments, Google would likely continue to have a formidable lead in the

⁶⁷ NPR/MARIST, POLL RESULTS JUNE 2018: DIGITAL ECONOMY 13 (2018), http://maristpoll.marist.edu/wp-content/misc/usapolls/us180423_NPR/NPR_Marist%20Poll_Tables%20of%20Questions_May%202018.pdf#page=2.

⁶⁸ See, e.g., Greg Magana, *Amazon Rules the Product Search Process*, BUS. INSIDER (Mar. 20, 2019), <https://www.businessinsider.com/online-shoppers-rely-heavily-on-amazon-2019-3>.

⁶⁹ Associated Press/MTV. MTV/AP-NORC Youth Political Pulse Survey, Sep, 2018 [survey question]. 31115630.00018. AP-NORC Center for Public Affairs Research [producer]. Cornell University, Ithaca, NY: Roper Center for Public Opinion Research, iPOLL [distributor], accessed Jul-25-2020.

⁷⁰ Pew Research Center for the People & the Press. Pew Research Center for the People & the Press Poll, Feb, 2018 [survey question]. 31115098.00065. GfK Knowledge Networks [producer]. Cornell University, Ithaca, NY: Roper Center for Public Opinion Research, iPOLL [distributor], accessed Jul-25-2020.

way people search electronic sources for information.

Among the more important concerns raised about Google's dominant position in search is whether it can leverage that position to gain advantages in other markets. Clearly, this concern was raised in the European Commission's Google Shopping case which resulted in a €2.4 billion fine⁷¹ and is also central in the EC's Google AdSense case which resulted in a €1.49 billion fine.⁷² Rather than re-litigate those cases, which would involve much more than a book chapter allows, I raise the question of why. Why, with its search dominance and its feared ability to extend its reach in related markets, why has Google not done so in some pretty obvious instances where it should have if it could have?

Perhaps the most salient in the midst of the 2020 coronavirus epidemic, when everyone has retreated to working remotely, meeting, teaching, and learning through videoconferencing programs, why didn't Google get a stranglehold on a market that will surely only grow in coming years. Despite already being integrated in Gmail and Google Calendar—and given how suddenly huge numbers of people were sent scrambling for information on which video-conferencing programs to use on short notice—Google Meet (formerly Google Hangouts) has barely made a dent in the videoconferencing market. By one measure, Google Meet/Hangouts has about 1% of the videoconferencing market, badly trailing Zoom, GoToWebinar, and Cisco Webex.⁷³ The shift to videoconferencing should have been a layup for Google if its critics are right that it can leverage its search position to take over other profitable markets, and, yet, Google Meet has gone nowhere.

⁷¹ Press Release, European Comm'n, Antitrust: Commission Fines Google €2.42 Billion for Abusing Dominance as Search Engine by Giving Illegal Advantage to Own Comparison Shopping Service (June 27, 2017), https://ec.europa.eu/commission/presscorner/detail/en/IP_17_1784.

⁷² Press Release, European Comm'n, Antitrust: Commission Fines Google €1.49 Billion for Abusive Practices in Online Advertising (Mar. 20, 2019), https://ec.europa.eu/commission/presscorner/detail/en/IP_19_1770.

⁷³ See Datanyze, *Market Share Category: Web Conferencing*, <https://www.datanyze.com/market-share/web-conferencing--52>.

CONCLUSION

Concentration in the digital economy in the United States has sparked loud criticism and spurred calls for wide-ranging reforms. These reforms include everything from increased enforcement of existing antitrust laws, such as challenging more mergers and breaking up firms, to an abandonment of the consumer welfare standard.⁷⁴ Critics cite corruption⁷⁵ and more systemic public choice problems,⁷⁶ while others invoke the populist origins of antitrust to slay the digital Goliaths.⁷⁷ On the other side, there is skepticism regarding these arguments.⁷⁸ This chapter continues much of that skepticism.

⁷⁴ See, e.g., Steinbaum & Stucke, *supra* note 21.

⁷⁵ See, e.g., David Dayen, *Fiona, Apple, and Amazon: How Big Tech Pays to Win the Battle of Ideas*, THE AMERICAN PROSPECT (July 20, 2020), <https://prospect.org/power/fiona-apple-amazon-how-big-tech-pays-to-win-battle-ideas/>; Daisuke Wakabayashi, *Big Tech Funds a Think Tank Pushing for Fewer Rules. For Big Tech*, N.Y. TIMES (July 24, 2020), <https://www.nytimes.com/2020/07/24/technology/global-antitrust-institute-google-amazon-qualcomm.html>.

⁷⁶ See, e.g., PHILIPPON, *supra* note 3, at 153-206.

⁷⁷ See, e.g., Khan, *supra* note 18, at 739-44; MATT STOLLER, GOLIATH: THE 100-YEAR WAR BETWEEN MONOPOLY POWER AND DEMOCRACY (2019).

⁷⁸ See, e.g., Joshua Wright, Elyse Dorsey, Jonathan Klick & Jan M. Rybnicek, *Requiem for a Paradox: The Dubious Rise and Inevitable Fall of Hipster Antitrust*, 51 ARIZ. ST. L.J. 293 (2019).

Innovation in the United States and Europe

Jan M. Rybníček

INTRODUCTION

We are living in a time of rapid and exciting technological innovation. That innovation has driven economic growth, job creation, productivity, and human progress around the world. Significant levels of investment and entrepreneurship have fueled innovation across a growing and vibrant digital economy, and increasingly that innovation is encroaching on traditional economies as well. Entrepreneurs within well-established firms and fledgling startups compete intensely to introduce new business models and to develop better products and services that bring important benefits to consumers, workers, and businesses. Many of these innovations have become part of everyday life, and at times can easily be taken for granted, but their impact on our lives is no less clear and the ecosystem that enables their creation no less critical to preserve.

E-commerce marketplaces have created new opportunities for buyers and sellers to transact and have given local businesses broader reach. Social media platforms have allowed individuals to interact and distribute information more easily. The sharing economy has disrupted stagnant old industries to bring better and more affordable services to consumers while creating new means for individuals to generate income. Telecommunications equipment manufacturers have developed new products that make home- and work-life more productive and enjoyable in ways unimaginable two decades ago. Online advertising technology has allowed businesses to better target their ad dollars while funding a suite of free services such as email, online mapping tools, messaging apps, online search engines, and video sharing. Video streaming services have added new avenues for developing and distributing content to consumers. And this innovation continues as areas such as artificial intelligence and machine learning—once thought distant futures—become mainstream parts of innovation programs and likely

core features of the next wave of products and services.¹

But the innovation that has created and grown the digital economy has not taken place equally across all parts of the globe. The unequivocal global leader in innovation is the United States. The United States is where most of the world's leading innovators have taken root and grown to prominence. It also is where the next wave of innovators are laying the foundations to be future disrupters and industry leaders. By contrast, Europe has struggled to develop a successful innovation culture and to promote the types of technological changes that ultimately have a widespread and positive impact on society. Put plainly, Europe is at an innovation deficit.² The reasons for this disparity no doubt are complex. Creating a climate for innovation requires the right combination of several factors, including an effective business environment that promotes entrepreneurship and risk-taking, a balanced regulatory environment that promotes competition and trade, and a strong public sector influence that fosters public-private partnerships and targeted innovation objectives.³ Across a variety of measurements, the United States appears to have been more successful to date in developing these characteristics to create an ecosystem that more effectively promotes innovation than have its counterparts across the Atlantic Ocean.

But America's innovation successes and, in particular, the meteoric growth of the

¹ For more on AI and Machine Learning, see Ai Deng, *Algorithmic Collusion and Algorithmic Compliance: Risks and Opportunities*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

² See, e.g., Larry Downes, *Europe's Innovation Deficit Isn't Disappearing Any Time Soon*, WASHINGTON POST (June 8, 2015), <https://www.washingtonpost.com/news/innovations/wp/2015/06/08/europes-innovation-deficit-isnt-disappearing-any-time-soon/>; Matti Huuhtanen, *Why Europe Isn't Creating Any Googles or Facebooks*, BUSINESS INSIDER (Sept. 22, 2015), <https://www.businessinsider.com/ap-why-europe-isnt-creating-any-googles-or-facebooks-2015-9>; *From Clout to Rout*, THE ECONOMIST (June 30, 2016), <https://www.economist.com/business/2016/06/30/from-clout-to-rout>.

³ See generally Stephen Ezell & Philipp Marxgut, *Comparing American and European Innovation Cultures*, INFO. TECH. & INNOVATION FOUND. 157 (2015), <http://www2.itif.org/2015-comparing-american-european-innovation-cultures.pdf>; ROBERT D. ATKINSON, INFO. TECH. & INNOVATION FOUND., UNDERSTANDING THE U.S. NATIONAL INNOVATION SYSTEM, 2020, 15 (2020), <https://itif.org/sites/default/files/2020-us-innovation-system.pdf>.

most successful U.S. tech companies, have not come without detractors. The success of U.S. tech companies both at home and abroad has brought increased criticism and scrutiny by lawmakers and regulators.⁴ Concerns about perceived increases in industry concentration, alleged systematic strategies to acquire nascent rivals to forestall future competition, and supposed rampant exclusionary and predatory conduct by dominant firms have all forced a reexamination of the U.S. antitrust laws and raised questions about whether the ineffectiveness of those laws has allowed companies to stifle competition and innovation and harmed society overall.⁵ As a result, policymakers are grappling with difficult questions about how to promote competition and innovation in the modern economy.

It is of course appropriate to take stock of laws to ensure they are achieving their intended goals and to implement reforms where they are not. But how best to structure these rules to prohibit anticompetitive conduct while permitting procompetitive conduct has inherent tradeoffs.⁶ As the evidence of widespread competitive harm is debated and proposals to reform the U.S. antitrust laws are considered, policymakers should not lose sight of the positive developments that have arisen under the current innovation culture

⁴ See, e.g., MAJORITY STAFF OF H. COMM. ON THE JUDICIARY, 116TH CONG., INVESTIGATION OF COMPETITION IN DIGIT. MKTS. 150–55 (2020) [hereinafter HOUSE MAJORITY ANTITRUST REPORT], https://judiciary.house.gov/uploadedfiles/competition_in_digital_markets.pdf; COMPETITION & MARKETS AUTHORITY, ONLINE PLATFORMS AND DIGIT. ADVERT., FINAL REPORT (2020), https://assets.publishing.service.gov.uk/media/5efc57ed3a6f4023d242ed56/Final_report_1_July_2020_.pdf; STIGLER COMM. ON DIG. PLATFORMS, STIGLER CTR., FINAL REPORT (2019), <https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf>; DIRECTORATE-GENERAL FOR COMPETITION, EUR. COMM'N, COMPETITION POLICY FOR THE DIGITAL ERA (2019), <https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf>; AUSTL. COMPETITION & CONSUMER COMM'N, DIGITAL PLATFORMS INQUIRY FINAL REPORT (2019), <https://www.accc.gov.au/publications/digital-platforms-inquiry-final-report>.

⁵ See Jonathan Klick, *Is the Digital Economy Too Concentrated?*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020); John M. Yun, *Potential Competition, Nascent Competitors, and Killer Acquisitions*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020); Joshua D. Wright, Elyse Dorsey, Jonathan Klick, & Jan M. Rybnicek, *Requiem for a Paradox: The Dubious Rise and Inevitable Fall of Hipster Antitrust*, 51 ARIZ. ST. L.J. 293 (2019).

⁶ See, e.g., Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1 (1984) (describing the challenges in identifying the welfare implications of certain business conduct and determining what conduct should be permitted because it is procompetitive versus what conduct should be condemned as anticompetitive).

and inadvertently undermine a system that is the envy of the world.

That is not to say that the U.S. system is perfect—far from it. There are legitimate complaints that the U.S. system lacks focus and is innovating in the wrong areas, and thus is squandering an opportunity to harness its capabilities to bring about a technological revolution that is commensurate with its potential.⁷ But in improving the innovation focus of the United States, it would be counterproductive to undermine the very features that have made it successful and give it future promise.

The U.S. system today excels at allowing startups to find capital to support budding ideas that may become the next great technology. It endorses large firms that have run the gauntlet of competition with success, reinvesting their earnings and expanding the markets in which they compete. It cherishes the rule of law and promises well-defined antitrust laws that protect against conduct that is anticompetitive while allowing procompetitive conduct to flourish. It is this vigorous competition—promoted by the antitrust laws—that has led entrepreneurs to develop new ideas, business models, and has motivated capital to take risks on them.

But the pressure to remake the U.S. antitrust laws is significant and has led to reform proposals that go well beyond merely increasing antitrust agency resources and encouraging greater enforcement on the margin. They entail significant changes to our modern antitrust framework. Some have called for making it more difficult for large companies to acquire startups.⁸ Others have sought to shift the burden of proof to

⁷ See, e.g., Derek Thompson, *Where's My Flying Car?*, ATLANTIC, Jan.–Feb. 2020, <https://www.theatlantic.com/magazine/archive/2020/01/wheres-my-flying-car/603025/>; Marc Andreessen, *It's Time to Build*, ANDREESSEN HOROWITZ (Apr. 19, 2020), <https://a16z.com/2020/04/18/its-time-to-build/>; ATKINSON, *supra* note 3.

⁸ HOUSE MAJORITY ANTITRUST REPORT, *supra* note 4, at 387–88, 392–94; Jonathan B. Baker et al., Joint Response to the House Judiciary Committee on the State of Antitrust Law and Implications for Protecting Competition in Digital Markets 14 (2020); see also Lauren Hirsch, *Elizabeth Warren's Antitrust Bill Would Dramatically Enhance Government Control Over the Biggest US Companies*, CNBC (Dec. 7, 2019 10:00 AM), <https://www.cnn.com/2019/12/07/warrens-antitrust-bill-would-boost-government-control-over-biggest-companies.html>.

defendants so that the government can more easily prevail in antitrust challenges in court.⁹ Still others are keen to force successful companies to share the key physical and digital infrastructures they have developed through their own hard work and determination in order to help rivals compete.¹⁰ Maybe most dramatically, some have proposed doing away with focusing antitrust on consumer welfare—the lodestar of the U.S. antitrust laws—in order to use antitrust enforcement to achieve broader policy goals.¹¹

These proposals seem intent on recasting antitrust law in the image of European competition policy, which places far less faith in the market and far more control in the hands of regulators. While the regulatory environment is but one component of a complex system that promotes innovation, suddenly altering a legal framework developed deliberately over decades through case-by-case experience by enacting dramatic reforms presents a significant risk of undermining a system that has outperformed its counterparts around the world and dampening the incentive to invest, innovate, and compete.

This chapter explores investment, entrepreneurship, and innovation in the United States and Europe and takes stock of the two regions’ relative performance in encouraging technological change. Although there is no single perfect metric for

⁹ HOUSE MAJORITY ANTITRUST REPORT, *supra* note 4, at 387–88, 391; Baker et al., *supra* note 8, at 14; Consolidation Prevention and Competition Promotion Act, S.307, 116TH CONG. (2019); *see also* New Release, Klobuchar Introduces Legislation to Deter Anticompetitive Abuses (Mar. 10, 2020), <https://www.klobuchar.senate.gov/public/index.cfm/2020/3/klobuchar-introduces-legislation-to-deter-anticompetitive-abuses>.

¹⁰ HOUSE MAJORITY ANTITRUST REPORT, *supra* note 4, at 384–86.

¹¹ *Id.* at 391–92; *see also* Hirsch, *supra* note 8. For a discussion of the potential consequences of expanding the goals of antitrust *see* Elyse Dorsey, Jan M Rybnicek, & Joshua D. Wright, *Hipster Antitrust Meets Public Choice Economics: The Consumer Welfare Standard, Rule of Law, and Rent-Seeking*, COMPETITION POL’Y INT’L ANTITRUST CHRO. (Apr. 2018); Elyse Dorsey, Geoffrey A. Manne, Jan M. Rybnicek, Kristian Stout, Joshua D. Wright, *Consumer Welfare & the Rule of Law: The Case Against the New Populist Antitrust Movement*, 47 PEPP. L. REV. 861 (2020). Antitrust’s “consumer welfare prescription” was first recognized by the Supreme Court in *Reiter v. Sonotone Corp.*, 442 U.S. 330, 343 (1979).

measuring success in innovation, there are several qualitative and quantitative measures through which we can assess how countries compare in fostering a culture that promotes the improvement or development of products and services. That evidence suggests that, at least for now, the United States has a far healthier innovation culture than Europe. This chapter discusses some of the specific criticisms that assert that innovation has declined in the United States as compared to Europe in part because of ineffective competition policy in America and explores some of the potential implications that could arise from adopting certain antitrust reform proposals. In the end, the fact that the United States continues to be the world's innovation hub warns against implementing sweeping and radical changes to antitrust and broader regulatory policy that might undermine a culture that fosters competition, innovation, and economic growth.¹²

COMPARING INNOVATION IN THE UNITED STATES AND EUROPE

The United States has shown that an economy that is free from unnecessary regulation, while at the same time protecting against anticompetitive conduct through a well-defined system of antitrust rules, creates an ecosystem ripe for prosperity, dynamism, risk-taking, and innovation. Although the United States and Europe have economies of roughly the same size, the data show that across a range of metrics, the United States has outperformed its counterparts in Europe in promoting innovation. A successful innovation environment is the result of numerous cultural and policy factors—such as education systems, immigration policy, regulatory environment, attitudes to risk-taking and personal achievement, and access to managerial talent—many of which are difficult to measure. Nevertheless, there are several qualitative and quantitative metrics that suggest the United States has fostered an environment that is far superior to Europe's

¹² For additional discussion of the political and policy debate related to the current state of the digital economy and proposals to reform antitrust, see Joshua D. Wright & Jan M. Rybnicek, *A Time for Choosing: The Conservative Case Against Weaponizing Antitrust*, NATIONAL AFFAIRS (Fall 2020) <https://nationalaffairs.com/time-choosing-conservative-case-against-weaponizing-antitrust>.

in promoting innovation.

The United States is home to the most innovative companies that span numerous industries. This includes the most successful global tech firms at the forefront of technological change. These companies consistently outspend their European counterparts on research and development, a key indicator of product improvement and development. The United States also has greater and faster GDP growth than Europe. Although not a perfect metric, it gives some sense of the contributions that innovative firms have brought to the U.S. economy over time.¹³ The United States also has fostered a healthy and growing venture capital industry that has provided critical funding to enable startup creation. While many startups inevitably fail, some ultimately gain traction and develop into the next major product or technology that improves people's lives. It is no surprise then that the United States is also home to the most so-called "unicorn" firms—private companies valued at \$1 billion or more—that represent the next generation of innovators.

These metrics show that the United States offers a superior atmosphere when it comes to fostering innovation and entrepreneurship, allowing them to grow and prosper into successful vehicles of societal change. It follows that the United States should not then seek simply to emulate Europe by adopting competition and other regulatory policies that could cripple the current U.S. innovation system.

A. The United States is Home to the Most Innovative Companies

Economies grow when their entrepreneurs take risks and build businesses that innovate and thrive. Numerous organizations attempt to quantify and rank companies based on their level of innovation. The reports consistently show that American companies dominate the ranks of the most innovative companies in the world and far

¹³ For a discussion about the relationship between GDP and digital goods, see Avinash Collis, *Consumer Welfare in the Digital Economy*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

outpace European counterparts who regularly have fewer companies listed, and are almost always in lower ranks. One of the most respected studies is prepared annually by Boston Consulting Group (BCG). In 2020, BCG identified the 50 most innovative companies in the world based on an extensive survey of global innovation executives.¹⁴ BCG assessed companies' performance in innovation based on how they are perceived by peers both globally and within their particular industry, their ability to break into new industries and compete in a variety of markets, and the value they were able to create for their shareholders.¹⁵

















Figure 1 presents the 2020 rankings and shows that American companies dominate the top spots, comprising 14 of the top 20 companies (70 percent). Within the top 20, the only other countries represented are all in Asia, meaning that Europe does not contribute a single company to the top tier of the list. The top-rated firms primarily, although not exclusively, are tech firms. Indeed, the top five companies include four U.S. tech firms: Apple, Alphabet (Google), Amazon, and Microsoft. The list also includes companies from more traditional sectors, such as Walmart, which has invested significantly in e-commerce to challenge the likes of Amazon, Shopify, and other online retail firms.¹⁶ Overall, U.S. companies represent 25 of the top 50 companies (50 percent). Only 14 of the top 50 companies (28 percent) are European-based, and they enter the ranks at 21. None of these companies fall within what generally is considered the tech sector, but rather represent industries such as automobile manufacturing, retail, pharmaceuticals, and consumer goods.

¹⁴ MICHAEL RINGEL ET AL., BOSTON CONSULTING GRP., *THE MOST INNOVATIVE COMPANIES IN 2020: THE SERIAL INNOVATION IMPERATIVE* 16 (2020), https://image-src.bcg.com/Images/BCG-Most-Innovative-Companies-2020-Jun-2020-R-4_tcm9-251007.pdf.

¹⁵ *Id.* at 7–15.

¹⁶ Tim Mullaney, *This is What's Behind Walmart's Staying Power that Could Outmaneuver Amazon*, CNBC (Aug. 15, 2019, 9:43 AM), <https://www.cnbc.com/2019/08/15/walmarts-secret-weapon-in-its-quest-to-outmaneuver-amazon.html>.

Figure 1 – BCG’s Most Innovative Companies, 2020

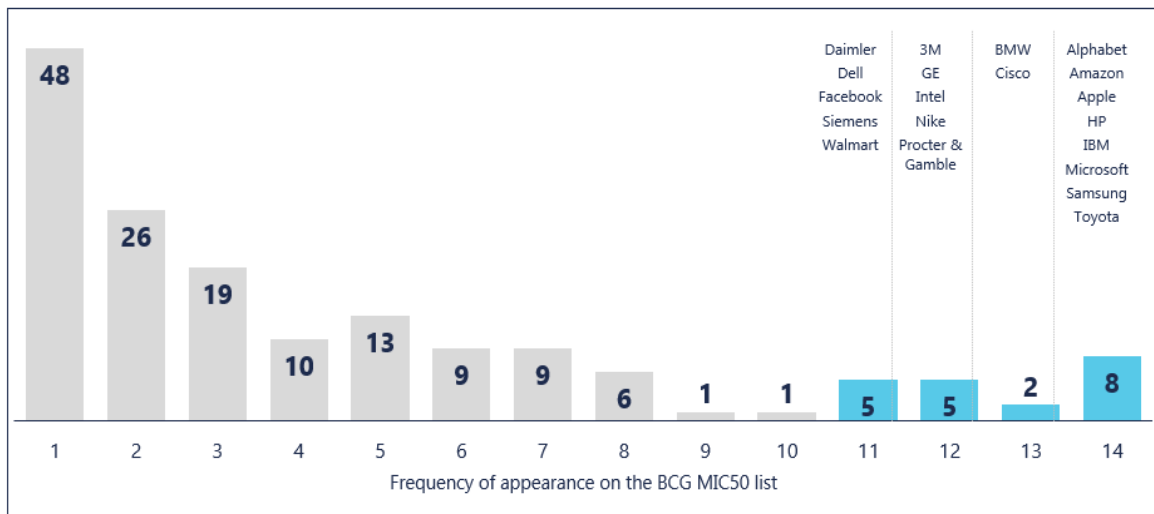
1	Apple		11	Tesla		21	Siemens		31	JD.com		41	Toyota	
2	Alphabet		12	Cisco		22	Target		32	Volkswagen		42	Nestlé	
3	Amazon		13	Walmart		23	Philips		33	Bosch		43	ABB	
4	Microsoft		14	Tencent		24	Xiaomi		34	Airbus		44	3M	
5	Samsung		15	HP		25	Oracle		35	Salesforce		45	Unilever	
6	Huawei		16	Nike		26	Johnson & Johnson		36	JPMorgan Chase		46	FCA	
7	Alibaba		17	Netflix		27	SAP		37	Uber		47	Novartis	
8	IBM		18	LG Electronics		28	Adidas		38	Bayer		48	Coca-Cola	
9	Sony		19	Intel		29	Hitachi		39	Procter & Gamble		49	Volvo	
10	Facebook		20	Dell		30	Costco		40	Royal Dutch Shell		50	McDonald’s	

Source: BCG Global Innovation Survey, 2020.

What is equally remarkable is the frequency with which some of these firms have appeared on BCG’s most innovative companies list. As shown in Figure 2, over the last 14 years, 162 companies have appeared on the BCG list.¹⁷ Of those, 48 companies (nearly 30 percent) have appeared only once on the list and only 93 companies (57 percent) have appeared three times or fewer. On the other end, 20 companies (12 percent) have appeared on the list 11 or more times and only eight companies—Alphabet (Google), Amazon, Apple, Hewlett Packard, IBM, Microsoft, Samsung, and Toyota—have been ranked every year. These numbers show that being a serial innovator that can continuously focus resources and attention on developing new and better products and services is incredibly difficult. It is notable then that U.S. firms are the ones that have been best able to achieve repeat honors as leading innovators, representing 15 of the 20 companies (75 percent) that have appeared on the most innovative companies list 11 or more times.

¹⁷ RINGEL, *supra* note 14, at 8.

Figure 2 – Number of Appearances by Companies on BCG Innovative Companies List



Source: BCG Global Innovation Survey, 2020.

Like BCG, the business magazine *Fast Company* has evaluated businesses since 2008 to determine the most innovative companies in the world. In 2020, the publication assessed thousands of companies across 44 sectors in every region of the world.¹⁸ *Fast Company* judged each company according to its prior year's performance across a combination of innovation and impact factors.¹⁹ The companies that were selected are the ones that make the most profound impact on industry and culture. More so than BCG, *Fast Company's* list is heavily represented by smaller startups that have developed creative new business models and product ideas. But, just as is the case with BCG's most innovative companies list, the companies chosen by *Fast Company* overwhelmingly are based in the United States. As shown in Figure 3, American companies represent six of the top 10 (60 percent) and 21 of the 30 most innovative companies (70 percent).²⁰ A

¹⁸ *The World's 50 Most Innovative Companies*, FAST COMPANY, <https://www.fastcompany.com/most-innovative-companies/2020> (last visited Nov. 9, 2020); *How 'Fast Company' Picked the World's Most Innovative Companies of 2020*, FAST COMPANY (Mar. 10, 2020), <https://www.fastcompany.com/90474625/how-fast-company-picked-the-worlds-most-innovative-companies-of-2020>.

¹⁹ *How 'Fast Company' Picked the World's Most Innovative Companies of 2020*, *supra* note 18.

²⁰ *Fast Company* identifies 50 companies in total for its list. Companies 31 to 50 are excluded from the above chart for ease of reference. These companies almost exclusively are American and only increase U.S. dominance in the list.

trifecta of American companies—Snap, Microsoft, and Tesla—top the list due to the significant impact they have made through their innovations in social media, workspace messaging and video platforms, and electric vehicle development. Asian companies see the second highest representation in the top 30, with four companies making the list. Europe is represented only twice, demonstrating again the United States’ relative success in innovation.

Figure 3 – Fast Company’s Most Innovative Companies, 2020

1	Snap		11	Kaios Technologies		21	Sage Therapeutics	
2	Microsoft		12	Beyond Meat		22	Indigo	
3	Tesla		13	Bravado		23	Vimeo	
4	Big Hit Entertainment		14	Meesho		24	Caastle	
5	Hackerone		15	Spotify		25	Thredup	
6	White Claw		16	Hellow Sunshine		26	Trove	
7	Shopify		17	Luckin Coffee		27	Brex	
8	Canva		18	Merck		28	Hopper	
9	Roblox		19	Whoop		29	Strava	
10	Zipline		20	Sweetgreen		30	Immuta	




Source: Fast Company’s World’s 50 Most Innovative Companies 2020.

Not only have American firms regularly topped the charts of private organizations’ rankings of the most innovative companies in the world, but they also dominate the list of most valuable publicly traded tech companies by market capitalization. As shown in Figure 3, the top 10 tech companies had a combined market value of \$10.2 trillion. Seven of those companies are based in the United States (70 percent), with the remaining three located in Asia (30 percent).²¹ None of the top 10 companies are European. Out of the top 30 tech firms by market capitalization, American companies are represented an astonishing 22 times (73 percent). The remaining

²¹ LARGEST TECH COMPANIES BY MARKET CAP, COMPANIESMARKETCAP.COM, <https://companiesmarketcap.com/tech/largest-tech-companies-by-market-cap/> (last visited Nov. 9, 2020).

companies come from Asia (Alibaba, Tencent, TSMC, Samsung, and Sony), Europe (ASML and SAP), and Canada (Shopify). American firms therefore are not only considered the most innovative by peers and business journals, but also lead the world in terms of the value their investments in technology have brought shareholders.

Figure 4 – Largest Tech Companies by Market Capitalization, 2020

1	Apple (\$2tn)		11	Samsung (\$356bn)		21	SAP (\$137bn)	
2	Microsoft (\$1.7tn)		12	PayPal (\$238bn)		22	Shopify (\$126bn)	
3	Amazon (\$1.7tn)		13	Netflix (\$227bn)		23	Sony (\$108bn)	
4	Alphabet (\$1.2tn)		14	Intel (\$186bn)		24	AMD (\$103bn)	
5	Alibaba (\$857bn)		15	Oracle (\$171bn)		25	IBM (\$102bn)	
6	Facebook (\$836bn)		16	ASML (\$168bn)		26	Square (\$88bn)	
7	Tencent (\$762bn)		17	Qualcomm (\$164bn)		27	Uber (\$79bn)	
8	TSMC (\$413bn)		18	Cisco (\$158bn)		28	Snowflake (\$73bn)	
9	Tesla (\$408bn)		19	Broadcom (\$154bn)		29	Snap (\$59bn)	
10	NVIDIA (\$360bn)		20	Zoom (\$142bn)		30	Vmware (\$59bn)	

Source: CompaniesMarketCap.com

B. The United States Has Outperformed Europe in GDP Growth

A primary measure of economic growth is gross domestic product (GDP), which measures changes in national production. GDP provides yet another metric by which to measure the relative success of the United States' and Europe's innovation cultures over the long run.²² Innovation generates economic growth by introducing new technologies and products that expand welfare.²³ Innovation also generates economic growth by increasing productivity and making it easier and cheaper to achieve the same goals with

²² James Broughel & Adam Thierer, *Technological Innovation and Economic Growth: A Brief Report on the Evidence*, MERCATUS RESEARCH, MERCATUS CENTER AT GEORGE MASON UNIVERSITY, at 4 (2019), <https://www.mercatus.org/system/files/broughel-technological-innovation-mercatus-research-v1.pdf>.

²³ See *id.* at 15–17.

fewer resources.²⁴ There are, to be sure, some challenges with using GDP to measure innovation. For example, GDP does not capture value created outside of the marketplace (e.g., increased leisure time) and imperfectly captures product quality improvements.²⁵ GDP also largely ignores the value created by “free” products that have become so pervasive in the digital economy, such social media apps, email services, search engines, and mapping and navigation tools.²⁶ Indeed, one peer-reviewed study published by the National Academy of Sciences found that consumers would need to receive a yearly payment of \$3,600 to give up free internet maps, \$8,400 to give up free email, and \$17,500 to give up free search engines.²⁷ As a result, GDP does not capture the full range of consumer surplus created by technological innovation. But these deficiencies do not undermine its use in corroborating other evidence that points similarly to strong innovation successes, particularly when GDP is viewed over a long horizon where technological benefits can come to light fully.

A comparison of the GDP of the United States and the European Union between 1980 and 2018 shows that the United States’ GDP has grown more rapidly than that of the European Union. According to IMF data, the European Union had a GDP of \$3.2 trillion in 1980 and a GDP per capita of \$8,540.²⁸ The European Union grew to a GDP of approximately \$14.9 trillion and a GDP per capita of approximately \$33,560 in 2018.²⁹ This represents an increase of five times in the European Union’s GDP and four times in the European Union’s GDP per capita from 1980 to 2018. By comparison, the IMF data shows

²⁴ *See id.* at 7.

²⁵ *Id.* at 15–16.

²⁶ *Id.*

²⁷ Erik Brynjolfsson et al., *Using Massive Online Choice Experiments to Measure Changes in Well-Being*, 116 PROC. NAT’L ACAD. SCI. 7250, 7252 (2019).

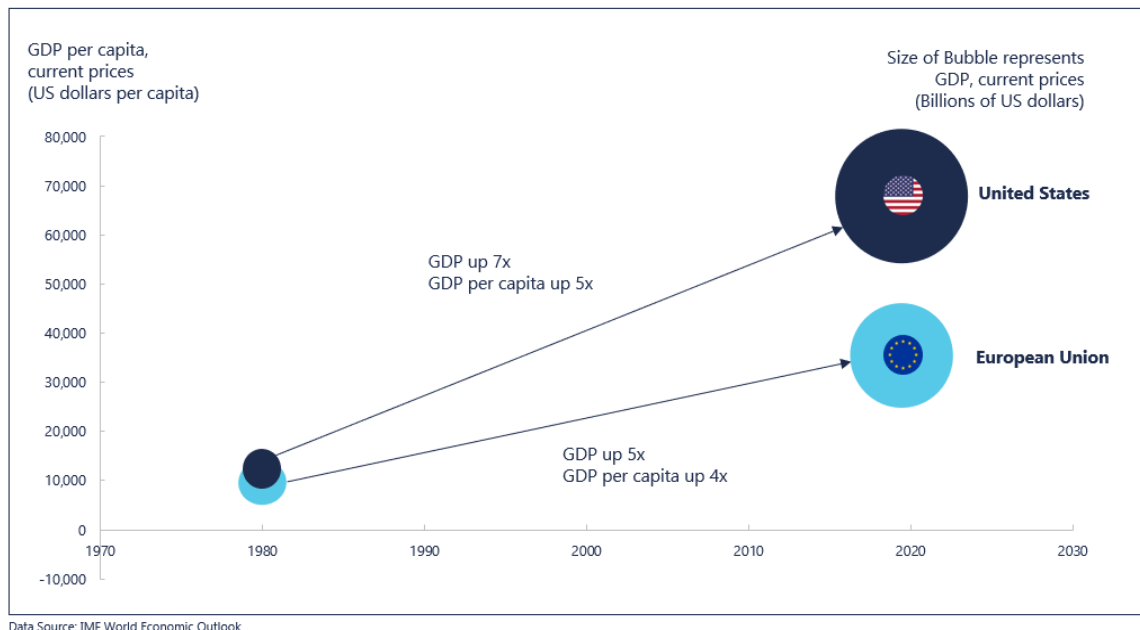
²⁸ GDP PER CAPITA, CURRENT PRICES: U.S. DOLLARS PER CAPITA, INTERNATIONAL MONETARY FUND, <https://www.imf.org/external/datamapper/NGDPDPC@WEO/EU> (last visited Nov. 9, 2020).

²⁹ *Id.*

that the United States had a GDP in 1980 of \$2.9 trillion and a GDP per capita of \$12,550.³⁰ The United States grew to a GDP of approximately \$20.8 trillion and GDP per capita of approximately \$63,050 in 2018.³¹ This represents an increase of seven times in the United States' GDP and five times in the United States' GDP per capita from 1980 to 2018.

The more rapid GDP growth in the United States as compared to Europe has no doubt been caused, at least in part, by the greater focus on investment, innovation, and entrepreneurship in the United States. The world's most successful innovators—located predominantly in the United States—have helped to fuel this economic growth by investing to discover new technologies, inventing new business models, developing new products and services, and creating entirely new markets. As entrepreneurs took risk and their businesses thrived, so too did the economy, including through the creation of new markets and job opportunities, greater access to markets by small businesses, and enhanced productivity and efficiency through the use of technological changes.

Figure 5 – US vs EU GDP & GDP Growth Per Capita (1980 – 2018)



³⁰ REAL GDP GROWTH: ANNUAL PERCENT CHANGE, INTERNATIONAL MONETARY FUND, https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD (last visited Nov. 9, 2020).

³¹ *Id.*

According to the Bureau of Economic Analysis, the U.S. digital economy accounted for 6.9 percent of GDP in 2017, growing at an annual rate of 9.9 percent since 1998, as compared to 2.3 percent for the economy overall.³² Technological change also has been an important source of job creation in the United States that has fueled GDP growth. According to one estimate, nearly 12 million people held tech jobs in the United States in 2018.³³ In just under two decades, Amazon, Apple, Facebook, Alphabet (Google), and Microsoft have employed more than one million workers.³⁴ In 2016, Amazon became the fastest company to employ 300,000 Americans—surpassing Walmart and General Motors.³⁵ Innovation also has created new markets that have further added to job growth. The app economy—a more than \$1 trillion global industry—has created millions of U.S. jobs since Apple’s iPhone launched in 2007. According to one estimate, the U.S. had more than two million app-related jobs as of April 2019.³⁶ Small businesses also have benefited from innovation by using tech platforms to more affordably reach customers in new markets globally. This business growth and job creation has been enabled by the innovation climate in the United States and contributes to its stronger GDP growth.

C. The United States Leads Europe in Research & Development Spending

A key indicator of a vibrant economy that is characterized by vigorous competition and intense innovation is high levels of spending on research and development. Research

³² Kevin Barefoot et al., *Research Spotlight: Measuring the Digital Economy*, SURV. CURRENT BUS., May 2019, at 6–12, <https://apps.bea.gov/scb/2019/05-may/pdf/0519-digital-economy.pdf>.

³³ THE COMPUTING TECHNOLOGY INDUSTRY ASSOCIATION, CYBERSTATES 2020 RESEARCH REPORT, COMPTIA (2020), https://www.cyberstates.org/pdf/CompTIA_Cyberstates_2020.pdf.

³⁴ Nate Rattner & Will Feuer, *Amazon is Responsible for Most Big Tech Job Growth Since 2000*, CNBC (Nov. 4, 2019), <https://www.cnbc.com/2019/11/04/how-many-jobs-have-amazon-google-and-apple-created-since-2000.html>.

³⁵ Michael Mandel, *A Historical Perspective on Tech Job Growth*, PROGRESSIVE POL’Y INST. 3 (2017), <https://www.progressivepolicy.org/wp-content/uploads/2017/01/tech-job-boom-1-12c-17-formatted.pdf>.

³⁶ Michael Mandel, *The Digital Sector: Rising Labor Share, Falling Gross Margin*, PROGRESSIVE POL’Y INST. 2–6 (2018), <https://www.progressivepolicy.org/wp-content/uploads/2018/08/Labor-share-gross-margin.pdf>.

and development fuels economic growth, job creation, and competition by allowing researchers and entrepreneurs to discover new technologies, design new products, tap new markets, and improve efficiency and enhance performance. Critics of U.S. competition policy have argued that today's largest firms have become so large that they are untouchable by competition from current or future rivals and, as a result, have lost the incentive to innovate that once may have been part of their core identity as scrappy upstarts but that has since faded as they rest on their laurels, happy in their dominant positions.³⁷ They further argue that dominant firms snuff out would-be entrants that otherwise would be devoting capital to research and development initiatives to build competing offerings for consumers.³⁸ These critics allege that this purported dampening in the incentive to innovate has deprived consumers of better products and services that would otherwise arise through the push and pull of competition.

But the actual data tell a different story about the state of research and development in the United States and how it compares to its counterparts in Europe. In fact, companies in the United States lead the world in research and development. As shown in Figure 6, out of the top companies globally investing in research and development spending, 11 out of the top 20 (55 percent) and seven out of the top 10 (70 percent) are based in the United States as of 2018.³⁹ By comparison, only six of the top 20 are located in Europe (30 percent), and only two find themselves in the top 10 (20 percent). The remaining firms on the list based on research and development spend are based in Asia.

³⁷ Thompson, *supra* note 7.

³⁸ *American Tech Giants Are Making Life Tough for Startups*, THE ECONOMIST (June 2018), <https://www.economist.com/business/2018/06/02/american-tech-giants-are-making-life-tough-for-startups>; C. Scott Hemphill & Tim Wu, *Nascent Competitors* (NYU L. & Econ Research Paper No. 20-50, 202) (Forthcoming U. Penn. L. Rev 2020), <https://ssrn.com/abstract=3624058>.

³⁹ Erin Duffin, *Ranking of the 20 Companies with the Highest Spending on Research and Development in 2018*, STATISTA (Jul. 22, 2020), <https://www.statista.com/statistics/265645/ranking-of-the-20-companies-with-the-highest-spending-on-research-and-development>.

Contrary to critics' claims, there is no lack of research and development in the United States, and U.S. firms continue to outpace global counterparts in investing in new technologies and products. The reality is that companies in the United States invest in a broad range of research and development initiatives despite the presence of large, successful tech companies. Unsurprisingly, just as no one today would invest in developing a new combustion engine-powered car that would have to compete against established and mature competitors that have considerable expertise in the market, it would be unwise to try to compete against any of the large tech companies with a "me too" product. Instead, innovators (and, as discussed below, the venture capital and other sources of capital that fund them) devote resources to discovering new and different solutions that may indirectly replace incumbents by disrupting old markets and creating new ones. Indeed, this how many of today's most successful tech firm achieved success—by building new products and creating new markets, not by mimicking yesteryear's giants, such as IBM, Microsoft, and Intel.

Figure 6 – R&D Investment by Company, Global (2018)



A closer look at research and development investment in the United States further shows that tech firms are leading the way. In fact, many of the tech firms that have

allegedly contributed to the decline of competition and innovation in the United States are the biggest spenders. As shown in Figure 7, Amazon, Alphabet, Intel, Microsoft, and Apple comprise the nation's top five spenders, with investments totaling more than \$75 billion in 2018.⁴⁰ These companies are pouring money into innovation not because they have nothing else to do with it but because they are attempting to stay ahead of the competition in their core markets by introducing even better products and services, and to break into adjacent markets where they see opportunities to use their expertise to be disruptive forces.

To name a few examples, Amazon is developing a drone delivery fleet to make its already industry-leading logistics operation even more convenient for consumers and is investing in cashierless store technology to make shopping faster and more efficient.⁴¹ Google is investing heavily in AI and machine learning to improve its search and advertising businesses, as well as to power its aspirations in autonomous driving vehicles.⁴² Apple's investments have led to an array of new products over the years that have broadened the company's portfolio beyond personal computers to phones, tablets, watches, television subscription services, and payment systems.⁴³ These are not the actions of companies that are content with their achievements to date and who do not fear that the competitive landscape could change quickly if they do not continue to

⁴⁰ *Id.*

⁴¹ See Concepción de León, *Drone Delivery? Amazon Move Closer with F.A.A. Approval*, N.Y. TIMES (Aug. 31, 2020), <https://www.nytimes.com/2020/08/31/business/amazon-drone-delivery.html>; Taylor Lyles, *Amazon Go's Cashierless Tech May Come to Whole Foods as Soon as Next Year*, VERGE (Aug. 24, 2020), <https://www.theverge.com/2020/8/24/21399607/amazon-cashierless-go-technology-whole-foods-2021-rumor>.

⁴² See, e.g., Alex Hern, *Google's Self-Driving Car Project Buys British AI Firm Latent Logic*, GUARDIAN (Dec. 12, 2019), <https://www.theguardian.com/technology/2019/dec/12/googles-self-driving-car-project-buys-british-ai-firm-latent-logic>.

⁴³ See Mike Bostock, *A Timeline of Apple Products*, OBSERVABLE (Mar. 7, 2020), <https://observablehq.com/@mbostock/a-timeline-of-apple-products>; Jon Porter, *Apple One Now Available, Bundling Apple's Services into a Single Subscription*, VERGE (Oct. 20, 2020), <https://www.theverge.com/2020/10/30/21541685/apple-one-subscription-individual-family-premier-music-tv-plus-arcade-icloud-news-fitness>.

introduce new and better products that keep their customers satisfied and drive new business growth.

Figure 7 – R&D Investment by Company, United States (2018)

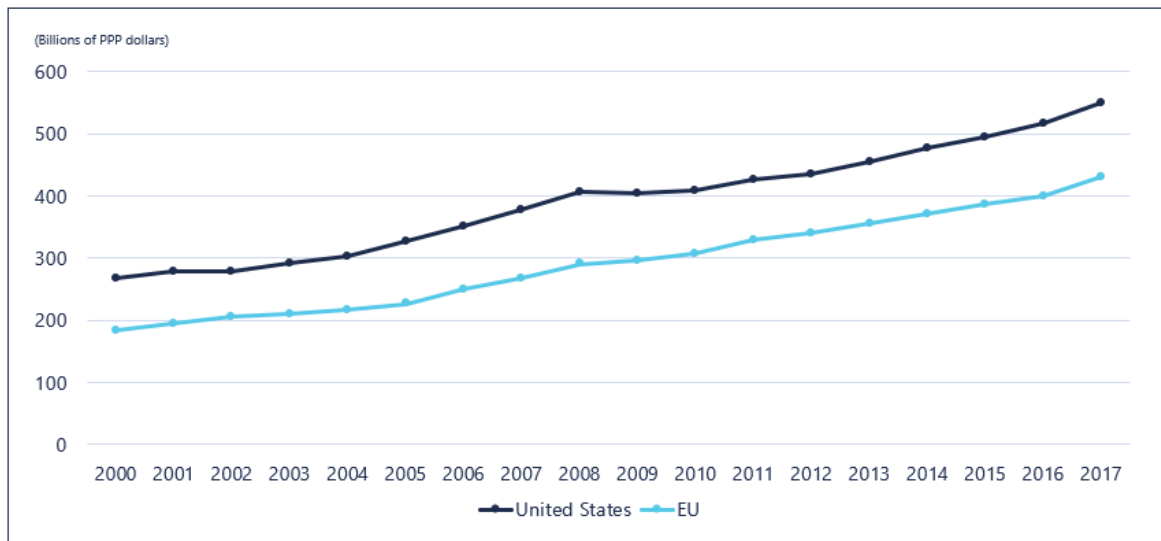


Source: FactSet

Comparing regional investments at the firm level provides one data point illustrating the vast differences between the innovation ecosystems in the United States and Europe, and those illustrations are corroborated by the data at a more macro country level. The United States consistently has spent more on research and development than any other country or political union in the world. Figure 8 shows that the United States spent \$549 billion (on a purchasing power parity basis) on research and development in 2017.⁴⁴ By comparison, the European Union spent \$430 billion (on a purchasing power parity basis) in 2017, more than \$100 billion less than United States. Those disparities in spending have manifested themselves in starkly different digital economies, with the United States attracting more risk-taking innovators who want to build companies that seek to develop new and better products. These investments ultimately have led to significant economic growth and prosperity.

⁴⁴ NAT'L SCI. BD., THE STATE OF U.S. SCIENCE & ENGINEERING 8 (2020), <https://nces.nsf.gov/pubs/nsb20201/global-r-d>.

Figure 8 – GDP Expenditures on R&D, US and EU (2000-2017)

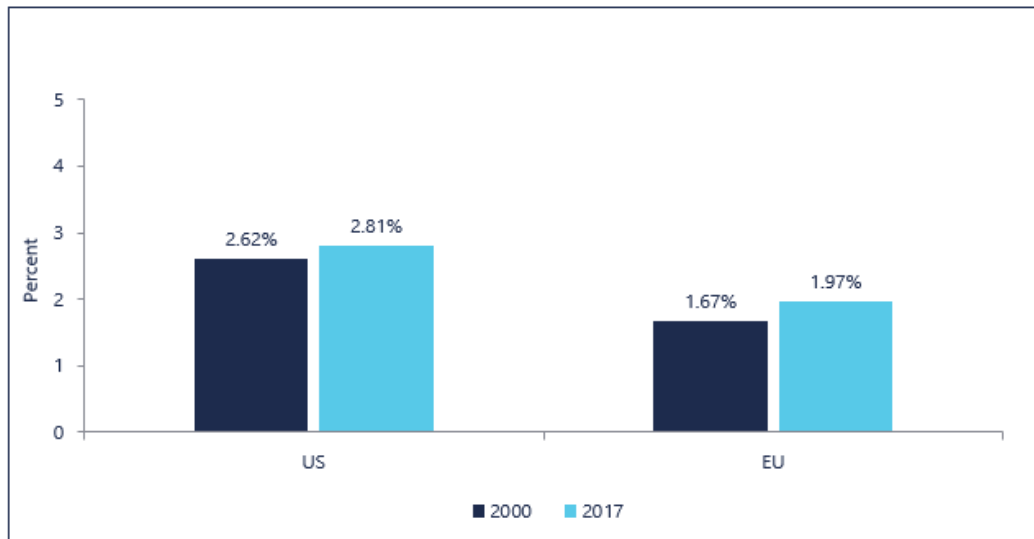


PPP = purchasing power parity.
Source: National Science Foundation

As shown in Figure, 9, the United States also leads Europe in research and development intensity, which measures the ratio of research and development spending relative to GDP. While several smaller economies have greater research and development intensity, the United States boasts a research and development to GDP ratio of 2.81 in 2017, up from 2.62 in 2000, placing it in the top 10 globally.⁴⁵ In contrast, Europe's research and development intensity is measured at just 1.97, up from 1.67 in 2000. Although Europe's research and development spending has grown somewhat more quickly than the United States over the last nearly 20 years, it still lags behind.

⁴⁵ *Id.* at 9.

Figure 9 – R&D Intensity, US and EU (2000 & 2017)



Source: National Science Foundation

But the news has not all been positive for the United States. Its global share of research and development spending has fallen since 2000 as Asian countries, particularly China, have significantly increased their research and development spending and, in recent years, have accounted for most of the growth in global research and development spending.⁴⁶ Not surprisingly it is China and other Asian countries, not Europe, that have begun to rival the United States in technology development and innovation.

One criticism of the innovation ecosystem in the United States is that it lacks sufficient support and direction from the public sector.⁴⁷ A majority of U.S. research and development spending is derived from the private sector.⁴⁸ However, history suggests that some of the strongest periods for innovation in the United States have come from massive expenditures in research and development to meet the urgent demands of national threats or crises, such as World War II and the rise of the Soviet Union in the latter half of the 20th century.⁴⁹ During these periods, through federally funded labs and

⁴⁶ *Id.*

⁴⁷ ATKINSON, *supra* note 3, at 15.

⁴⁸ *See id.* at 17; NAT'L SCI. BD, *supra* note 44, at 10.

⁴⁹ ATKINSON, *supra* note 3, at 4–5.

partnerships with university research centers, the United States laid the foundation for becoming the global leader in advanced industries, such as aerospace and electronics.⁵⁰

The realization that China is rapidly innovating and advancing its technological capabilities may revitalize demand for a strong federal role in innovation policy through greater funding for research universities and federal labs and a coordinated strategy on investment priorities. Such a program may hasten the use of technology to rebuild infrastructure and to disrupt long stagnant markets, such as health care, housing, and manufacturing, that are prime candidates for innovation but have largely been overlooked. More public funding and better strategic focus likely would only add to the United States' success in promoting innovation and create further distance between itself and Europe.

D. Venture Capital Invests Overwhelmingly in the United States

While innovation undoubtedly requires smart, talented, and eager entrepreneurs to conceive of new business models and to develop better products and services, it also requires funding to bring those ideas to fruition. Absent that funding support, thousands of aspiring innovators and startups would be unable to bring their products to consumers and compete in the marketplace. The venture capital funding model has been a key ingredient in the success of the modern digital economy and has enabled thousands of startups to bring their innovations to consumers and to grow their businesses.

Prior to the modern venture capital market, funding for fledgling ideas largely flowed from industrial research labs or a limited number of large companies or wealthy individuals. Those funding sources were much smaller as compared to today, and the funding was much more opaque and more difficult to access. Today, the U.S venture-capital industry is envied throughout the world and serves as an important engine for economic growth. It brings investors with an appetite for risk-taking together with

⁵⁰ *Id.*

entrepreneurs and innovators who believe they have an idea that can grow and succeed. In doing so, it enables those ideas to become reality.

As shown in Figure 10, venture capital investing has soared in the United States over the last 10 years, growing from \$27.4 billion in 2009 to an astonishing \$136.5 billion in 2019—representing an increase of nearly a 400 percent.⁵¹ The number of venture capital deals has also increased from 4,535 in the 2009 to 10,777 in 2019, an increase of nearly 140 percent. That growth has occurred across all funding stages: angel and seed funding, early stage capital, and late stage capital, providing companies with support from the earliest development phase through to when they are mature companies but not yet profitable.⁵² In contrast, the European venture capital market is much smaller, starting with just \$5 billion in investment in 2009 and growing to \$36.3 billion in 2019.⁵³ Although European venture capital spending has grown faster than U.S. spending, it was only in 2018 that European venture capital matched the level of investment that the United States experienced nearly 10 years earlier. The deal count also is much smaller in Europe, with deals growing from just 1,689 in 2009 to 5,017 in 2019, which is less than half of the current deal count in the United States.

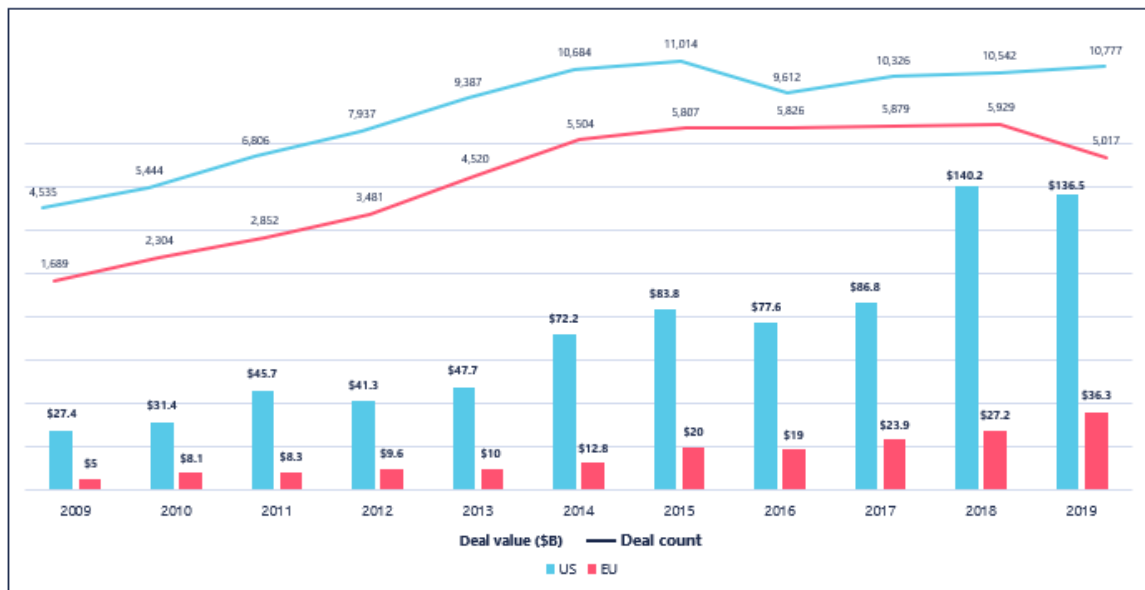
The disparity between the United States and European venture capital markets is one reason why the U.S. has consistently been home to the most innovative companies and technological development. But it also is evidence that investors view the United States as a better place to invest, in part because of its more favorable innovation climate.

⁵¹ PITCHBOOK & NAT'L VENTURE CAP. ASS'N, VENTURE MONITOR Q4 2019 5 (2020), https://files.pitchbook.com/website/files/pdf/Q4_2019_PitchBook_NVCA_Venture_Monitor.pdf.

⁵² *See id.* at 7–12.

⁵³ *See* PITCHBOOK, EUROPEAN VENTURE REPORT 3 (2020), <https://pitchbook.com/news/reports/2019-annual-european-venture-report>.

Figure 10 – Venture Capital Investment, United States and Europe (2009-2019)



Source: Pitchbook-NVCA Venture Monitor

Venture capital investing is based on the premise that investors who are willing to risk capital on a new idea have the opportunity to reap the rewards of that investment once the company has traversed the difficult process of developing its ideas from untested concepts and business plans into mature and successful businesses.⁵⁴ Of course, not all venture-backed startups succeed. Indeed, by one estimate, as many as 75 percent never return cash to their investors, showing that the risks are real.⁵⁵ But for those startups that are successful, investors look for ways to exit once they can make an acceptable return. While initial public offerings (IPOs) may be a possibility for certain companies willing to go public, by far the most common mechanism for exit is through an acquisition by another firm.⁵⁶ The ability to predict the likelihood of a successful exit therefore significantly influences venture capitals' willingness to invest in one startup or another,

⁵⁴ For more on developments in the venture capital industry and the intersection between venture capital and antitrust, see the Department of Justice's Public Workshop on Venture Capital and Antitrust, Feb. 12, 2020), <https://www.justice.gov/atr/events/public-workshop-venture-capital-and-antitrust>.

⁵⁵ Faisal Hoque, *Why Most Venture-Backed Companies Fail*, FAST CO. (Dec. 10, 2012), <https://www.fastcompany.com/3003827/why-most-venture-backed-companies-fail>.

⁵⁶ PITCHBOOK & NAT'L VENTURE CAP. ASS'N, *supra* note 51, at 32.

as well as whether to invest in startups at all or instead to place their capital in other investment vehicles that present a better combination of risk and reward. The current growth in venture capital investing is due, in part, to the perception that investing in startups presents an attractive risk-reward profile based on the ability of investors to earn returns following an exit event.

Much has been written regarding concerns that tech startups are increasingly being acquired by large dominant firms in an effort by those dominant firms to arrest the future competition that they might face from the startup.⁵⁷ The most frequently cited examples are Facebook's acquisitions of Instagram in 2012 and WhatsApp in 2014, which many today perceive to have been growing competitive threats to Facebook.⁵⁸ Others argue that it is only as a result of being acquired by Facebook that Instagram and WhatsApp were able to grow into the successful products they are today.⁵⁹ In response, some policymakers and commentators have introduced proposals that would make acquisitions by certain companies more difficult to complete, either by making them presumptively unlawful or banning those mergers in their entirety.⁶⁰

But while the antitrust laws should (and can) prevent anticompetitive mergers of nascent⁶¹ or potential competitors,⁶² and the antitrust authorities must develop strategies

⁵⁷ See generally Yun, *supra* note 5 (discussing the law and economics of so-called "killer acquisitions").

⁵⁸ See, e.g., HOUSE MAJORITY ANTITRUST REPORT, *supra* note 4, at 150–55; see also Sam Schechner & Parmy Olson, *Facebook Feared WhatsApp Threat Ahead of 2014 Purchase, Documents Show*, WALL ST. J. (Nov. 6, 2019), <https://www.wsj.com/articles/facebook-feared-whatsapp-threat-ahead-of-2014-purchase-documents-show-11573075742>. Another frequently cited example is Google's acquisition of Youtube in 2006.

⁵⁹ See HOUSE MAJORITY ANTITRUST REPORT, *supra* note 4, at 150–60; see also Yun, *supra* note 5, at nn.21, 25 and accompanying text.

⁶⁰ See, e.g., Sergei Klebnikov, *Elizabeth Warren Reportedly Drafting Bill to Ban "Mega Mergers"*, FORBES, Dec. 5, 2019, <https://www.forbes.com/sites/sergeiklebnikov/2019/12/05/elizabeth-warren-reportedly-drafting-bill-to-ban-mega-mergers/?sh=3c723e1466a4>.

⁶¹ For a recent example, see, for example, Press Release, Fed. Trade Comm'n, FTC Challenges Illumina's Proposed Acquisition of PacBio (Dec. 17, 2019), <https://www.ftc.gov/news-events/press-releases/2019/12/ftc-challenges-illumina-proposed-acquisition-pacbio>.

⁶² See, e.g., Press Release, FTC Puts Conditions on Nielsen's Proposed \$1.26 Billion Acquisition of Arbitron

for effectively demonstrating such harm in deals where it exists, imposing broad prohibitions on a large swath of acquisitions (most of which present no competitive issues) inevitably will make investor exit more difficult and costly. Such changes likely would reduce the incentive to invest and could smother the investment that has fueled new business development and innovation in the United States.

Proposals to completely ban acquisitions by companies of a certain size or make them presumptively illegal absent persuasive evidence that they are procompetitive (regardless of whether any competition concerns exist),⁶³ would add friction to venture capital's exit opportunities without improving antitrust enforcement.⁶⁴ Because capital has other alternatives into which it can flow, decreasing the ability for investors to exit may make it relatively more attractive for investors to put their capital in other markets or investment vehicles. This result could reduce venture capital investment in the United States and dampen technological innovation and new business creation.

The notion that new regulations may inadvertently reduce incentives to invest and thereby potentially harm long-term innovation is not merely theoretical. In 2018, the European Union enacted the landmark General Data Protection Regulation (GDPR), which established new rules governing data protection and privacy for firms operating in the European Union.⁶⁵ The regulation was widely criticized by many for imposing a

(Sep. 20, 2013), <https://www.ftc.gov/news-events/press-releases/2013/09/ftc-puts-conditions-nielsens-proposed-126-billion-acquisition>.

⁶³ See HOUSE MAJORITY ANTITRUST REPORT, *supra* note 4, at 387–88; Erik Wasson, *Warren, Ocasio-Cortez Float Long-Shot Bid to Pause M&A in Crisis*, BLOOMBERG (Apr. 28, 2020), <https://www.bloomberg.com/news/articles/2020-04-28/warren-ocasio-cortez-propose-temporary-corporate-merger-ban> (discussing a proposed temporary moratorium on acquisitions by large firms during pandemic situation).

⁶⁴ See David L. Bahnsen, *Banning Mergers and Acquisitions: A Bad Idea at a Bad Time*, NAT'L REV. CAP. MATTERS (Apr. 29, 2020), <https://www.nationalreview.com/2020/04/coronavirus-crisis-banning-mergers-and-acquisitions-bad-idea-at-a-bad-time/>; Will Rinehart, *The Government Should Not Ban Mergers and Buyouts*, AM. ACTION F. (Oct. 4, 2018), <https://www.americanactionforum.org/insight/the-government-should-not-ban-mergers-and-buyouts/>.

⁶⁵ Press Release, Eur. Comm'n, Statement by Vice-President Ansip and Commissioner Jourová Ahead of the Entry into Application of the General Data Protection Regulation (May 24, 2018),

broad new regime that was overly burdensome and imposed significant compliance costs, the ultimate effect of which would be to create advantages for incumbents with deeper pockets and resources than smaller firms and startups⁶⁶ For investors, GDPR introduced additional due diligence and other acquisition costs when considering investment options. One study shows that in response to the increase in relative costs and uncertainties, foreign investors reduced their per-deal investment by nearly 41 percent, and the monthly number of EU foreign deals dropped 22 percent.⁶⁷ The decline was lower but still substantial for investors from within the EU, resulting in a reduction in investment of nearly 36 percent and nearly 16 percent fewer monthly deals.⁶⁸ These dramatic declines in investment demonstrate the tradeoff that occurs by imposing additional regulations. The experience with GDPR shows that increasing relative regulatory costs has a negative effect on investment and, as a result, may lead to lower levels of business development, slower growth, and less technological innovation.

E. The United States is Home to the Next Generation of Innovators

Not only is the United States the home of an overwhelming majority of today's most successful and innovative companies, it also is home to the next generation of innovative firms that will build the products and services on which that we will be depending in the future. Overwhelmingly when entrepreneurs want to start a company they decide to do so in the United States. Some of that surely is because in some cases the United States is where those innovators were raised and went to school. But others

https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT_18_3889.

⁶⁶ See, e.g., Alec Stapp, *GDPR After One Year: Costs and Unintended Consequences*, TRUTH ON THE MKT. (May 24, 2019), <https://truthonthemarket.com/2019/05/24/gdpr-after-one-year-costs-and-unintended-consequences/>.

⁶⁷ Jian Jia et al., *GDPR and the Localness of Venture Investment* 3–4 (Jan. 21, 2020) (unpublished manuscript), <https://ssrn.com/abstract=3436535>.

⁶⁸ *Id.* at 4.

purposefully come to the United States because they believe it offers a more hospitable climate for innovation and business development.⁶⁹ Indeed, more than 40 percent of Fortune 500 companies that are located in the United States are started by foreigners.⁷⁰ Moreover, the companies that are being created in the United States are proving to be the ones that also are the most valued in the world for the new products and services they have introduced.

In fact, as shown in Figure 11, nearly half of the world's so-call "unicorn" firms—private companies valued at \$1 billion or more—originate in the United States.⁷¹ The next highest number of unicorn firms is found in China, which has half as many as the United States, although that number is growing quickly. In stark contrast, Europe is far behind both the United States and China, and is home to relatively few unicorn companies, despite having more than 100 million more people.⁷² The two most successful countries in Europe in developing unicorn firms have been the United Kingdom, which hosts 23, and Germany, which hosts another 12.

This data shows that entrepreneurs seek to innovate and grow their businesses in the United States more so than in any other country further, further supporting the notion that the United States has fostered a superior climate for innovation than has Europe—one in which innovators and entrepreneurs can attain the funding they need to grow and

⁶⁹ See, e.g., J. David Brown et al., *Immigrant Entrepreneurs and Innovation in the U.S. High-Tech Sector* (IZA Instit. Discussion Paper No. 12190, 2019), <http://ftp.iza.org/dp12190.pdf>; Shai Bernstein et al., *The Contribution of High-Skilled Immigrants to Innovation in the United States* (July 11, 2019) (unpublished manuscript), https://web.stanford.edu/~diamondr/BDMP_2019_0709.pdf (suggesting that immigrants also play an outsize role in American innovation leadership in certain industries).

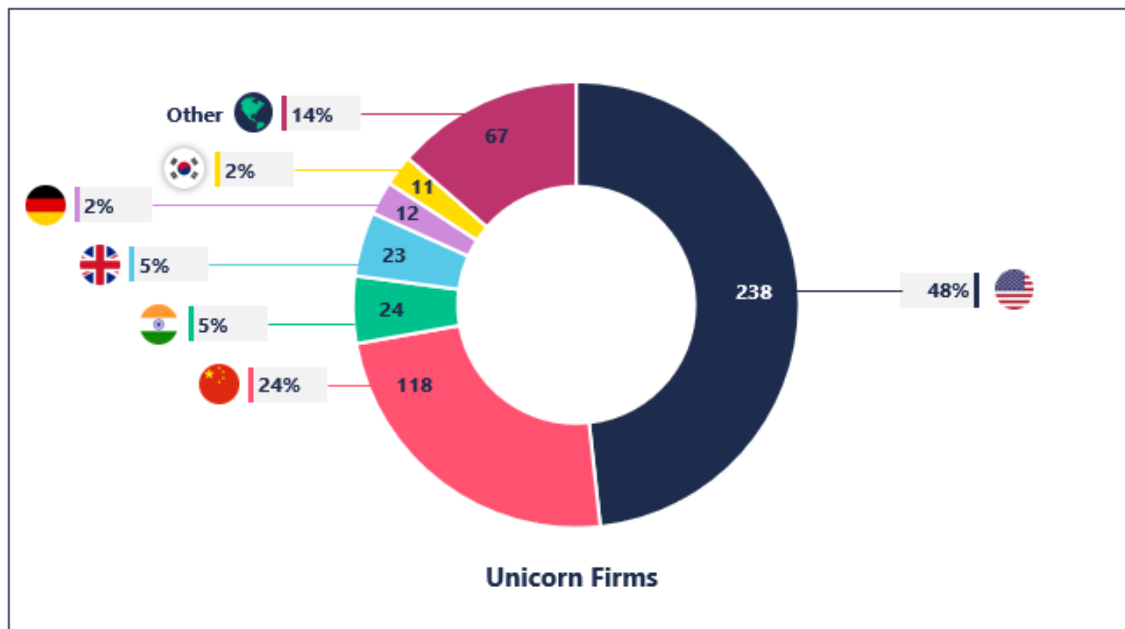
⁷⁰ Michael Grothaus, *Some of the U.S.'s Biggest Companies are Founded by Immigrants*, FAST COMPANY, July 26, 2018, <https://www.fastcompany.com/90202816/some-of-the-u-s-s-biggest-companies-are-founded-by-immigrants>.

⁷¹ *The Complete List of Unicorn Companies*, CBINSIGHTS, <https://www.cbinsights.com/research-unicorn-companies> (last visited Nov. 9, 2020).

⁷² POPULATION, TOTAL - EUROPEAN UNION, UNITED STATES, CHINA, WORLD BANK DATA, <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=EU-US-CN> (last visited Nov. 9, 2020).

have ample opportunity vigorously compete against old and new rivals.⁷³

Figure 11 – Global Unicorn Firms by Country, 2020 Q3



Source: CB Insights, October 2020

CONCLUSION

The United States is the world leader in promoting technological change and innovation. That innovation has fueled the digital economy and the development of products and services that have increased prosperity and welfare. The United States' innovation culture has far outpaced its counterparts in Europe. Across a wide range of metrics, the United States is better at helping entrepreneurs develop the most innovative global companies through access to venture capital funding and by protecting competition that encourages even the most successful firms to continue to innovate in order to stay ahead of rivals that wish to overtake them. There is no doubt room for

⁷³ For additional analysis of Europe's start-up ecosystem and the challenges it faces, see Kim Baroudy, Jonatan Janmark, Abhi Satyavarapu, Tobias Stralin, & Zeno Ziemke, *Europe's Start-up Ecosystem: Heating Up, But Still Facing Challenges*, MCKINSEY & CO. (Oct. 11, 2020), <https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/europes-start-up-ecosystem-heating-up-but-still-facing-challenges>.

improvement. There are legitimate concerns that U.S. innovation is not focused enough on creating technological change in areas that most impact humanity. But this fault is potentially a call for stronger public-private partnership and greater focus on strategic goals, not for new regulations that may undermine the healthy innovation ecosystem that the United States has developed. As competition in the digital economy comes under more intense scrutiny and some policymakers seek to introduce European-style antitrust laws that have less faith in markets and more faith in government control, it is important to remember that the United States' current regulatory framework has contributed to America's success in innovation. Dramatic reforms that seek not just to improve antitrust enforcement on the margin, but instead intend to completely rewrite a well-defined body of law that has been carefully developed over decades through case-by-case adjudication that permits procompetitive conduct and condemns anticompetitive conduct, present the risk of upending a well-balanced ecosystem that promotes entrepreneurship, investment, and innovation.

Consumer Welfare in the Digital Economy

Avinash Collis*

INTRODUCTION

“You can see the computer age everywhere but in the productivity statistics.”

Robert Solow (1987)¹

Despite rapid development in information technologies in the 1970s and 1980s, productivity in the US was slowing down. A key reason for this productivity paradox was that investments in information technologies require complementary investments in business processes and productivity gains, which usually lag behind information technologies.² A similar debate has happened over the past decade as productivity in the US and other advanced economies has fallen while there has been more and more technology around us. Companies in Silicon Valley believe that this is due to a mismeasurement in productivity.³ However, a recent analysis has shown that mismeasurement in information technology alone cannot explain this productivity slowdown.⁴

A more fundamental question related to the current digital economy is whether digitization has increased consumer welfare. Traditionally economists and policymakers have used changes in Gross Domestic Product (GDP), and measures derived from GDP such as productivity, as proxies for changes in consumer welfare and well-being.

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¹ Robert M. Solow, *We'd Better Watch Out*, N.Y. TIMES BOOK REV., Jul 12, 1987, at 36.

² See Erik Brynjolfsson, *The Productivity Paradox of Information Technology*, COMM'NS ACM, Dec. 1993, at 67, 75.

³ See Timothy Aepfel, *Silicon Valley Doesn't Believe US Productivity is Down*, WALL ST. J. (July 16, 2015), <https://www.wsj.com/articles/silicon-valley-doesnt-believe-u-s-productivity-is-down-1437100700>.

⁴ See Chad Syverson, *Challenges to Mismeasurement Explanations for the US Productivity Slowdown*, 31 J. ECON. PERSPS. 165, 167–68 (2017).

However, this relationship might not be accurate in the current digital age where most of the digital goods that we consume online have a price of zero.

The average US resident spent around 6.3 hours a day on digital media in 2018.⁵ This increased from 2.7 hours a day in 2008 and is expected to grow at 5% year over year in the coming years. Most of this time is now spent on apps on mobile devices and most of these apps (over 90%) are free to consumers. Therefore, as consumers consume more and more free digital goods, their welfare should increase. However, if we look at the share of the information sector, as a percentage of GDP, it has remained at around 4-5% for the last 40 years (Figure 1). Clearly technology plays a much bigger role in our lives today than it did 40 years ago. This points to the need for measuring the welfare contributions of digitization rather than inferring them from measures of production.

⁵ Mary Meeker, *Internet Trends 2019*, BOND CAP. (June 11, 2019), <https://www.bondcap.com/report/itr19>.

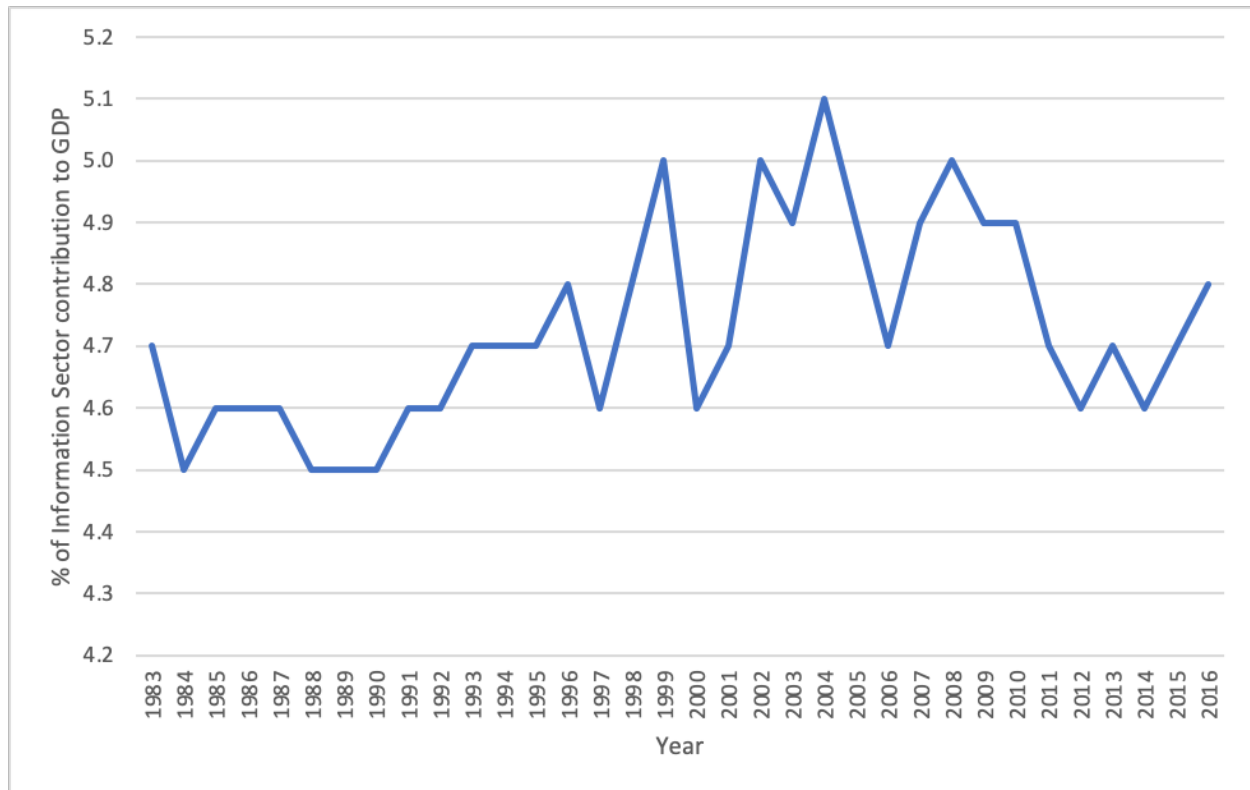


Figure 1 Contribution of information sector to GDP in the US (source: BEA)

William Nordhaus found that firms were only able to capture a tiny fraction (3–4%) of the total social returns to technological innovations.⁶ The remaining 96–97% of the returns went to consumers. It is challenging for firms to capture more returns from zero marginal cost digital goods when the competitive price in equilibrium is zero. Therefore, measures of production capture only a small fraction of the total gains from digitization, and it is important to measure welfare gains enjoyed by consumers.

A smartphone today has substituted for several devices purchased by consumers in the past, including: cameras, alarm clocks, music players, calculators, computers, navigation devices, land line telephones, game machines, video players, recording devices, and video cameras. In addition, a smartphone has new apps and features such as search engines, social media, and instant messaging which did not exist before. On one

⁶ William D. Nordhaus, *Schumpeterian Profits in the American Economy: Theory and Measurement* 22 (Nat'l Bureau of Econ. Rsch., Working Paper No. 10433, 2004).

hand, almost all of these apps and features are available for free and the price of a smartphone has not fallen significantly compared to the price of feature phones before smartphones were introduced. On the other hand, people used to pay several thousand dollars combined to purchase these devices in the past. One estimate puts the total cost of some of these substituted devices at over \$5,000.⁷ Therefore, as a result of these innovations, the contribution of the information technology sector to GDP and productivity could fall while consumer welfare increases.

Section 1 explores the relationship between GDP and consumer welfare with examples of cases when they are correlated and when they are not. Section 2 provides a summary of the literature measuring the consumer welfare derived from various digital goods. Section 3 explores recent research measuring consumer welfare using massive online choice experiments and Section 4 discusses incorporating these estimates into a macroeconomic welfare indicator. Section 5 summarizes research on the impact of digitization on subjective well-being and Section 6 concludes the chapter with a proposal for a dashboard of welfare metrics for the current digital age.

I. GDP AND CONSUMER SURPLUS IN THE DIGITAL ECONOMY

Consumer surplus or welfare is defined as the difference between the value obtained by a consumer by consuming a good and the price paid to purchase that good (Triangle A in Figure 2). Consumer surplus is meant to quantify the economic wellbeing of a consumer from consuming a good. Producer surplus refers to revenues generated by a firm from selling a good (Rectangle B in Figure 2). Producer surplus of final goods would show up in the GDP of an economy.

The relationships among GDP and consumer surplus can be understood by

⁷ Steven Cichon, *Everything From This 1991 Radio Shack Ad You Can Now Do With Your Phone*, HUFFPOST (Jan. 16, 2014), https://www.huffpost.com/entry/radio-shack-ad_b_4612973.

looking at three types of goods.⁸ First, consider most of the classic physical goods of the 20th century (e.g. cars, books, cassette tapes, etc.): consumer surplus is proportional to firm revenue (Figure 2). Keeping the supply curve fixed, as more consumers enter the market, the size of the market increases, and the demand curve shifts to the right. Therefore, both consumer surplus and producer surplus increase approximately proportionately. The increased producer surplus shows up in GDP statistics, and hence both GDP and consumer welfare move in the same direction. Keeping price fixed, doubling the number of goods sold roughly doubles the revenues, the contribution to GDP, and consumer surplus.

⁸ Erik Brynjolfsson, Avinash Collis, and Felix Eggers, *Using Massive Online Choice Experiments to Measure Changes in Well-Being*, 116 PROCS. NAT'L ACAD. SCI. 7250–55.

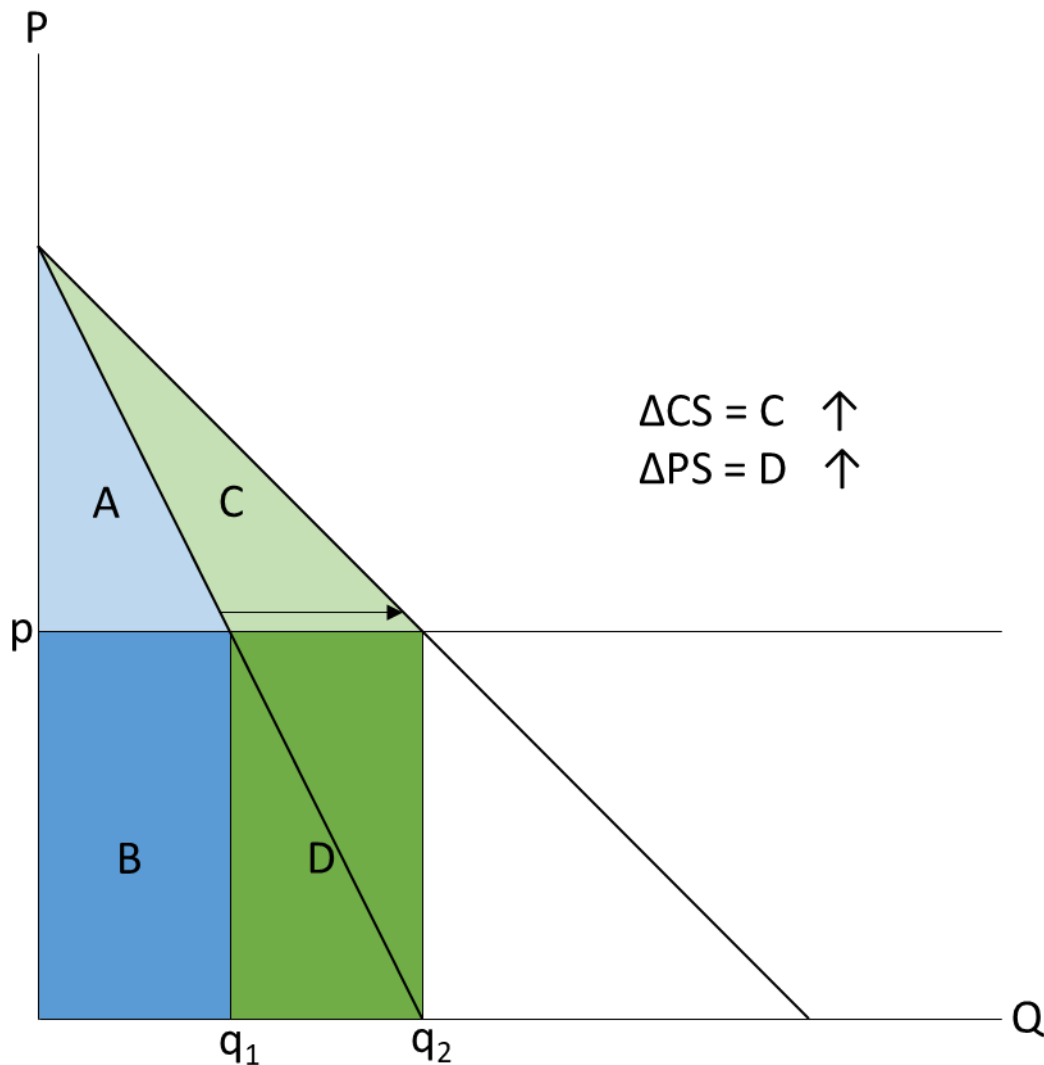


Figure 2 Changes in consumer surplus and producer surplus from a shift in demand curve for classic goods (Brynjolfsson et al., 2019b)

Second, consider purely digital goods such as search engines, digital maps, social media and instant messaging apps, which have essentially zero marginal cost and are typically offered to consumers for free. As consumers consume more and more of these free goods (e.g. doubling their consumption of digital maps), consumer surplus will also increase, but this change in well-being does not necessarily result in changes in producer surplus and GDP (Figure 3).

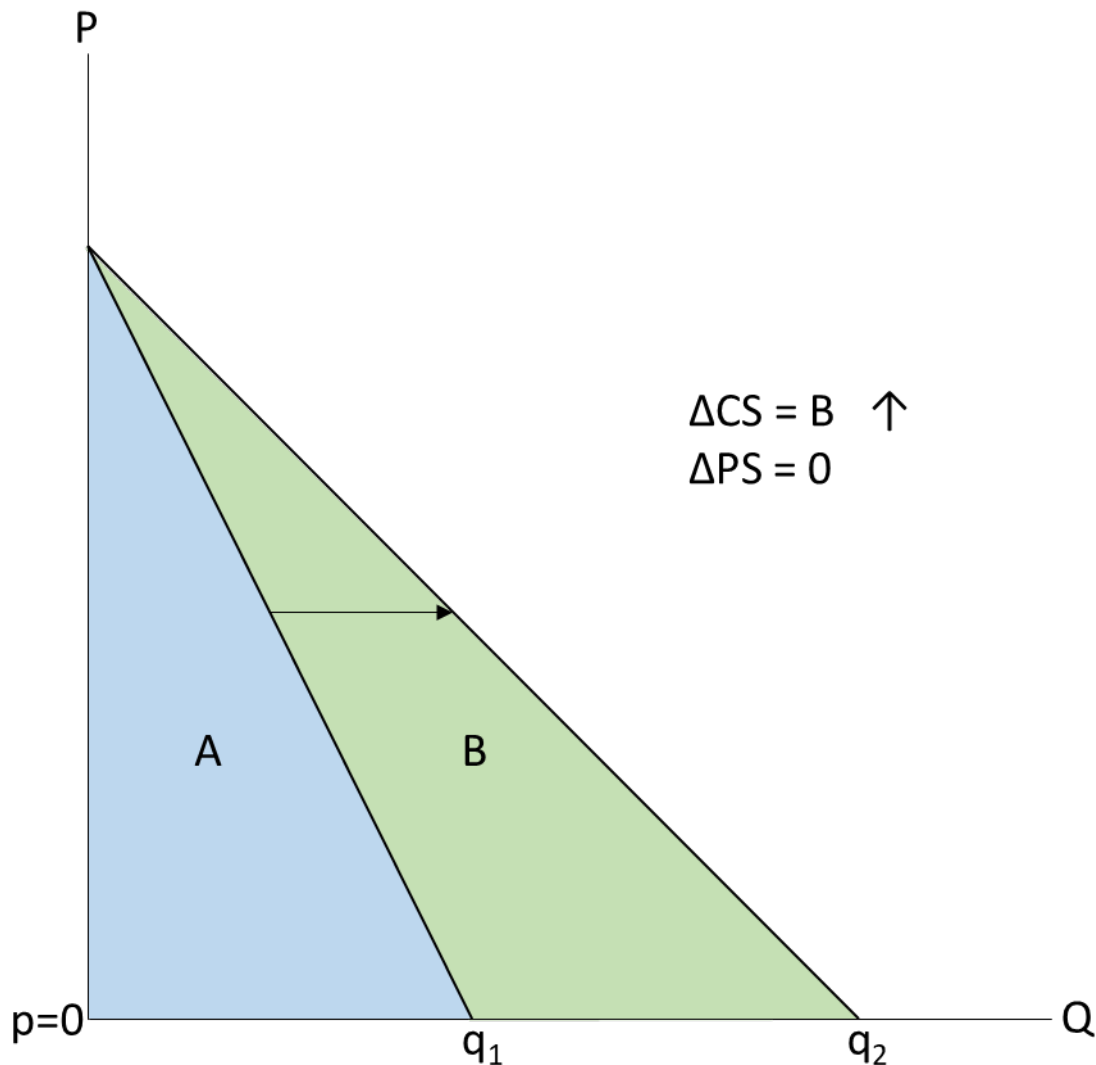


Figure 3 Changes in consumer surplus and producer surplus from a shift in demand curve for digital goods (Brynjolfsson et al., 2019)

Third, consider digital goods which substitute for physical goods and services. Increasingly, digital innovators are disrupting a number of incumbent sectors. A good example of such a transition is the encyclopedia industry. While previously, we used to spend thousands of dollars purchasing every volume of a physical encyclopedia (e.g., Britannica), people now obtain this information for free from Wikipedia. Britannica has stopped printing physical books due to a lack of demand. Wikipedia has an order of magnitude times more articles than Britannica ever had and its quality (accuracy) is

comparable for overlapping articles.⁹ Wikipedia has no revenues and is entirely built through contributions by volunteers. As a result of this transformation from a paid physical product to a digital good, consumer welfare increases while the contribution of the encyclopedia to GDP would fall. Therefore, consumers are better off, but GDP would go down. Many digital goods that we use currently, such as digital maps, music streaming websites and apps, and news websites have transitioned from physical forms. Not only are changes in GDP and consumer surplus not proportional, but they might also be negatively correlated for such products.

⁹ See Jim Giles, *Internet Encyclopaedias Go Head to Head*, 438 NATURE 900, 900–01 (2005).

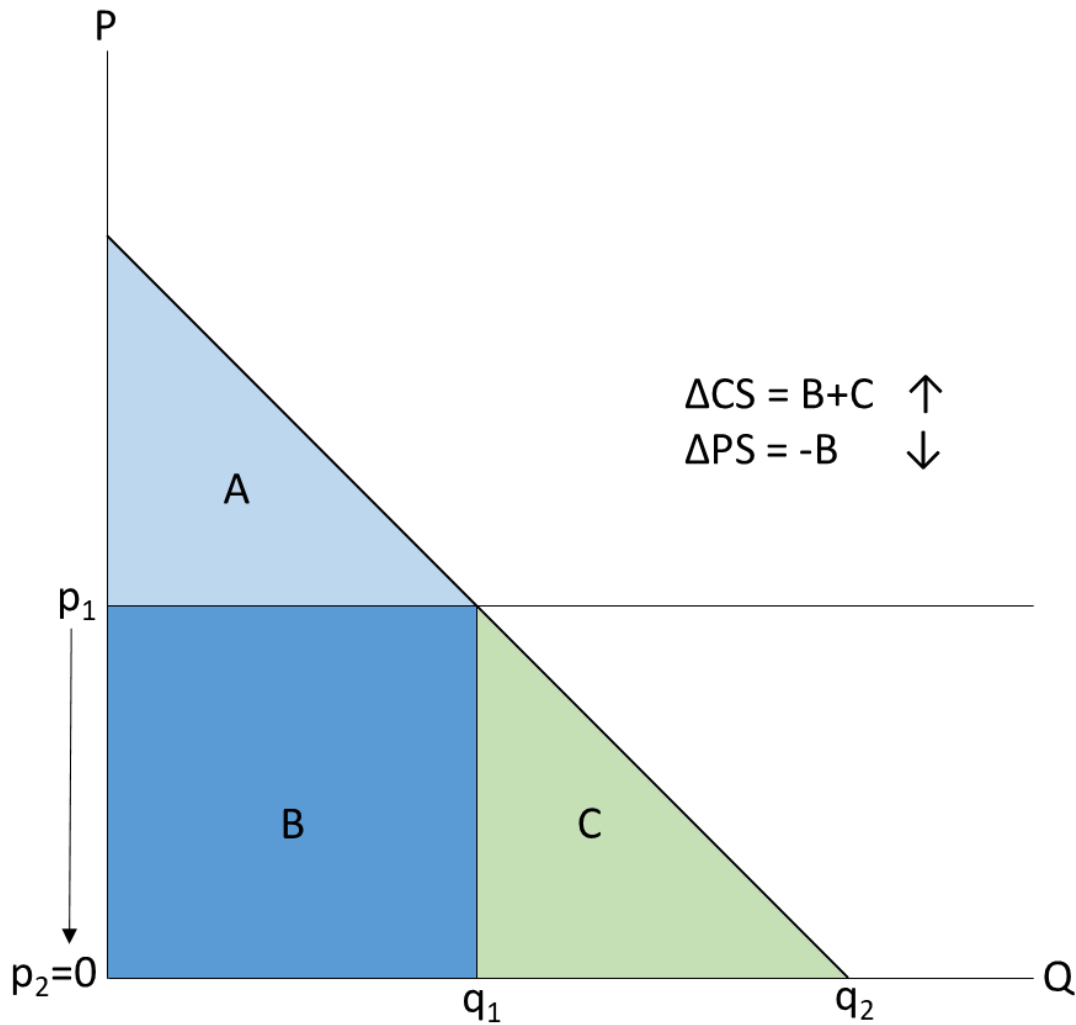


Figure 4 Changes in consumer surplus and producer surplus for goods transitioning from physical to digital (Brynjolfsson et al., 2019)

These examples illustrate the fact that GDP is not a good measure of consumer welfare for purely digital goods and goods transitioning from physical to digital. While the total surplus (consumer surplus + producer surplus) generated by such goods is a measure of societal well-being, the share of the producer surplus is much lower compared to consumer surplus.¹⁰

Some digital goods, such as Wikipedia, are truly free. However, the business

¹⁰ See Nordhaus, *supra* note 6, at 29–34.

models for most digital goods, such as Google and Facebook, are based on online advertisements. There have been attempts to measure the contribution of free digital goods to productivity by looking at the amount of revenues generated by advertisements. Total advertising revenue as a share of GDP has remained at around 1% for the last 100 years.¹¹ However, it is important to note that advertising revenues and consumer welfare are often not correlated.¹² Suppose there are two types of consumers who visit an online platform: one values it more and one values it less. The platform shows the same number of advertisements to both of these consumers and earns the same amount of revenues from them. However, the consumer who values the website more obtains much more welfare than the consumer who values the website less. Therefore, it is not sufficient to use advertising revenues of digital goods as a proxy for their contributions to consumer welfare.

II. PREVIOUS RESEARCH MEASURING CONSUMER SURPLUS OF DIGITAL GOODS

Recently, there has been increasing interest from academics in attempting to quantify the consumer surplus of digital goods or the internet as a whole. The early literature on this topic started with measuring consumer surplus from e-commerce, and recent literature has included social media and other free goods.

Brynjolfsson et al. quantify the economic impact of increased variety of products (also known as “the long tail”)¹³ on e-commerce platforms using a case study of books sold on Amazon.¹⁴ Previous research shows that a rise in e-commerce led to increased

¹¹ See Leonard Nakamura, Jon Samuels & Rachel Soloveichik, *Measuring the “Free” Digital Economy Within the GDP and Productivity Accounts* 41 (Bureau of Econ. Analysis, Working Paper No. 0146, 2017).

¹² See Michael Spence & Bruce Owen, *Television Programming, Monopolistic Competition, and Welfare*, 91 Q.J. ECON. 103, 104–05, 122–23 (1977).

¹³ See CHRIS ANDERSON, *THE LONG TAIL: HOW ENDLESS CHOICE IS CREATING ENDLESS DEMAND* (2006).

¹⁴ Erik Brynjolfsson, Michael D. Smith & Yu (Jeffrey) Hu, *Consumer Surplus in the Digital Economy: Estimating the Value of Increased Product Variety at Online Booksellers*, 49 MGMT. SCI. 1580 (2003); Anderson, *supra* note 13.

competition for sellers, lower prices for consumers (9–16% lower), and lower menu costs compared to traditional physical retailers.¹⁵ Brynjolfsson et al. found that increased product variety on online bookstores contributed to an increase in consumer surplus of between \$731 million and \$1.03 billion in the year 2000.¹⁶ This estimate was 7–10 times larger than the consumer surplus gains from increased competition and lower prices.

Austan Goolsbee and Peter Klenow estimate consumer welfare from accessing the internet by looking at the time spent online on various platforms.¹⁷ They assume that the time spent online at home (residential use of internet) is equivalent to time spent not working, i.e., the opportunity cost of spending time online is equivalent to the average wage that could be earned by someone. Such an approach based on time spent could be used to value free digital goods that do not have a positive price associated with them. They found that the consumer welfare gains from using internet at home is around \$3000 per person for the median US resident. They also found that a simple calculation using only money spent on internet access would lead to a significant underestimate of consumer welfare (less than \$100 per person).

Brynjolfsson and Oh extend the work of Goolsbee and Klenow by building a richer model of demand estimation to account for substitutability across products (e.g., internet and television) and incorporating quality improvements to the internet over time.¹⁸ They found that consumer surplus from free digital goods on the internet was over \$159 billion per year from 2007 to 2011. Out of this surplus, around \$106 billion per year was due to free digital goods online which amounted to 0.74% of annual GDP in that period. Similar

¹⁵ See Erik Brynjolfsson and Michael D. Smith, *Frictionless Commerce? A Comparison of Internet and Conventional Retailers*, 46 MGMT. SCI. 563 (2000).

¹⁶ See Brynjolfsson et al., *supra* note 14, at 1592.

¹⁷ See Austan Goolsbee and Peter J. Klenow, *Valuing Consumer Products by the Time Spent Using Them: An Application to the Internet*, 96 AM. ECON. REV. 108, 108 (2006).

¹⁸ See Erik Brynjolfsson & Joo Hee Oh, *The Attention Economy: Measuring the Value of Free Digital Services on the Internet* 5–6 (Oct. 2012) (unpublished manuscript).

to Goolsbee and Klenow, they found that ignoring the value of time spent on free digital goods would result in a much lower welfare gain of around \$4.2 billion per year.¹⁹

Chen et al. conduct a unique experiment to measure consumer welfare gains from using search engines (e.g., Google).²⁰ Instead of time spent online, they measure time saved by using search engines over offline alternatives. To do so, they conduct an experiment where they randomly assign participants to find answers to reference questions either online or in a library (offline). They find that the average web search took 7 minutes compared to an average offline search which took 22 minutes. Varian uses these estimates to calculate the consumer surplus from being able to use search engines in the US.²¹ Assuming that the time saved on online searches leads to increased time spent earning at work, he finds that Google search generates between \$65–\$150 billion of consumer surplus across the US per year. This is a significant amount considering that Google only earned around \$36 billion in ad revenue per year during that time period.

Greenstein and McDevitt estimate the consumer surplus from access to broadband internet over existing dial up internet using data on pricing and adoption of broadband.²² They find that the incremental consumer surplus from access to faster broadband internet was around \$4.8–\$6.7 billion in 2006.

Syverson updates several of these estimates from previous literature for 2015.²³ He estimates incremental consumer surplus from broadband internet over dial up internet

¹⁹ *Id.* at 14–15.

²⁰ Yan Chen, Grace YoungJoo Jeon & Yong-Mi Kim, *A Day Without a Search Engine: An Experimental Study of Online and Offline Searches*, 17 EXPERIMENTAL ECON. 512, 512–13 (2014).

²¹ Hal Varian, *Economic Value of Google 2*, <http://assets.en.oreilly.com/1/event/57/The%20Economic%20Impact%20of%20Google%20Presentation.pdf>.

²² See Shane M. Greenstein & Ryan McDevitt, *The Broadband Bonus: Estimating Broadband Internet's Economic Value*, 35 TELECOMM. POL'Y 617, 618 (2011).

²³ See Syverson, *supra* note 4, at 174–75 (citing Shane Greenstein & Ryan C. McDevitt, *The Broadband Bonus: Accounting for Broadband Internet's Impact on U.S. GDP* (Nat'l Bureau of Econ. Rsch., Working Paper No. 14758, 2009)).

for 2015 using the same approach as Greenstein and McDevitt and found consumer surplus to be \$17–\$26 billion.²⁴ Using an alternative demand estimation approach followed by Dutz et al., he finds that consumer welfare from broadband internet was \$96 billion in 2015.²⁵ Using the time use approach followed by he finds that consumer surplus from broadband internet was \$863 billion in 2015.²⁶

Table 1 presents a summary of estimates from selected literature studying consumer surplus from the digital economy. While these papers have computed these estimates using selected case studies and ad hoc approaches, a scalable general approach is needed to estimate consumer surplus from digital goods for a variety of sectors and over time.

Paper	Sector	Year	Estimate of consumer surplus (USD) for the US per year
(Brynjolfsson et al., 2003)	E-commerce (online bookstores)	2000	\$731 million to \$1.03 billion
(Goolsbee and Klenow, 2006)	All Internet	2005	\$3,000 per median US resident
(Brynjolfsson and Oh, 2012)	All Internet	2007-11	\$159 billion

²⁴ *Id.* at 175.

²⁵ *Id.* (citing MARK DUTZ, JONATHAN M ORSZAG & ROBERT WILLIG, THE SUBSTANTIAL CONSUMER BENEFITS OF BROADBAND CONNECTIVITY FOR US HOUSEHOLDS, INTERNET INNOVATION ALLIANCE, (2009), https://techliberation.com/wp-content/uploads/2010/05/CONSUMER_BENEFITS_OF_BROADBAND.pdf).

²⁶ *Id.* at 175–77 (citing Goolsbee & Klenow, *supra*, note 17).

(Chen et al., 2014), (Varian, 2011)	Google Search Engine	2011	\$65-\$150 billion
(Greenstein and McDevitt, 2011)	Broadband internet	2006	\$4.8-\$6.7 billion
(Syverson, 2017)	Broadband internet	2015	\$96 billion (using broadband prices), \$863 billion (using time use approach)

Table 1 Summary of literature estimating consumer surplus of digital goods

III. MEASURING CONSUMER SURPLUS USING MASSIVE ONLINE CHOICE EXPERIMENTS

Consumer welfare from free digital goods cannot be properly inferred from existing macro-economic measures such as GDP and productivity. Brynjolfsson et al. propose a novel way of directly measuring consumer welfare in the digital economy by conducting large-scale online choice experiments.²⁷ Discrete choice experiments have been widely used in the past to value non-market goods including environmental goods.²⁸ They have also been used in several legal cases to estimate valuation of features of digital products including smartphones.²⁹

(Brynjolfsson et al., 2019b) propose using single binary discrete choice experiments on representative samples of the population to measure valuations of digital goods.³⁰

²⁷ See Brynjolfsson et al., *supra* note 8, at 7252.

²⁸ See, e.g., Richard C. Bishop et. al., *Putting a Value on Injuries to Natural Assets: The BP Oil Spill*, 356 SCI 253, 253–54 (2017) (conducting such a valuation of injury to the environment after a large oil spill).

²⁹ See, e.g., *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034 (Fed. Cir. 2016).

³⁰ See Brynjolfsson et al., *supra* note 8, at 7250.

These choice experiments ask consumers to make a choice between keeping access to a good that they already use or giving it up for a certain period of time in exchange for monetary compensation. They vary the cash amounts across different groups of consumers and aggregate the responses from thousands of consumers to estimate demand curves. Such an approach could be used for free goods, where the area under the demand curve is an estimate for the consumer surplus generated by a free digital good. These choice experiments can be conducted with real monetary incentives so that responses are consequential and consumers respond truthfully.

Figure 5 shows results from a study measuring valuations of Wikipedia.³¹ The X axis shows the percentage of the sample who prefer to reject a cash option and continue to keep access to Wikipedia. The Y axis shows the monetary amounts (\$E) offered to the subjects, i.e. the willingness to accept (WTA) to give up Wikipedia for 1 year. As the cash incentives are increased, a larger percentage of the sample chooses to accept the cash and give up access to Wikipedia. The resulting demand curve is a downward sloping log-linear demand curve.

The median US resident values access to Wikipedia for 1 year at \$150. This implies that Wikipedia generates around \$15 billion in consumer welfare to readers in the US alone, not including the welfare enjoyed by contributors. This is substantial considering that Wikipedia is a truly free good, without any advertisements, and built entirely by volunteers contributing to it for free.

³¹ See Erik Brynjolfsson, Felix Eggers & Avinash Gannamaneni, *Measuring Welfare with Massive Online Choice Experiments: A Brief Introduction*, 108 AEA PAPERS & PROCS. 473, 475 (2018).

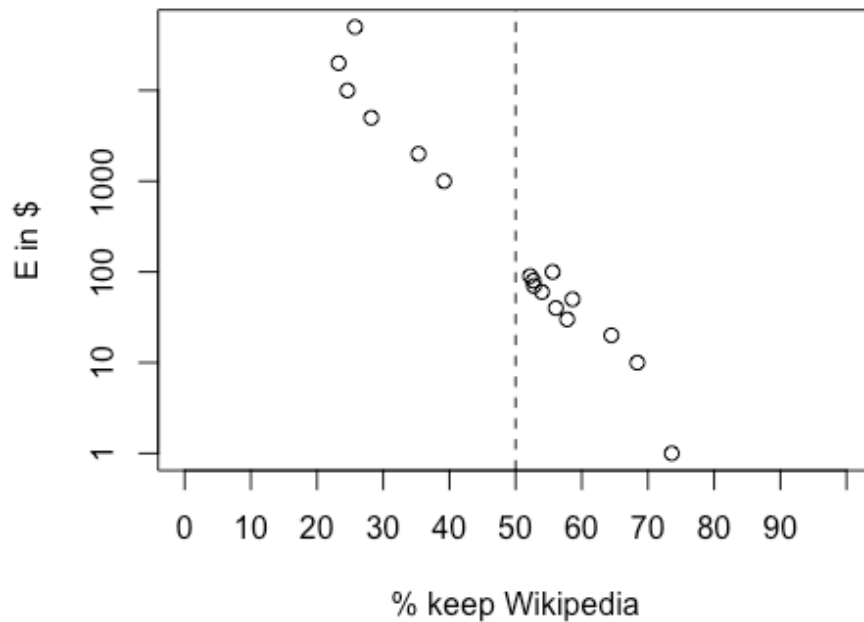


Figure 5 Willingness to accept (WTA) demand curve for giving up access to Wikipedia for 1 year
(Brynjolfsson et al., 2018)

Brynjolfsson et al. conduct an incentive compatible single binary discrete choice experiment to measure valuations of Facebook in the US.³² To do so, they recruit a representative sample of the US internet population and survey them. Some of the respondents are randomly selected and asked to comply with their choices, therefore they are incentivized to reveal truthful responses.

Facebook generated around \$48/month of consumer surplus to the median American in 2016. This figure fell to \$37 in 2017. Around 20% of the population is willing to give up Facebook for 1 month for as low as \$1. Around 20% of the population refuses to give up Facebook for 1 month for \$1000. There is a lot of heterogeneity in valuations implying that some groups benefit more than others. For example, women and older

³² See Brynjolfsson et al., *supra* note 8, at 7251.

people value Facebook more than other demographics. Such an approach could also be used to study substitution across digital platforms. For example, those who use Instagram or YouTube less value Facebook more, implying that Instagram and YouTube are partial substitutes to Facebook.

Allcott et al. conduct a similar experiment to measure the welfare effects of Facebook.³³ In their experiment, they randomize subjects into a control and a treatment group and the treatment group is offered monetary incentives to give up Facebook for 1 month. They measure a variety of outcome variables including economic valuations and subjective well-being scores. They find that the median Facebook user needed \$100 to give up Facebook for 1 month. They also find that over 20% of the sample had valuations greater than \$500.

These results indicate that social media platforms such as Facebook generate significant consumer welfare. A natural next question to ask is how much of this welfare is due to network effects on these platforms. To explore this, Benzell and Collis conduct a similar choice experiment where they ask subjects to make a choice between giving up specific connections on Facebook and monetary compensation.³⁴ More specifically, subjects are asked questions about their valuations for giving up friends belonging to a particular age-gender mix.

Figure 6 reports the network of friend values on Facebook for 12 demographic groups (women and men aged 18–65+). The node size is proportional to size of user base and the edges are proportional to the value of the connection. Valuations across the groups range from 4 cents to 65 cents a month (i.e. compensation required for the median consumer to disconnect with a demographic group on Facebook). The values flow to

³³ Hunt Allcott et al., *The Welfare Effects of Social Media*, 110 AM. ECON. REV. 629, 629–30 (2020).

³⁴ Seth Benzell and Avinash Collis, *How to Govern Facebook: A Structural Model for Taxing and Regulating Big Tech 3* (Aug. 10, 2020) (unpublished manuscript), <https://ssrn.com/abstract=3619535>.

older and female users, similar to the results in Brynjolfsson et al.³⁵ Benzell and Collis use these valuations to model network effects on Facebook and simulate welfare effects of various regulatory and tax scenarios.³⁶

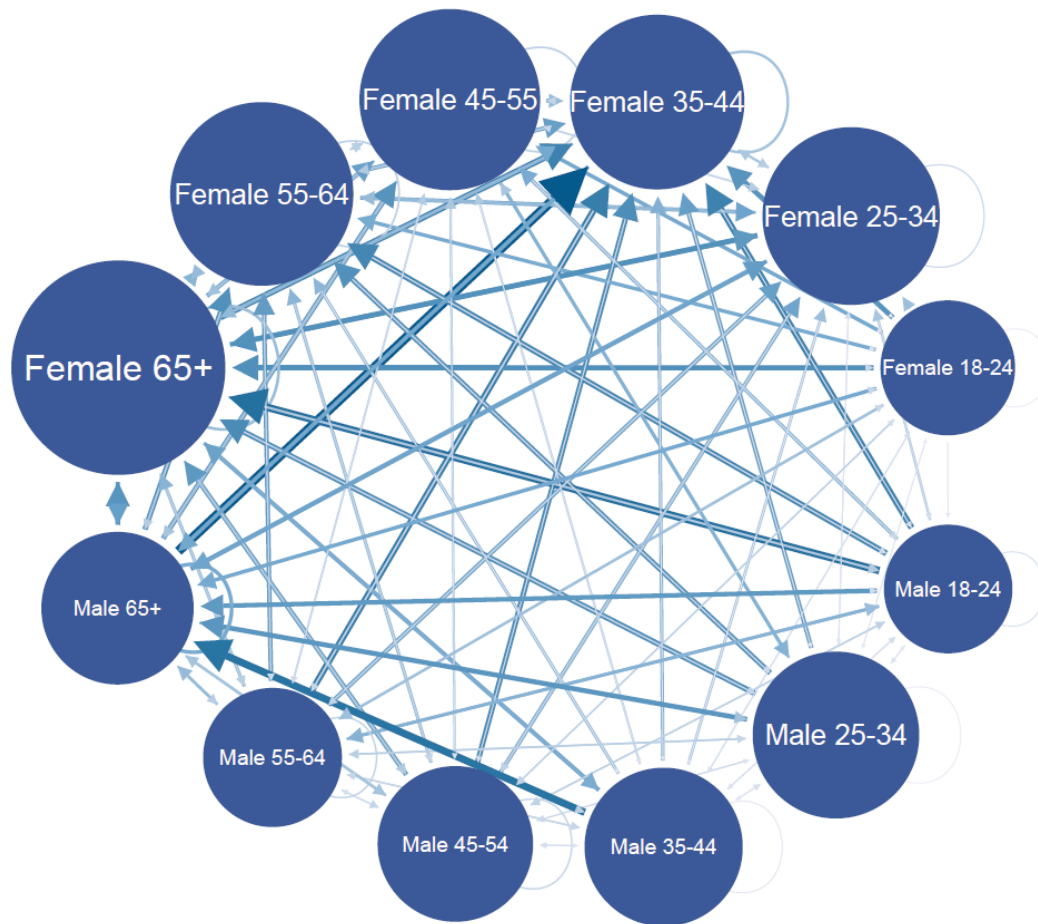


Figure 6 The network of friend values on Facebook (Benzell and Collis, 2020)

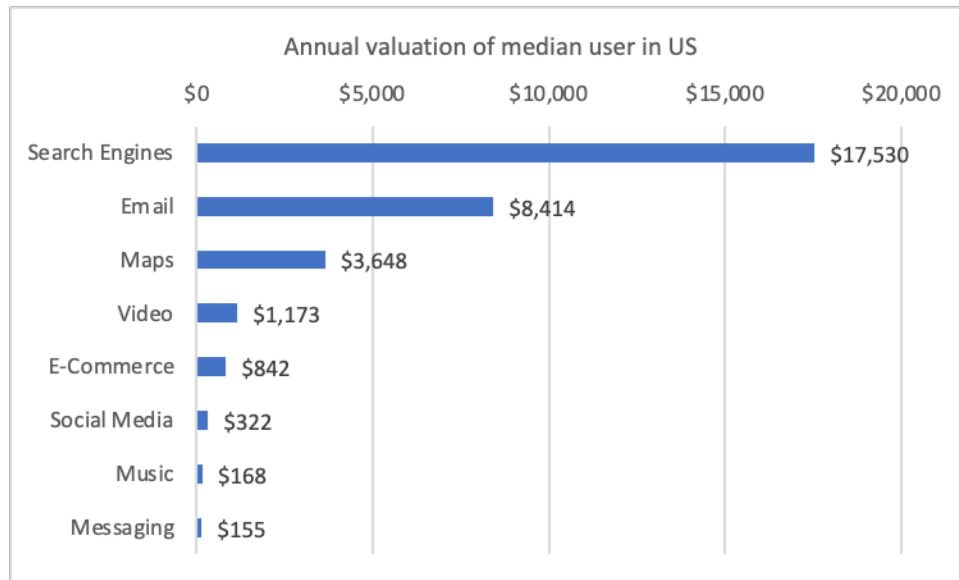
Brynjolfsson et al. also measure consumer welfare generated by the most popular digital goods and categories of digital goods in the US and Europe.³⁷ Figure 7 summarizes these valuations. Search engines generate the most consumer welfare, over \$17,000 per year in the US. Search engines are the first stop online for someone searching for

³⁵ Compare *id.* at 20–22 (describing findings demonstrating higher surplus for older and female users) with Brynjolfsson et al., *supra* note 8, at 7252 (noting same).

³⁶ See Benzell et al., *supra* note 34, at 26–28.

³⁷ See Brynjolfsson et al., *supra* note 8, at 7252.

information before they navigate to a specific URL. Emails and digital maps are also highly valued by consumers, generating several thousands of dollars in consumer welfare. These categories are followed by video streaming, e-commerce, social media, music streaming, and instant messaging. Recent evidence suggests that these valuations have increased post COVID-19.³⁸



³⁸ Diane Coyle & David Nguyen, *The Impact of Covid-19 on the Value of Online Goods*, VOXEU (July 10, 2020), <https://voxeu.org/article/impact-covid-19-value-online-goods>.

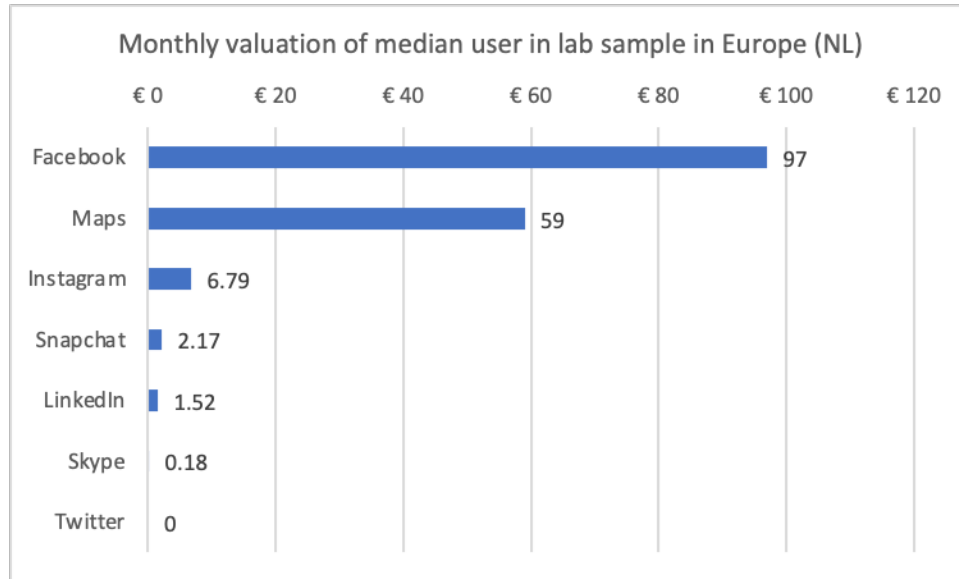


Figure 7 Valuations of popular digital goods and categories of digital goods in US and Europe
(Brynjolfsson et al., 2019b)

IV. CREATING A NEW MACROECONOMIC WELFARE METRIC CAPTURING WELFARE GAINS FROM DIGITAL GOODS

There are two types of goods that characterize the digital economy: free goods and new goods. Most digital goods are free to consumers and rapid innovation means that new digital goods are constantly added to the consumption basket. These features of the digital economy pose challenges to economic measurement. GDP does not properly capture the welfare gains from free goods and new goods.³⁹

Brynjolfsson et al. propose a new measure of the economy, GDP-B, which captures the *benefits* from both new and free goods.⁴⁰ The key idea behind their framework is the concept of total income that includes market income and imputed income from consumption of digital goods. This imputed income can be calculated through choice experiments as described in the previous section. Analyzing changes in total income

³⁹ SIR CHARLES BEAN, INDEPENDENT REVIEW OF UK ECONOMIC STATISTICS: FINAL REPORT 19–20 (2016), <https://www.gov.uk/government/publications/independent-review-of-uk-economic-statistics-final-report>.

⁴⁰ Erik Brynjolfsson et al., *GDP-B: Accounting for the Value of New and Free Goods in the Digital Economy* 3–4 (Nat'l Bureau of Econ. Rsch., Working Paper No. 25695, 2019).

across two years gives us changes in GDP-B.

Facebook was created in 2004. In 2016–17, it generated around \$40 in consumer welfare for the median American. Average GDP growth from 2003 to 2017 in the US was 1.83%. Accounting for the benefits of Facebook, GDP-B growth would have been an extra 0.04% per year in that period, or 1.87% per year. Using a similar analysis, WhatsApp has contributed to at least 1% in GDP-B growth in the Netherlands since its inception in 2010. In addition to free goods, new digital goods are frequently introduced and generate welfare to consumers. Consider the example of cameras on smartphones. Previously, consumers purchased film or digital cameras for photography. Then smartphones came embedded with cameras and people stopped purchasing digital cameras. To estimate this improvement in quality of phones due to the addition of cameras, Brynjolfsson et al. conducted an incentive compatible experiment where they offer real monetary incentives to subjects in the Netherlands to give up access to their smartphone camera.⁴¹ They find that smartphone cameras generate around €68/month in consumer welfare for the median subject in their sample. This is substantial considering that the cost to manufacture a smartphone camera is only \$20–\$35 (for the lifetime of the smartphone). Adding the welfare contributions of the most popular categories of digital goods (Figure 7) leads to an estimate of around \$32,000 in consumer welfare for the median American in 2017. Assuming that most of the welfare gains from these goods happened since 2010, the digital economy would have added over \$1.2 trillion annually in consumer welfare to GDP-B growth since 2010.

V. IMPACT OF DIGITIZATION ON SUBJECTIVE WELL-BEING

Despite evidence showing that digital goods generate substantial consumer welfare, questions are raised about their impact on other non-economic subjective well-

⁴¹ *Id.* at 42–45.

being metrics such as happiness and life-satisfaction. Welfare enhancing goods might still cause a reduction in subjective well-being. There is an active debate among academics regarding the impact of social media and screen time on subjective well-being. Current evidence is inconclusive with studies finding both negative and positive associations between social media usage and subjective well-being.

Using a longitudinal survey, Shakya and Christakis find that the use of Facebook is negatively associated with subjective well-being.⁴² Burke et al., find that the type of interactions on Facebook impact well-being rather than overall usage of Facebook. More specifically, directed communication between users is associated with increased well-being while passively consuming content is associated with decreased well-being.⁴³ Matching Facebook data with administrative records, Hobbs et al. find that having a stronger network on Facebook is associated with lower risk of mortality.⁴⁴ Using a large scale representative panel data, Orben et al., conduct a specification curve analysis where they run all plausible combinations of analyses and find no association between social media use and well-being.⁴⁵ Orben and Przybylski conduct a similar analysis to study the impact of digital technology use and well-being and find a small, economically insignificant, negative association.⁴⁶

Most of this current evidence is correlational and could suffer from reverse

⁴² Holly B Shakya & Nicholas A Christakis, *Association of Facebook Use with Compromised Well-Being: A Longitudinal Study*, 185 AM. J. EPIDEMIOLOGY 203, 203 (2017).

⁴³ See Moira Burke, Cameron Marlow & Thomas Lento, *Social Network Activity and Social Well-Being*, in ASS'N FOR COMPUTING MACHINERY, PROCEEDINGS OF THE SIGCHI CONFERENCE ON HUMAN FACTORS IN COMPUTING SYSTEMS 1909, 1909 (2010), <https://doi.org/10.1145/1753326.1753613>.

⁴⁴ William R. Hobbs et al., *Online Social Integration is Associated with Reduced Mortality Risk*, 113 PROCS. NAT'L ACAD. SCI. 12980, 12980 (2016).

⁴⁵ Amy Orben, Tobias Dienlin & Andrew K. Przybylski, *Social Media's Enduring Effect on Adolescent Life Satisfaction*, 116 PROCS. NAT'L ACAD. SCI. 10226, 10226 (2019).

⁴⁶ See Amy Orben & Andrew K. Przybylski, *The Association Between Adolescent Well-Being and Digital Technology Use*, 3 NATURE HUMAN BEHAVIOUR 173, 173 (2019).

causality.⁴⁷ Moreover, all of this evidence uses self-reported survey scales of technology use that are weakly correlated with actual usage.⁴⁸ To mitigate these issues, Collis and Eggers conduct a randomized controlled trial with University students over the course of an academic year to study the causal impact of social media usage on subjective well-being.⁴⁹ Subjects had to install a tracking device on their digital devices; therefore, they could obtain objective measures of technology use. The treatment group had restricted access to social media use for a full academic term. They find a null result on the impact of social media use on academic performance (grades) and subjective well-being (happiness, life satisfaction, and mental health). This shows that digital goods might generate a large amount of consumer welfare, while having no impact on subjective well-being.

CONCLUSION

Digital goods generate a large amount of consumer welfare but these welfare gains are not properly measured in existing macroeconomic measures. This chapter summarized existing research on measuring consumer welfare from digital goods. Recent research suggests that massive online choice experiments could be used to measure welfare gains from digital goods in a scalable manner. These estimates can be used to construct macro-economic welfare measures such as GDP-B that better reflect the reality in the digital economy. However, digital goods need not contribute to improved subjective well-being.

Brynjolfsson and Collis propose a spectrum of measures that capture all aspects of

⁴⁷ See Orben et al., *supra*, note 45.

⁴⁸ See David A. Ellis et al., *Do Smartphone Usage Scales Predict Behavior?*, 130 INT'L J. HUM.-COMPUT. STUD. 86, 88–90 (2019).

⁴⁹ See Avinash Collis & Felix Eggers, *Effects of Restricting Social Media Usage* (Jan. 14, 2020) (unpublished manuscript), <https://ssrn.com/abstract=3518744>.

well-being in the digital economy (Figure 8).⁵⁰ On one end, GDP is a very well-developed precise metric of production. On the other end, subjective well-being measures are meant to capture “true” well-being. However, they are subjective by definition and are not suitable by themselves for macroeconomic policymaking.⁵¹ GDP-B captures welfare gains from digital goods. Policymakers are advised to consult a dashboard of metrics containing all of these metrics rather than focusing on a single GDP metric.

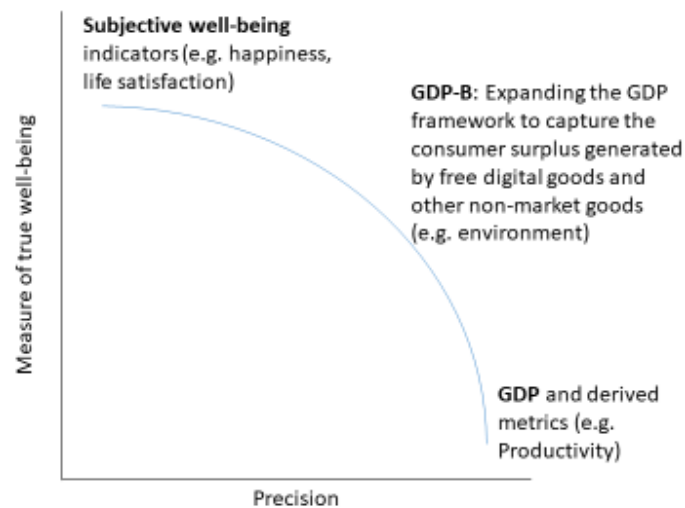


Figure 8 Spectrum of consumer welfare measures in the digital economy

⁵⁰ Erik Brynjolfsson & Avinash Collis, *How Should We Measure the Digital Economy?*, HARV. BUS. REV. (Nov.–Dec. 2019), <https://hbr.org/2019/11/how-should-we-measure-the-digital-economy>.

⁵¹ Wouter den Haan et. al., *Happiness and Wellbeing as Objectives of Macroeconomic Policy: Views of Economists*, VOXEU (Mar. 30, 2017), <https://voxeu.org/article/views-happiness-and-wellbeing-objectives-macro-economic-policy>.

Rent-Seeking and Public Choice in Digital Markets

Thomas A. Lambert

INTRODUCTION

As sociologist Max Weber famously observed, the government is unique among social institutions in that it alone possesses the right to use force to achieve its objectives.¹ Members of liberal societies have generally agreed that it should exercise that extraordinary authority only to protect citizens' rights or when there are strong reasons to believe that private ordering—individuals making their own decisions about how to use the things at their disposal—is likely to misallocate resources and thereby reduce social welfare. Common situations in which such resource misallocations are likely to occur include the classic market failures of externalities, public goods, information asymmetry, and market power.² Governmental commands backed by threat of force—*e.g.* environmental, tax, securities, and antitrust laws—have been justified as means of addressing each of these market failures.³

A market failure, though, is not a sufficient condition for a governmental fix. Because government interventions can themselves create losses, policymakers should always balance the expected welfare gain from averting a market failure against any welfare loss a contemplated intervention is likely to occasion. Moreover, such balancing

¹ Max Weber, *Politics as Vocation*, in FROM MAX WEBER: ESSAYS IN SOCIOLOGY 78 (H. H. Gerth & C. Wright Mills eds., 1958) (observing that government possesses “a monopoly on the legitimate use of physical force within a given territory”).

² An externality occurs when an actor does not bear all the cost or capture all the benefit of its actions, as with a polluting factory. *See* THOMAS A. LAMBERT, HOW TO REGULATE: A GUIDE FOR POLICYMAKERS 22–29 (2017). A public good is an amenity that is capable of being consumed without being depleted (non-rivalrous) and cannot be withheld from individuals that did not contribute to its creation (non-excludable)—*e.g.*, national defense. *See id.* at 60–66. Information asymmetry occurs when there is a great disparity between the information available to the parties to a transaction, as with a corporation's sale of stock to an investor. *See id.* at 185–91. Market power exists when there is an absence of competition because of monopoly or collusion. *See id.* at 135–45.

³ *See id.* at 29–57, 66–76, 145–53, 193–207.

should occur “at the margin,” meaning that the likely welfare gain (market failure loss averted) from each additional increment of restrictiveness should be compared to the welfare loss (from government failure) that the extra bit of restrictiveness is likely to produce. Oftentimes, contemplated government interventions will not be justified even though they are responding to legitimate market failures.

All this suggests that policymakers should carefully account for the ways that government interventions—like the markets they aim to correct—may systematically fail. As it turns out, government interventions regularly produce two sets of welfare losses. One set occurs when interventions misallocate resources because governmental planners lack the information or the information-processing abilities required to direct resources to their highest and best ends. Losses from this sort of “knowledge problem,” which was famously recognized by Nobel laureate F.A. Hayek, tend to increase as governmental directives become more prescriptive and less flexible, and as the governmental planners issuing them become further removed in time and space from the processes they are directing.⁴ In competition policy, *per se* structural rules—such as absolute bans on mergers involving firms of certain sizes, regardless of specific market conditions—are likely to produce significant knowledge problem losses.

Other welfare losses from government interventions arise because government’s right to coerce may be exploited to secure private benefits. The individuals charged with managing the government’s monopoly on force—*e.g.* legislators and bureaucrats—will tend to make decisions that inure to their own interests and may not seek to maximize the aggregate welfare of all citizens. Outside the government, individuals and groups will seek to procure governmental directives that benefit them, regardless of the directives’ effects on others. And because voters face limitations on their time, attention, and information-processing abilities, democratic checks on government are unlikely to

⁴ See generally F. A. Hayek, *The Use of Knowledge in Society*, 35 AM. ECON. REV. 519 (1945).

ensure that officials exercise state power with an eye toward maximizing overall social welfare. The branch of economics called “public choice” has predicted and documented these tendencies, so we may refer to this second set of welfare losses as “public choice concerns.”⁵

This chapter examines how public choice concerns, most prominently “rent-seeking” behavior, have been manifested in initiatives to regulate digital markets. The chapter first summarizes key insights from public choice and describes the phenomenon of rent-seeking. It then documents the existence of rent-seeking activity and other public choice concerns in the regulation of digital markets. It closes with a brief observation about how the structure of regulatory interventions may constrain or exacerbate rent-seeking and other public choice concerns in digital markets.

I. PUBLIC CHOICE AND RENT-SEEKING

Public choice is “the use of economic tools to deal with traditional problems of political science”—*i.e.* economic analysis of political behavior.⁶ Nobel laureate James Buchanan, one of the fathers of public choice theory, described it as “politics without romance.”⁷ In the romantic vision of democratic politics, citizens inform themselves of political candidates’ plans for exercising governmental power and then vote for those candidates whose plans they believe will be most beneficial. The elected candidates then enact legislation they believe will provide the greatest benefit to the citizenry as a whole. Bureaucrats, who answer to an elected executive who also seeks to maximize the citizenry’s welfare, enforce the laws and implement the programs the legislature has enacted, with an eye toward maximizing their effectiveness for the good of society.

⁵ See generally William F. Shughart II, *Public Choice*, in *THE CONCISE ENCYCLOPEDIA OF ECONOMICS* 427 (David R. Henderson ed., 2008).

⁶ Gordon Tullock, *Public Choice*, in *NEW PALGRAVE DICTIONARY OF ECONOMICS* (1987).

⁷ James Buchanan, *Politics Without Romance: A Sketch of Positive Public Choice Theory and Its Normative Implications*, in *THE THEORY OF PUBLIC CHOICE—II* 11 (J. Buchanan & R. Tollison eds., 1984).

Government's monopoly over the use of force is thus effectively harnessed to protect individual rights and prevent welfare losses that would otherwise result from market failures and other private ordering defects.

The problem with this romantic view of politics, public choice scholars assert, is that it assumes people make choices in the political arena differently than in other contexts.⁸ When people make decisions about buying and selling things, they usually seek to capture as much value as possible for themselves. In selecting professions, people typically seek personal happiness, which might involve working for the public good but often does not. Even in the area of non-pecuniary relationships, people select friends and mates not to benefit society as a whole but to make themselves happy. Not only do people tend to pursue their own interests, they typically do so in a logical, internally consistent fashion. Accordingly, traditional economics has started with the assumption that people are rational self-interest maximizers.

Rejecting the romantic vision of politics, public choice theory assumes that people do not shed their fundamental natures when stepping into the political arena.⁹ Public choice instead embraces the economist's "rational choice" model of human behavior and applies it to political decision-making.¹⁰ Citizens pursue their own interests in deciding how (and whether) to vote. They generally "vote their pocketbooks," and, given the low probability that any individual vote will sway an election outcome, they invest little in educating themselves on the candidates and the issues at stake. People running for office,

⁸ See James M. Buchanan, *The Public Choice Perspective*, in *POLITICS AS PUBLIC CHOICE, VOLUME 13 OF THE COLLECTED WORKS OF JAMES M. BUCHANAN* 21-22 (2000) (discussing *homo economicus* element of public choice perspective).

⁹ See James D. Gwartney & Richard E. Wagner, *Public Choice and the Conduct of Representative Government*, in *PUBLIC CHOICE AND CONSTITUTIONAL ECONOMICS* 7 (James D. Gwartney & Richard E. Wagner eds., 1988) ("Since there is no evidence that entrance into a voting booth or participation in the political process causes a personality transformation, there is sound reason to believe that the motivation of participants in the market and political processes is similar.").

¹⁰ See Shughart, *supra* note 5 (describing public choice theory).

who apparently derive utility from holding positions of power, take reasonable steps to secure their election. They embrace positions that will generate votes in their favor, which means the positions are either popular with voters generally or are favored by and salient to individuals or groups that are especially likely to provide campaign financing. Once in office, politicians make decisions to promote, support, or oppose legislation according to the decisions' effects on their reelection prospects. The non-elected bureaucrats charged with enforcing legislation or adopting and implementing regulations to fill its gaps make decisions that will benefit them personally. On discretionary matters, they tend to support outcomes that expand their agency's turf and budget and enhance their own prestige, authority, income, and future job prospects.

Public choice theory also makes predictions about the behavior of business organizations. Because the individuals who manage those organizations typically benefit when their companies do well, they will try to harness government power to enhance their firms' profits. And because firm managers are *rational* self-interest maximizers, they will take the tack most likely to generate success: they will play upon government officials' self-interest.

Economists refer to private entities' efforts to enhance their profits by co-opting government's extraordinary right to coerce as "rent-seeking."¹¹ The economic term "rent," first introduced by David Ricardo in the 19th century, means the payment to a factor of production in excess of the amount required to keep the factor in its current use.¹² For example, if an employee is paid a salary of \$100,000 but would remain in her current job for \$90,000, she is capturing \$10,000 in rent.¹³ Of course, there is nothing inherently troubling about pursuing rent; any employee who would stay in her job at her

¹¹ See generally David R. Henderson, *Rent Seeking*, in THE CONCISE ENCYCLOPEDIA OF ECONOMICS 427 (David R. Henderson ed., 2008).

¹² DAVID RICARDO, ON THE PRINCIPLES OF POLITICAL ECONOMY AND TAXATION (1817).

¹³ Henderson, *supra* note 11.

current salary but nevertheless asks for a raise is technically seeking rents. The term rent-seeking, however, is typically used more narrowly. The concept, which originated with Gordon Tullock in 1967 and was given its label by Anne Krueger in 1974, refers to efforts to capture above-normal returns not by creating additional value or bargaining with one's transacting partner for a greater share of the surplus created by a deal, but by harnessing the government's coercive powers.¹⁴ For example, firms may lobby legislators to provide a subsidy for a good they produce. They may seek imposition of a tariff on competing foreign goods. They may try to persuade legislators or regulators to enact a rule that imposes extra costs on their rivals. With all these endeavors, they seek to channel government's coercive power in a way that benefits them, and they do so by exploiting government officials' tendencies to act self-interestedly. As all the players in a rent-seeking scenario are acting as rational self-interest maximizers, rent-seeking is a classic public choice concept.

Rent-seeking reduces social welfare in several ways. First, it diverts resources away from the creation of wealth and toward its redistribution. The money a firm spends on lobbying, public relations, and other endeavors aimed at persuading government officials is not available for creative activities like research and product development. And it is not just money; as firm managers devote more time and attention to procuring governmental favors, less of each is available for productive endeavors. Second, to the extent rent-seeking reduces market competition—*e.g.* as rent-seekers hobble their rivals with regulations or tariffs—it causes a “deadweight loss” by misallocating productive resources away from their highest and best ends.¹⁵ Finally, to the extent rent-seeking

¹⁴ See Gordon Tullock, *The Welfare Costs of Tariffs, Monopolies and Theft*, 5 WESTERN ECON. J. 224 (1967); Anne O. Krueger, *The Political Economy of the Rent-Seeking Society*, 64 AM. ECON. REV. 291 (1974).

¹⁵ Market competition forces sellers to lower their prices toward the level of their cost. Sellers who face less competition can charge higher prices by producing less (so that the market-clearing price rises). When sellers fail to produce units whose cost of production and distribution is less than the value the units would create for the buyers who would purchase them, there is a loss in welfare. See LAMBERT, *supra* note 2, at 143.

drives rivals from the market, it squanders their non-recoverable investments.¹⁶ For example, if a firm has installed specialized equipment but then finds itself driven out of business by some sort of protectionist regulation, the value of its equipment is destroyed.

Despite the fact that the policies and rules sought by rent-seekers routinely reduce social welfare, they are frequently enacted. There are several reasons for this. One is that voters, who have the power to punish legislators and bureaucrats who employ government's coercive power in a welfare-reducing manner,¹⁷ are often unaware of how those officials' decisions have harmed overall welfare—and the officials know it. As rational self-interest maximizers, voters will invest in information needed to exercise their voting right effectively only to the point at which the (decreasing) marginal benefit of additional information equals the (increasing) marginal cost of obtaining it. Because each individual vote is so unlikely to sway an election, the marginal benefit of additional information on how to vote is quite low, and so voters spend little to become informed.¹⁸ They rationally remain ignorant of how their elected officials are exercising government power, which frees those officials to make the decisions that benefit themselves even when those decisions reduce overall social welfare. Rent-seekers, in turn, are adept at ensuring that the decisions they prefer will somehow inure to the personal benefit of the government officials asked to make them.

Voters' rational ignorance interacts with another dynamic that makes rent-seeking initiatives particularly likely to succeed. The policies sought by rent-seekers always concentrate special benefits on their proponents, who therefore have an incentive to lobby for their adoption. Many times, however, the costs of the initiatives are distributed

¹⁶ See Herbert Hovenkamp, *Antitrust's Protected Classes*, 88 MICH. L. REV. 1, 18-19 (1989) (describing "WL3 losses" from monopoly rent-seeking).

¹⁷ Voters' ability to punish bureaucrats is indirect. Voters elect the executive, who exerts control over bureaucrats.

¹⁸ See Shughart, *supra* note 5 (discussing voters' rational ignorance).

broadly throughout society as a whole. A tariff, for example, concentrates a benefit on the domestic producers of a product—likely a small group—but imposes costs in the form of slightly higher prices on all the domestic consumers of that product—likely a large group. The total cost of the tariff may well exceed the benefit to the domestic firms it favors, but because each consumer bears just a tiny portion of that cost, no one is willing to incur the cost of counter-lobbying against the tariff. After all, anyone who did so would bear all the cost of her lobbying while capturing only a small portion of any benefit produced by her efforts.¹⁹ Public choice thus predicts that policies involving “concentrated benefits and diffused costs” will be enacted even when they are, on the whole, welfare-reducing.

Of course, lobbying for a special benefit at the expense of the general public is difficult. Consumers may withhold business from firms they think are abusing government power, and, despite voters’ rational ignorance, government officials will want to avoid any appearance that they are favoring the interests of a few over those of the public at large. Rent-seekers may therefore seek to hide behind groups that share their policy goals but for public-spirited, rather than self-interested, reasons. Bruce Yandle has dubbed this dynamic the “bootleggers-and-Baptists” syndrome, in honor of the two groups that in the early 20th century pushed hardest for liquor prohibition.²⁰ Baptists, who emphasized the social evils of alcohol, made a passionate and public “pro-social” case for prohibition. Bootleggers promoted prohibition too, but did so behind the scenes and in the hopes of squelching competition and earning monopoly profits on their illegal products.

Taken together, voters’ rational ignorance, the fact that protectionist rules often create concentrated benefits but diffused costs, and the bootleggers-and-Baptists dynamic render rent-seeking an often successful strategy for enhancing private profits.

¹⁹ See generally MANCUR OLSON, JR., *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF AND GROUPS* (1965).

²⁰ Bruce Yandle, *Bootleggers and Baptists—The Education of a Regulatory Economist*, 7 (3) *REGULATION* 12 (1983).

And success is especially likely when the officials wielding government power have broad discretion, regular contact with those they regulate, and little direct political accountability. That combination frequently exists when a government agency is charged with continual oversight of some narrow sector of the economy. A key insight of public choice theory is that such agencies tend to become “captured” by their regulatees and end up exercising their discretionary authority in a manner that preserves or enhances the regulatees’ profits by protecting them from competition.²¹ In exchange, the regulatees provide benefits—from personal affection, to perks, to future job prospects—to the officials wielding power. Once again, all individuals are pursuing their own interests.

Having laid the foundation, we turn now to consider some recent examples of rent-seeking activity and other public choice concerns in the regulation of digital markets.

II. RENT-SEEKING IN DIGITAL MARKETS

The regulation of digital markets presents all sorts of opportunities for rent-seeking, and examples of such behavior abound. While there are many different ways to co-opt the government’s coercion right to secure a private benefit, most instances of rent-seeking fall into two categories: seeking some sort of subsidy or seeking to foreclose competition. Parts A and B of this Section describe recent examples of those two strategies. Part C then considers why such strategies may succeed in digital markets even when the policies being sought would reduce overall welfare.

A. Procuring a Subsidy

Two prominent examples of firms’ seeking to exploit government power over digital platforms to procure some sort of subsidy are the campaign by traditional news publishers to extract payment from Google and Facebook and the efforts of certain

²¹ See George Stigler, *The Theory of Economic Regulation*, 2(1) BELL J. ECON. & MGT. SCI. 3, 3 (1971) (observing that in regulated industries, “as a rule, regulation is acquired by the industry and is designed and operated primarily for its benefits”).

software and digital content providers—most notably, music streaming service Spotify and video game producer Epic Games—to free-ride off the investments Apple and Google have made to attract users to their mobile ecosystems.

1. News Publishers and Payment for Snippets

The newspaper industry is struggling. In 2018, newspaper circulation in the U.S. fell to its lowest level since 1940, and between 2008 and 2018, revenues at U.S. newspapers fell from \$37.8 billion to \$14.3 billion, a 62% decline.²² During the same period, U.S. newsroom employment dropped by nearly half, from 71,000 to 38,000 workers.²³ Similar trends are occurring across the globe.²⁴

The primary reason for newspapers' difficulties is competition created by the Internet.²⁵ Newspapers' revenues from classified advertisements plummeted as websites

²² Elizabeth Grieco, *Fast Facts about the Newspaper Industry's Financial Struggles as McClatchy Files for Bankruptcy*, PEW RESEARCH CENTER (Feb. 14, 2020), <https://www.pewresearch.org/fact-tank/2020/02/14/fast-facts-about-the-newspaper-industrys-financial-struggles/>.

²³ *Id.*

²⁴ E.g. Esther Kezia Thorpe, *How People in the UK Are Accessing News: 6 Key Findings*, DIGITAL PUBLISHING NEWS, (Aug. 6, 2019), <https://whatsnewinpublishing.com/how-people-in-the-uk-are-accessing-news-6-key-findings/> (reporting that UK national newspaper circulation declined 52.5% between 2010 and 2018); Von Cordt Schnibben, *Newspaper Circulation Declines Hit German Papers a Decade after America*, DER SPIEGEL (Aug. 13, 2013), <https://www.spiegel.de/international/germany/circulation-declines-hit-german-papers-a-decade-after-america-a-915574.html> (reporting 30% declines in readerships of major German cities' local newspapers from 2003 to 2013, with rates of decline accelerating); L. Granwal, *Newspapers Australia—Statistics and Facts*, STATISTA (Sept. 10, 2019), <https://www.statista.com/topics/5109/newspaper-industry-in-australia/>; *Japanese Newspaper Circulation Drops by More than 10 Million Since 2000*, NIPPON.COM (Aug. 6, 2019), <https://www.nippon.com/en/japan-data/h00507/japanese-newspaper-circulation-drops-by-10-million-since-2000.html>.

²⁵ At least in the U.S., a contributing factor may be that trust in the mainstream news media has eroded over time. In the early 1970s, the Gallup organization began polling Americans about their trust in mass media. Early polls found that around seven-in-ten Americans trusted the media a “great deal” or “fair amount” (68% in 1972, 69% in 1974, 72% in 1976). In 2019, the figure had fallen to 41%, up from a low of 32% in 2016. The partisan divide in media trust is stark, with 69% of Democrats, 36% of independents, and only 15% of Republicans expressing a “great deal” or “fair amount” of trust in the media. See Megan Brenan, *Americans' Trust in Mass Media Edges Down to 41%*, GALLUP (Sept. 26, 2019), <https://news.gallup.com/poll/267047/americans-trust-mass-media-edges-down.aspx>. These figures correlate somewhat with the political leanings of journalists. In 1971, the breakdown of journalists belonging to a political party was 35.5% Democrat versus 25.7% Republican. By 2002, the composition had

like Craigslist, which offers consumers free classified advertising for most products and services, eroded newspapers' ability to charge monopoly rates.²⁶ It did not help that newspapers cannibalized their own classified revenues by creating sites like Cars.com and Autotrader.com.²⁷ With respect to non-classified advertising, the Internet has cut into newspapers' revenues by dramatically expanding the number of ad placement options available to advertisers. In the competition for consumer attention—advertisers' chief concern—physical newspapers must contend with the entire Internet, and even the digital versions of newspapers must vie with millions of non-news websites.

In light of the challenges the Internet has created for their advertising-focused funding model, newspapers have sought to employ the government's coercive power to increase their revenues. Outside the U.S., media groups have successfully lobbied for rules requiring Google and Facebook to make payments to newspapers. News organizations in Germany, France, and Spain procured copyright law amendments requiring the platforms to pay licensing fees when they display excerpts or photographs from a publisher's news articles.²⁸ In Germany, Google was able to avoid such fees by procuring liability releases from publishers, which found that traffic to their websites would plunge without Google's help in directing readers to them.²⁹ The Spanish

shifted to 35.9% Democrat versus 18% Republican. And by 2013, the balance was 28.1% Democrat to 7.1% Republican. See Chris Cillizza, *Just 7 Percent of Journalists are Republicans. That's Far Fewer than even a Decade ago.*, WASH. POST (May 6, 2014), <https://www.washingtonpost.com/news/the-fix/wp/2014/05/06/just-7-percent-of-journalists-are-republicans-thats-far-less-than-even-a-decade-ago/>.

²⁶ From 2000 to 2012, U.S. newspapers' classified revenue dropped from \$19.6 billion in 2000 to \$4.6 billion in 2012. See John Reinan, *How Craigslist Killed the Newspapers' Golden Goose*, MINN. POST. (Feb. 3, 2014), <https://www.minnpost.com/business/2014/02/how-craigslist-killed-newspapers-golden-goose/>.

²⁷ See Jack Shafer, *Don't Blame Craigslist for the Decline of Newspapers*, POLITICO (Dec. 13, 2016), <https://www.politico.com/magazine/story/2016/12/craigslist-newspapers-decline-classifieds-214525>.

²⁸ Eric Auchard, *Google to Shut Down News Site in Spain over Copyright Fees*, REUTERS (Dec. 11, 2014), <https://www.reuters.com/article/us-google-spain-news/google-to-shut-down-news-site-in-spain-over-copyright-fees-idUSKBN0JP0QM20141211>).

²⁹ *Id.*

legislature foreclosed that possibility by declaring that Spanish publishers' rights to license fees was "inalienable," leading Google to remove its Google News service from its Spanish site.³⁰

When the French government required Facebook and Google to pay for the use of photos and snippets, the two companies again sought to procure the sort of liability releases used in Germany.³¹ For French publishers that did not release Google from liability for the display of snippets and photos from their news stories, Google began displaying only titles and URLs linking to the stories.³² Publishers then complained that such a display format reduces their traffic, whereupon the French competition authority entered an interim order requiring Google to continue displaying snippets in accordance with publishers' wishes.³³ At least temporarily, then, French publishers have succeeded in persuading the government to force Google and Facebook to display the snippets publishers believe will maximize their traffic *and* to pay the publishers for use of those snippets.

News publishers in Australia have achieved a similar outcome using competition law rather than copyright. In late 2017, after an intense lobbying campaign by news publishers including Rupert Murdoch's News Corporation, the Australian government directed the Australian Competition and Consumer Commission (ACCC) to investigate whether multinational digital platforms—chiefly, Google and Facebook—were abusing their market power.³⁴ The Commission released a Preliminary Report on its findings in

³⁰ *Id.*

³¹ See AFP, *Facebook Refuses to Pay French Media for Links*, THE LOCAL.FR (Oct. 26, 2019), <https://www.thelocal.fr/20191026/facebook-refuses-to-pay-french-media-for-links>.

³² *Id.*

³³ Natasha Lomas, *France's Competition Watchdog Orders Google to Pay for News Reuse*, TECHCRUNCH (Apr. 9, 2020), <https://techcrunch.com/2020/04/09/frances-competition-watchdog-orders-google-to-pay-for-news-reuse/>.

³⁴ See Anne Davies, *World Watches as Australian Regulator Rules on Facebook and Google*, THE GUARDIAN (Dec. 2, 2018), <https://www.theguardian.com/media/2018/dec/03/world-watches-australian-regulator-facebook->

December 2018³⁵ followed by a Final Report in June 2019.³⁶ In the Final Report, the Commission recommended that Google and Facebook collaborate with news publishers to produce a voluntary code of conduct that would include an obligation on the part of the platforms to negotiate a revenue-sharing arrangement with news publishers whose snippets they displayed.³⁷ In December 2019, the Australian government accepted that recommendation and directed the ACCC to see that such a voluntary code was negotiated by November 2020.³⁸

In April 2020, shortly before Google was to report its progress in negotiating the voluntary code, the Australian government changed course and directed the ACCC to set forth *mandatory* rules requiring digital platforms to share their advertising revenue with news publishers and to provide the publishers with advance notice of any algorithm changes that could affect page rankings and displays. The government cited news publishers' loss of advertising revenue due to the COVID-19 pandemic as a basis for its abrupt shift to a mandatory code.³⁹ In announcing the change, Australian Treasurer Josh Frydenberg acknowledged the Spanish and French experiences in which Google and

google.

³⁵ AUSTRALIAN COMPETITION AND CONSUMER COMMISSION, DIGITAL PLATFORMS INQUIRY PRELIMINARY REPORT (Dec. 2018), <https://www.accc.gov.au/system/files/ACCC%20Digital%20Platforms%20Inquiry%20-%20Preliminary%20Report.pdf>.

³⁶ AUSTRALIAN COMPETITION AND CONSUMER COMMISSION, DIGITAL PLATFORMS INQUIRY FINAL REPORT (June 2019), <https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>.

³⁷ *Id.* at 32. The code was to include a commitment that “where the digital platform obtains value, directly or indirectly, from content produced by news media businesses, that the digital platform will fairly negotiate with news media businesses as to how that revenue should be shared, or how the news media businesses should be compensated.” *Id.*

³⁸ See Press Release, Josh Frydenberg, Response to Digital Platforms Inquiry, Treasurer of the Commonwealth of Australia (Dec. 12, 2019) <https://ministers.treasury.gov.au/ministers/josh-frydenberg-2018/media-releases/response-digital-platforms-inquiry>.

³⁹ See Press Release, Josh Frydenberg, ACCC Mandatory Code of Conduct to Govern the Commercial Relationship Between Digital Platforms and Media Companies, Treasurer of the Commonwealth of Australia (Apr. 20, 2020), <https://ministers.treasury.gov.au/ministers/josh-frydenberg-2018/media-releases/accc-mandatory-code-conduct-govern-commercial>.

Facebook removed news snippets in response to payment obligations, and he insisted that Australia would avoid such evasion to “become the first country in the world to successfully require payment for content.”⁴⁰ The ACCC unveiled a draft of its mandatory code on July 31, 2020.⁴¹

Throughout their lobbying campaigns, news organizations have insisted that digital platforms are unfairly taking and profiting from their content.⁴² But news publishers can easily prevent digital platforms from displaying their published material. They can use the Robots Exclusion Standard (Robots.txt) to prevent content scraping,⁴³ and Google provides tools publishers may use to block snippets or control their length.⁴⁴ Despite these capabilities, newspapers typically refrain from restricting the display of snippets for an obvious reason: they benefit from the traffic digital platforms provide. Traditionally, newspapers paid to have headlines and short excerpts of content publicized in order to increase readership and thereby enhance sales, subscriptions, and advertising revenue.⁴⁵ Google and Facebook provide such publicity for free, and

⁴⁰ Josh Frydenberg, *Here’s News — We’ll Hold Facebook and Google to Account*, THE AUSTRALIAN (Apr. 20, 2020), <https://www.theaustralian.com.au/commentary/heres-news-well-hold-facebook-and-google-to-account/news-story/92f84d6e4442512249c3ac5dd8a0516d>.

⁴¹ See Exposure Draft of Treasury Laws Amendment (News Media and Digital Platforms Mandatory Bargaining Code) Bill 2020 (Austl.), <https://www.accc.gov.au/system/files/Exposure%20Draft%20Bill%20-%20TREASURY%20LAWS%20AMENDMENT%20%28NEWS%20MEDIA%20AND%20DIGITAL%20PLATFORMS%20MANDATORY%20BARGAINING%20CODE%29%20BILL%202020.pdf>.

⁴² See, e.g., *New Study Finds Google Receives an Estimated \$4.7 Billion in Revenue from News Publishers’ Content*, NEWS MEDIA ALLIANCE (June 10, 2019), <https://www.newsmediaalliance.org/release-new-study-google-revenue-from-news-publishers-content/> (asserting that Google “received an estimated \$4.7 billion in revenue in 2018 from crawling and scraping news publishers’ content – without paying the publishers for that use”).

⁴³ The Robots Exclusion Standard, or Robots.txt, is a standard used by websites to instruct web crawlers and other web robots about which areas of the website should not be processed or scanned. See About / robots.txt, ROBOTS.TXT, <https://www.robotstxt.org/robotstxt.html> (last visited Oct. 01, 2020).

⁴⁴ See GOOGLE SEARCH, ROBOTS META TAG, DATA-NOSNIPPET, AND X-ROBOTS-TAG SPECIFICATIONS, https://developers.google.com/search/reference/robots_meta_tag (last visited Oct. 01, 2020).

⁴⁵ See Mel Silva, *Responding to the Revised Publisher Code Process in Australia*, GOOGLE AUSTRALIA BLOG (May 3, 2020), <https://australia.googleblog.com/2020/05/responding-to-revised-publisher-code.html>.

newspapers obviously value it, as evidenced by the ease with which Google was able to procure liability releases for copyright infringement in Germany and France.⁴⁶

Far from simply protecting their content, which they could do themselves, powerful legacy media companies have succeeded in convincing the Australian government to force Google and Facebook to continue providing news publishers with free publicity, to pay the publishers when they do so, and to give the publishers information needed to secure a preferred place in search rankings. The media companies insist that these mandates are needed because the platforms' ad tech services extract an excessive portion of revenues from advertisements on the publisher's websites.⁴⁷ But the publishers need not utilize those services in selling display ads. They could sell their advertising space directly and pocket all the advertising revenue, or they could utilize competing intermediaries; as the ACCC acknowledged, competitors exist at every stage of the digital advertising sales chain.⁴⁸ News publishers that continue to use the digital platforms' ad tech services presumably do so to maximize their advertising revenues. They understand that Google's ad tech is extraordinarily efficient at allocating ad space to the advertisers willing to pay the most for it. Google, of course, demands compensation

⁴⁶ See Auchard, *supra* note 28. Germany's largest publisher, Axel Springer, abandoned a plan to block Google for refusing to pay for content after a consortium of around 200 German publishers saw their online traffic plunge after they blocked the company. *Id.* Traffic from Facebook also appears to be quite important to publishers. When Facebook experimented in several countries with moving professional news stories into a separate feed called Explore, publishers in the countries complained that traffic to their news sites plummeted. See Sheera Frenkel, Nicholas Casey & Paul Mozur, *In Some Countries, Facebook's Fiddling Has Magnified Fake News*, N.Y. TIMES (Jan. 14, 2018), <https://www.nytimes.com/2018/01/14/technology/facebook-news-feed-changes.html?smid=fb-nytimes&smtyp=cur>.

⁴⁷ See, e.g., NEWS CORP AUSTRALIA, SUBMISSION TO THE AUSTRALIAN COMPETITION AND CONSUMER COMMISSION: RESPONSE TO THE DIGITAL PLATFORMS INQUIRY PRELIMINARY REPORT 13, 30 (Mar. 1, 2019), <https://www.accc.gov.au/system/files/News%20Corp%20Australia%20%28March%202019%29.pdf>.

⁴⁸ See DIGITAL PLATFORMS INQUIRY FINAL REPORT, *supra* note 36, at 128. See also DANIEL S. BITTON & STEPHEN LEWIS, CLEARING UP MISCONCEPTIONS ABOUT GOOGLE'S AD TECH BUSINESS, Appendix A (May 5, 2020), <https://www.accc.gov.au/system/files/Google%20-%20Report%20from%20Daniel%20Bitton%20and%20Stephen%20Lewis%20%285%20May%202020%29.pdf> (cataloguing competitors at each level of ad tech stack).

for that valuable ad-matching service, but it charges similar fees to all web publishers that use its services—blogs, affinity group webpages, medical informational portals, and digital news sites alike. When news organizations lobby for special rules for their websites, they are simply seeking to use government power to extract rents.

The Australian news media's success in procuring an effective subsidy is unsurprising in light of public choice theory. It stands to reason that elected officials pursuing their own interests would more likely support news outlets than digital platforms. The former control press coverage and therefore have great sway over voters who, again, are unlikely to expend significant resources to inform themselves on election matters. Digital platforms may have money to spend on campaigns and can publicize or attempt to hide news stories, but they do not actually create the stories that may affect votes.

News organizations have also enlisted a chorus of "Baptists" to put a pro-social spin on their rent-extraction campaign. Throughout the newspaper publishers' campaign to force platforms to share advertising revenues and favor the publishers with advance notice of algorithm changes, various public interest groups have offered their support by emphasizing the importance of professional journalism to democracy itself.⁴⁹ Government officials who might normally be reluctant to take revenue from one set of private businesses and give it to another with greater political sway could therefore reassure themselves—and any skeptical voters—that they were simply taking the actions

⁴⁹ See, e.g., Victor Pickard, *Journalism's Market Failure Is a Crisis for Democracy*, HARV. BUS. REV. (Mar. 12, 2020), <https://hbr.org/2020/03/journalisms-market-failure-is-a-crisis-for-democracy>; Matt Stoller, *Tech Companies Are Destroying Democracy and the Free Press*, N.Y. TIMES (Oct. 17, 2019), <https://www.nytimes.com/2019/10/17/opinion/tech-monopoly-democracy-journalism.html>; *Ofcom: Newspapers Play 'Vital Role' In Democratic Society*, NEWS MEDIA ASS'N (June 21, 2018), <http://www.newsmediauk.org/News/ofcom-newspapers-play-vital-role-in-democratic-society>; Barry Lynn, *Google and Facebook are Strangling the Free Press. Democracy is the Loser*, THE GUARDIAN (July 26, 2018), <https://www.theguardian.com/commentisfree/2018/jul/26/google-and-facebook-are-strangling-the-free-press-to-death-democracy-is-the-loser>.

necessary to preserve democracy and promote the public good.

In the United States, news publishers have sought to extract rents from digital platforms by lobbying for an exemption from the antitrust laws.⁵⁰ Their efforts culminated in the introduction of the Journalism Competition and Preservation Act of 2018.⁵¹ According to a press release announcing the bill, it would allow “small publishers to band together to negotiate with dominant online platforms to improve the access to and the quality of news online.”⁵² In reality, the bill would create a four-year safe harbor for “any print or digital news organization” to jointly negotiate terms of trade with Google and Facebook.⁵³ It would not apply merely to “small publishers” but would instead immunize collusive conduct by such major conglomerates as Murdoch’s News Corporation, the Walt Disney Corporation, the New York Times, Gannet Company, Bloomberg, Viacom, AT&T, and the Fox Corporation.⁵⁴ The bill would permit news organizations to fix prices charged to digital platforms as long as negotiations with the platforms were not *limited* to price, were not discriminatory toward similarly situated news organizations, and somehow related to “the quality, accuracy, attribution or branding, and interoperability of news.”⁵⁵ Given the ease of meeting that test—since news

⁵⁰ Nitasha Tikau, *Publishers Could Get a New Weapon Against Facebook and Google*, WIRED (Mar. 7, 2018), <https://www.wired.com/story/bill-would-let-publishers-gang-up-versus-facebook-and-google/> (reporting that the “prime driver of the bill [creating an antitrust exemption for newspapers] is the News Media Alliance,” a trade association made up of 2,000 American and Canadian newspapers, which “lobb[ied] for such an exemption for a year”).

⁵¹ Journalism and Competition Preservation Act of 2018, H.R. 5190, 115th Cong. (2018), <https://www.congress.gov/bill/115th-congress/house-bill/5190/text>.

⁵² See Press Release from Office of U.S. Representative David Cicilline, CICILLINE, COLLINS INTRODUCE BILL TO PROVIDE LIFELINE TO LOCAL NEWS (Apr. 3, 2019), <https://cicilline.house.gov/press-release/cicilline-collins-introduce-bill-provide-lifeline-local-news>.

⁵³ Journalism and Competition Preservation Act of 2019, *supra* note 51, at §§ 3(a)(1), 3(b) (emphasis added). To qualify for the safe harbor, a news organization must simply (1) have a dedicated professional staff that creates original news, (2) be commercially marketed, and (3) produce content that is at least 25% current news or related material. *Id.*

⁵⁴ See John M. Yun, *News Media Cartels Are Bad News for Consumers*, COMPETITION POL’Y INT’L 2 (Apr. 2019).

⁵⁵ Journalism and Competition Preservation Act of 2019, *supra* note 51, at § 3(b).

organizations could always claim that higher payments were necessary to ensure journalistic quality—the bill would enable news publishers in the United States to extract rents via collusion rather than via direct government coercion, as in Australia.

2. App Developers’ Efforts to Free-Ride off the Investments of Mobile Platform Providers

A second example of firms’ seeking rents in the form of an effective subsidy involves attempts by Spotify, Epic Games, and other developers of digital applications to use antitrust law to take a free ride on investments made by the producers of mobile operating systems.

a. Mobile Operating Systems and Third-Party Apps

In January 2007, Apple released the first generation of its revolutionary iPhone—the “iPhone 2G”—with a number of preinstalled applications (“apps”) for accomplishing tasks or providing entertainment.⁵⁶ The iPhone’s operating system, iOS, was originally configured to prevent installation of non-Apple software, including apps.⁵⁷ Apple quickly realized, however, that the availability of additional, high-quality apps would enhance the iPhone’s attractiveness. On July 10, 2008, the day before the second-generation “iPhone 3G” was released, Apple debuted the App Store, a platform for distributing iPhone apps created by third-party software developers.⁵⁸ Originally launched with just 552 apps,⁵⁹ the App Store now hosts nearly 1.85 million, the vast majority of which are produced by third-parties.⁶⁰ The iPhone ecosystem, however, remains closed; Apple does

⁵⁶ See John Markoff, *Apple Introduces Innovative Cellphone*, N.Y. TIMES (Jan. 10, 2007), <https://www.nytimes.com/2007/01/10/technology/10apple.html>.

⁵⁷ *Id.*

⁵⁸ See Jason Snell & Peter Cohen, *Apple opens iTunes App Store*, MACWORLD (July 10, 2008), https://www.macworld.com/article/1134380/app_store.html.

⁵⁹ *Id.*

⁶⁰ See STATISTA, NUMBER OF APPS AVAILABLE IN LEADING APP STORES AS OF 1ST QUARTER 2020,

not license its iOS operating system to other hardware producers, and the App Store is the only outlet through which an iPhone user may license an app without violating the terms of use on the iOS and thereby voiding the warranties on the iPhone and disabling a number of its security features.⁶¹ Apple's revenue from the iPhone primarily comes from hardware sales,⁶² so it takes pains to ensure that all software operated on the iPhone—its iOS as well as any third-party apps—works flawlessly. Any software glitches would degrade the user experience, reducing iPhone sales.

Originally quite unique, the iPhone soon encountered close competition with the release of the first Android smartphones in 2008.⁶³ Android is an open-source operating system sponsored by Google and licensed for free to hardware producers throughout the world.⁶⁴ Google's compensation comes primarily in the form of enhanced advertising revenue, as Android products typically include Google Search, from which Google generates search ad revenue, and Google's Chrome browser, which enables Google to collect user data for targeted search ads.⁶⁵ Google also earns revenue from its own app store, Google Play, which is usually included in Android devices.⁶⁶ Unlike Apple's iOS,

<https://www.statista.com/statistics/276623/number-of-apps-available-in-leading-app-stores/> (last visited Oct. 01, 2020).

⁶¹ See Tim Worstall, *The Problem with Apple's Closed Apps Universe*, FORBES (Aug. 31, 2012), <https://www.forbes.com/sites/timworstall/2012/08/31/the-problem-with-apples-closed-apps-universe/#5894e2f9794b>.

⁶² See STATISTA, SHARE OF APPLE'S REVENUE BY PRODUCT CATEGORY FROM THE 1ST QUARTER OF 2012 TO THE 2ND QUARTER OF 2020, <https://www.statista.com/statistics/382260/segments-share-revenue-of-apple/> (last visited Oct. 01, 2020).

⁶³ See Christian de Looper, *From Android 1.0 to Android 10, Here's How Google's OS Evolved Over a Decade*, DIGITAL TRENDS (Aug. 24, 2019), <https://www.digitaltrends.com/mobile/android-version-history/>.

⁶⁴ See Kevin J. Delaney and Amol Sharma, *Google, Bidding for Phone Ads, Lures Partners*, WALL ST. J. (Nov. 6, 2007), <https://www.wsj.com/articles/SB119427874851482602>; Chris Hoffman, *Android Is "Open" and iOS Is "Closed" — But What Does That Mean to You?*, HOW-TO GEEK (June 20, 2017), <https://www.howtogeek.com/217593/android-is-open-and-ios-is-closed-but-what-does-that-mean-to-you/>.

⁶⁵ See Bogdan Petrovan, *How Does Google Make Money from Android?*, ANDROID AUTHORITY (Jan. 22, 2016), <https://www.androidauthority.com/how-does-google-make-money-from-android-669008/>.

⁶⁶ *Id.*

Android permits users to install apps acquired from sources other than the app store that is included with the operating system.⁶⁷

Apple and Google offer different value propositions to smartphone consumers. Because producers of Android-based products need not pay for the operating system (as Google's compensation comes primarily from advertising), Android devices tend to be cheaper than iPhones.⁶⁸ And as the operating system is open-source, Android permits innovation by smartphone producers and greater customization by users.⁶⁹ This openness, though, also means that Android products are more susceptible to viruses, malware, and other security risks.⁷⁰ When it comes to apps, Android offers more variety,⁷¹ as app review in Google's Play Store is less stringent than in Apple's App Store⁷² and Android app developers may also distribute outside the Play Store. Again, however, this openness comes at a cost: Android apps tend to be of lower quality than iOS apps, largely because app developers must support many more versions of Android than of iOS.⁷³ In

⁶⁷ See Hoffman, *supra* note 64.

⁶⁸ See Simon Hill, *Android vs. iOS: Which Smartphone Platform is the Best?*, DIGITAL TRENDS (May 10, 2020) (observing that Android phones tend to be more affordable than iPhones); Sean Keach, *Android Phones Nearly Three Times Cheaper than iPhone*, TRUSTED REVIEWS (Feb. 2, 2015), <https://www.trustedreviews.com/news/android-phones-nearly-three-times-cheaper-than-iphone-2924886>.

⁶⁹ See Hoffman, *supra* note 64.

⁷⁰ See Max Eddy, *SecurityWatch: Android vs. iOS, Which Is More Secure?*, PC MAGAZINE (Apr. 24, 2019); Lucas Mearian, *Android vs iOS security: Which is Better?*, COMPUTERWORLD (Aug. 7, 2017), <https://www.computerworld.com/article/3213388/android-vs-ios-security-which-is-better.html> (observing that "[w]hile all mobile devices have inherent security risks, Android has more vulnerabilities because of its inherent open-source nature, the slow pace with which users update the OS and a lack of proper app vetting").

⁷¹ See STATISTA, NUMBER OF APPS AVAILABLE IN LEADING APP STORES AS OF 1ST QUARTER 2020, <https://www.statista.com/statistics/276623/number-of-apps-available-in-leading-app-stores/> (last visited Oct. 01, 2020) (showing 2.56 million apps in Google Play versus 1.847 million in the App Store).

⁷² See Eddy, *supra* note 70; Yana Poluliakh & Victor Osadchiy, *What to Expect from the App Store and Google Play Store When You Launch Your First App*, YALANTIS, <https://yalantis.com/blog/apple-app-store-and-google-play-store/> (last visited Oct. 01, 2020); Mary Aleksandrova, *How to Publish Your App on App Store and Google Play? A Comprehensive Go-to-Market Guide*, EASTERN PEAK (Jan. 3, 2018), <https://easternpeak.com/blog/how-to-publish-your-app-on-app-store-and-google-play-comprehensive-go-to-market-guide/>.

⁷³ See Jerry Hildenbrand, *After 10 years, Android Apps Are Still Worse than their iOS Counterparts*, ANDROID

terms of users, Android barely edges out iOS in the United States, with 51.8% of smartphone subscriptions versus 47.4% for iOS, but it dominates globally, with a 74.14% share of global revenues, as compared to iOS's 25.16% share.⁷⁴

Both Apple and Google earn revenues through their app stores. Apple retains 30% of revenues from app licenses and in-app purchases of digital goods.⁷⁵ It earns no revenue, however, from distributing free apps, which are typically ad-supported; from the use of App Store apps to purchase physical goods and services such as household items, delivered food, and ride-sharing services; or from out-of-app purchases of digital goods that purchasers then enjoy on App Store apps, such as when a user who has downloaded a free streaming video app then subscribes to the relevant streaming service outside the app.⁷⁶ For in-app digital subscriptions, Apple's revenue share drops to 15% after the first year.⁷⁷ Google's revenue share from sales of Android apps through Google Play closely mirrors Apple's take through the App Store: 30% for paid apps and in-app purchases of digital goods, with in-app subscription takes falling to 15% after the first year.⁷⁸ Other Android app stores determine their own revenue shares. Some collect a lower percentage of revenues on app sales,⁷⁹ and some developers of paid Android apps

CENTRAL (Jan. 26, 2019), <https://www.androidcentral.com/10-years-later-and-android-apps-are-still-worse-ios-version>.

⁷⁴ See STATISTA, SUBSCRIBER SHARE HELD BY SMARTPHONE OPERATING SYSTEMS IN THE UNITED STATES FROM 2012 TO 2019, <https://www.statista.com/statistics/266572/market-share-held-by-smartphone-platforms-in-the-united-states/> (last visited Oct. 01, 2020); STATCOUNTER GLOBAL STATS, MOBILE OPERATING SYSTEM MARKET SHARE WORLDWIDE JUNE 2019-JUNE 2020, <https://gs.statcounter.com/os-market-share/mobile/worldwide> (last visited Oct. 01, 2020).

⁷⁵ See APPLE APP STORE, PRINCIPLES AND PRACTICES, <https://www.apple.com/ios/app-store/principles-practices/> (last visited Oct. 01, 2020). App developers set their own prices for apps sold through the App Store, subject to a few limitations by Apple. See *Apple Inc. v. Pepper et al.*, 587 U.S. 1514, 1529 (2019).

⁷⁶ See PRINCIPLES AND PRACTICES, *supra* note 75.

⁷⁷ See *id.*

⁷⁸ See GOOGLE SUPPORT, PLAY CONSOLE HELP, SERVICE FEES, <https://support.google.com/googleplay/android-developer/answer/112622?hl=en> (last visited Oct. 01, 2020).

⁷⁹ See Tim MacKenzie, *App Store Fees, Percentages, and Payouts: What Developers Need to Know*, TECHREPUBLIC (May 7, 2012), <https://www.techrepublic.com/blog/software-engineer/app-store-fees-percentages-and->

avoid fees altogether by distributing their own apps.⁸⁰

There are, of course, significant costs in running a third-party app store. Apart from developing and maintaining the technology required to produce apps, catalogue them and bring them to the attention of interested users, and process distribution and payment, platforms must ensure that the apps they distribute will work as described and will not create technological glitches for users. App stores create value for the developers whose apps they distribute by implicitly certifying that those apps are “safe and effective.” And that requires close examination of each app submitted for distribution, both free and paid. Apple’s vetting process is particularly rigorous,⁸¹ and consequently App Store apps are generally considered to be of higher quality than those distributed through Google Play and other Android app stores.⁸² Not surprisingly, then, distributing through the App Store is more lucrative for app developers.⁸³ In the third quarter of 2019, for example, the App Store generated revenue of \$14.2 billion on 8 billion first-time downloads, while Google Play earned just over half as much (\$7.7 billion) on nearly three times as many first-time downloads (21.6 billion).⁸⁴

b. Spotify’s Campaign Against Apple

Founded in 2006, Swedish music-streaming service Spotify has long benefited

payouts-what-developers-need-to-know/.

⁸⁰ See John Callahan, *Fortnite for Android Interview – Epic Games CEO Tim Sweeney on Breaking Away from Google Play*, ANDROID AUTHORITY (Aug. 8, 2018), <https://www.androidauthority.com/fortnite-for-android-interview-epic-games-893342/>.

⁸¹ See Kif Leswing, *Inside Apple’s Team that Greenlights iPhone Apps for the App Store*, CNBC (June 22, 2019), <https://www.cnbc.com/2019/06/21/how-apples-app-review-process-for-the-app-store-works.html>.

⁸² See *supra* notes 72–73 and accompanying text.

⁸³ See C. Scott Brown, *Top App Developers Make Gobs of Cash from Apple, Much Less from Google*, ANDROID AUTHORITY (June 18, 2019), <https://www.androidauthority.com/top-app-developers-apple-google-q1-2019-999970/>.

⁸⁴ SENSORTOWER, GLOBAL APP REVENUE GREW 23% YEAR-OVER-YEAR LAST QUARTER TO \$21.9 BILLION (Oct. 23, 2019), <https://sensortower.com/blog/app-revenue-and-downloads-q3-2019>.

from the services app stores provide. As of March 2020, Spotify had 286 million monthly active users, the vast majority of whom downloaded its app through Apple's App Store or Google Play.⁸⁵ Through the App Store alone, users have downloaded the Spotify app or an update to it more than 300 million times.⁸⁶ Around 55% of Spotify's active users use its free service.⁸⁷ As they pay nothing to Spotify, distributing to them generates no revenue for the App Store or Google Play. It does, however, make money for Spotify, which sells ads on its free service and can earn more as the number of free users grows.⁸⁸ Any revenues the app stores receive for certifying, marketing, and distributing Spotify's app would come from in-app subscriptions to Spotify's ad-free service, Spotify Premium.

Spotify, however, has made it difficult for the app stores that certify and distribute its app (and its many upgrades) to receive any compensation for their efforts. In 2016, it removed iOS users' ability to upgrade to its Spotify Premium service using Apple's in-app payment system ("In-App Purchase"), and it thereby circumvented the requirement to share revenue with Apple.⁸⁹ Users of the iOS app must leave the app and go to Spotify's webpage to purchase a Premium subscription. In the Android version of Spotify's app, users may upgrade to Premium by remaining in the app and submitting a credit card number directly to Spotify, but they may not use Google's more convenient in-app payment system, Google Play Billing, which would retain a share of revenue for Google.

⁸⁵ See SPOTIFY, COMPANY INFO, <https://newsroom.spotify.com/company-info/> (last visited Oct. 01, 2020).

⁸⁶ APPLE INC., ADDRESSING SPOTIFY'S CLAIMS (Mar. 14, 2019), <https://www.apple.com/newsroom/2019/03/addressing-spotifys-claims/>.

⁸⁷ See COMPANY INFO, *supra* note 85 (observing that 130 million of 286 million active monthly Spotify users are subscribers).

⁸⁸ See KRISTEN MAJEWSKI, SPOTIFY AD STUDIO, MEET YOUR AUDIENCE, <https://adstudio.spotify.com/meet-your-audience>.

⁸⁹ See Joan E. Solsman, *Apple fires back: Spotify Pays Fees on Less Than 1% of its Members*, CNET (June 24, 2019), <https://www.cnet.com/news/apple-fires-back-spotify-pays-fees-on-less-than-1-percent-of-members/>. Some other digital service providers, including Netflix for video streaming, have taken the same tack. See Nicole Nguyen, *How App Makers Break Their Apps to Avoid Paying Apple*, WALL ST. J. (June 28, 2020), <https://www.wsj.com/articles/how-app-makers-break-their-apps-to-avoid-paying-apple-11593349200>.

Both Google and Apple have continued to support Spotify's app and upgrades despite the lack of payment for doing so. Apple, however, has refused to allow Spotify to include an option for in-app payments that evade Apple's revenue share by foregoing Apple's In-App Purchase system. It has also refused to approve versions of Spotify's app that would explicitly direct users on how to sign up for Spotify Premium outside the app, and it has insisted that Spotify not directly notify app users about how to do so. Apple understands that allowing app developers to use a "freemium" model—*i.e.* a free-to-download app with the ability to upgrade to enhanced service for a fee—while using other in-app payment systems or directing users to pay for upgrades outside the app could quickly dry up its App Store revenues, which are used to cover the considerable cost of vetting, marketing, and distributing apps. Under the policies Spotify is demanding, any developer of a paid app could avoid contributing to the App Store by charging nothing for the app itself, locking all its functionality, and directing users outside the app to make payment and thereby unlock the app.

Since 2015, Spotify has engaged in an intensive effort to persuade government officials to force Apple to certify and distribute the Spotify app and updates without sharing in Spotify's revenues. The company first launched a lobbying campaign to procure legislation or regulation that would achieve its goals.⁹⁰ It arranged meetings with congressional leaders and hired a team of lobbyists to press the case that Apple's insistence on compensation for app distribution was a means to promote Apple's own streaming music service, Apple Music, over Spotify's.⁹¹ Spotify also pressed its case to

⁹⁰ See Tony Romm, *Spotify Makes Case Against Apple in Congress*, POLITICO (July 12, 2015), <https://www.politico.com/story/2015/07/spotify-makes-case-against-apple-in-congress-119976>.

⁹¹ According to a *Politico* report, lobbyists for Spotify held a number of "secretive congressional meetings" in 2015 to press their case against Apple. They met with, among others, staff members from the offices of Rep. Bob Goodlatte (R-VA), chair of the House Judiciary Committee; Rep. Tom Marino (R-PA), chair of House Judiciary's antitrust subcommittee; and Sen. Al Franken (D-MN), a member of the antitrust subcommittee of the Senate Judiciary Committee. *Id.* Spotify hired four outside lobbying shops to assist with its efforts, *id.*, spending \$740,000 on federal lobbying in 2015. See David McCabe, *Spotify Picks up*

officials from the U.S. Department of Justice and to the Federal Trade Commission's Technology Task Force.⁹² And in March 2019, with much fanfare,⁹³ it filed an antitrust complaint against Apple in the European Union.⁹⁴

Spotify's efforts are paying off. On June 16, 2020, the European Commission announced that it had opened an investigation of Apple's App Store policies.⁹⁵ It will examine whether Apple has violated European antitrust law by (1) refusing to allow payments within the app using non-Apple payment methods and (2) restricting app developers' ability to instruct users to make payments outside the app.⁹⁶ The Commission will determine whether these policies, which are aimed at preventing free-riding on Apple's efforts to certify, market, and distribute apps, nevertheless "breach EU competition rules on anticompetitive agreements between companies . . . and/or on the abuse of a dominant position."⁹⁷ The impetus for its investigation, the Commission explained, was Spotify's 2019 complaint along with a similar complaint by "an e-book and audio book distributor."⁹⁸

Spotify's campaign against Apple appears to be an effort to force the company—

Lobbyist Amid Fight with Apple, THE HILL (August 12, 2016), <https://thehill.com/policy/technology/291315-spotify-picks-up-lobbyist-amid-fight-with-apple>.

⁹² See Diane Bartz & Stephen Nellis, *Exclusive: Antitrust Probers in Congress Ask Spotify to Detail Alleged Apple Abuses – Sources*, REUTERS (Oct. 4, 2019), <https://www.reuters.com/article/us-tech-antitrust-apple-exclusive/exclusive-antitrust-probers-in-congress-ask-spotify-to-detail-alleged-apple-abuses-sources-idUSKBN1WJ1Y3>.

⁹³ When it filed its claim with the EU, Spotify launched a website entitled "Time to Play Fair," <https://www.timetoplayfair.com>, that is aimed at making its case to the public. The website includes a summary of Spotify's allegations and a "media kit" for reporters.

⁹⁴ See Mark Sweney, *Apple's 30% App Store Commission Unfair, Spotify Claims*, THE GUARDIAN (Mar. 13, 2019), <https://www.theguardian.com/technology/2019/mar/13/spotify-claim-apple-30-percent-app-store-commission-unfair-european-commission-complaint>.

⁹⁵ See EUROPEAN COMMISSION PRESS RELEASE, ANTITRUST: COMMISSION OPENS INVESTIGATIONS INTO APPLE'S APP STORE RULES (June 16, 2020), https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1073.

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ *Id.*

for no compensation—to certify, promote, and distribute Spotify’s app to the attractive customer base Apple has assembled. The fact that Spotify has pursued action against Apple but not Google, which shares Apple’s position as both the effective gateway to a base of mobile phone users⁹⁹ and a Spotify rival in music streaming,¹⁰⁰ suggests that Spotify aims to require Apple to follow Google in permitting Spotify to evade revenue-sharing requirements with no adverse consequences. (Apple currently allows Spotify to evade payment, but not while maintaining a seamless app experience for its users, who must leave the app to upgrade.)

Google and Apple, however, are not in the same position when it comes to Spotify. Google provides extensive paid services to Spotify—*e.g.* Google Analytics 360, Google Optimize 360, Google Ads—and therefore benefits as Spotify’s user base grows.¹⁰¹ Apple, by contrast, earns no significant revenue from Spotify apart from commissions on in-app purchases. Google also obtains user information from Spotify,¹⁰² and because Google’s revenue comes primarily from targeted advertising, such information is of special value

⁹⁹ Although there are other distributors of Android apps, Google Play is by far the largest outlet for such apps in the western world. As a practical matter, Spotify likely has to distribute through Google Play in order to reach most American and European Android users. See Elad Natanson, *The “Other” Android App Stores—A New Frontier for App Discovery*, FORBES (Sept. 3, 2019), <https://www.forbes.com/sites/eladnatanson/2019/09/03/the-other-android-app-stores-a-new-frontier-for-app-discovery/#bce21bb6774c> (observing that App Store and Google Play “dominate app distribution in the west”).

¹⁰⁰ Google’s YouTube Music service competes with Spotify in digital music streaming. See STATISTA, SHARE OF MUSIC STREAMING SUBSCRIBERS WORLDWIDE IN 2019, <https://www.statista.com/statistics/653926/music-streaming-service-subscriber-share/> (last visited Oct. 01, 2020) (showing that Spotify had 35% of streaming subscribers worldwide, compared to Apple Music’s with 19% and Google’s YouTube Music with 6%).

¹⁰¹ See GOOGLE, HOW SPOTIFY INCREASED PREMIUM SUBSCRIPTIONS USING GOOGLE OPTIMIZE 360 (May 2018), <https://www.thinkwithgoogle.com/intl/en-gb/success-stories/how-spotify-increased-premium-subscriptions-using-google-optimize-360/> (detailing Spotify’s use of various Google services).

¹⁰² See SPOTIFY PRIVACY POLICY, <https://www.spotify.com/us/legal/privacy-policy/?version=1.0.0-GB> (last visited Oct. 01, 2020) (disclosing that Spotify “may share information with advertising partners” for purposes of tailoring ads); GOOGLE, HOW GOOGLE USES INFORMATION FROM SITES OR APPS THAT USE OUR SERVICES, <https://policies.google.com/technologies/partner-sites?hl=en-US> (last visited Oct. 01, 2020) (detailing that apps using Google services provide information to Google that may then be used to personalize ads).

to it. Apple, whose revenue comes primarily from hardware sales, gets little benefit from the information it acquires in distributing apps. Apple also offers a value proposition different from Google's. Because of its more closed operating system and the extra vetting it applies—at considerable cost—to app submissions, the apps in its store are perceived to be of higher quality, and its certification is therefore more valuable for developers.¹⁰³ At the same time, Apple's relentless efforts to upgrade the user experience have attracted devoted, high-end users who are more likely to spend on apps.¹⁰⁴ The App Store thus offers a particularly attractive distribution outlet to Spotify and other app developers.

In the end, Spotify is attempting to use antitrust to force Apple to act like Google even though (1) Spotify confers benefits on Google that are not available to Apple; (2) the certification service Apple provides is more valuable, and costlier to produce, than Google's; and (3) the user base Apple has cultivated is more desirable than that offered by Google. In seeking to use antitrust law to extract greater value than it could obtain in an arms-length transaction, Spotify is engaged in rent-seeking.¹⁰⁵

¹⁰³ See Hildebrand, *supra* note 73; Poluliakh & Osadchiy, *supra* note 72.

¹⁰⁴ See Felix Richter, *Apple Users More Willing to Pay for Apps*, STATISTA (July 6, 2018), <https://www.statista.com/chart/14590/app-downloads-and-consumer-spend-by-platform/>; Brown, *supra* note 83; SENSORTOWER, *supra* note 84.

¹⁰⁵ To be fair, Spotify is not alone in seeking to free-ride off Apple's efforts to create a high-quality app ecosystem. In addition to Epic Games, discussed next in the text, smaller app developers have also complained of Apple's insistence on compensation. See, e.g., Kif Leswing, *Why Apple's App Store is Under Fire*, CNBC (June 18, 2020), <https://www.cnbc.com/2020/06/18/apple-app-store-faces-complaints-from-basecamp-others-eu-probe.html> (discussing smaller app developers' complaints about App Store policies). The president of Microsoft has also called for antitrust authorities to investigate Apple's policies. See Dina Bass & Mark Gurman, *Microsoft Says Antitrust Bodies Need to Review Apple App Store*, BLOOMBERG (June 18, 2020), <https://www.bloomberg.com/news/articles/2020-06-18/microsoft-says-antitrust-regulators-need-to-review-app-stores>. Microsoft, which operates its own app store and takes a similar—albeit lower—revenue share from third-party app developers, see Jonny Caldwell, *Microsoft Quietly Removes Pledge to Share 95% of App Revenue on the Microsoft Store*, ONMSFT (Jan. 16, 2020), <https://www.onmsft.com/news/microsoft-quietly-removes-pledge-to-share-95-of-app-revenue-on-the-microsoft-store> (observing that Microsoft's standard revenue share is 15%), distributes numerous apps through Apple's App Store. See APPLE, APP STORE PREVIEW, MICROSOFT CORPORATION, <https://apps.apple.com/us/developer/microsoft-corporation/id298856275> (last visited Oct. 01, 2020) (cataloguing Microsoft apps available in the App Store).

c. Epic’s Antitrust Claims Against Apple and Google

Whereas Spotify has directed its campaign against Apple alone, another prominent app developer is attempting to use antitrust to extract greater surplus from transactions on Google’s platform as well. In August 2020, Epic Games, producer of the popular Fortnite video game, filed antitrust suits challenging the app store policies of both companies.¹⁰⁶ Epic complains that the companies restrict app distribution to their own stores—Apple, by expressly disallowing iOS app distribution outside the App Store¹⁰⁷ and Google, by creating practical impediments to other avenues for Android app distribution.¹⁰⁸ Epic also challenges each platform’s requirement that in-app purchases be processed through the platform’s proprietary payment system (In-App Purchase for iOS; Google Play Billing for Android).¹⁰⁹ These restraints, Epic asserts, enable Apple and Google to collect a supracompetitive revenue share on most in-app digital purchases, including those that Fortnite players make when they buy access to such game features as digital “skins” for their on-screen avatars and “battle passes” that allow them to participate in certain contests.

While the Epic lawsuits are in their early days and may look different after discovery, the company’s claims currently appear to be weak under United States antitrust law. As an initial matter, the policies Epic complains of are not the product of market power; they were put in place when Apple and Google had minuscule shares of

¹⁰⁶ Complaint for Injunctive Relief, *Epic Games, Inc. v. Apple Inc.*, No. 3:20-cv-05640-YGR (N.D. Cal. Aug. 13, 2020) [hereinafter *Epic v. Apple Complaint*]; Complaint for Injunctive Relief, *Epic Games, Inc. v. Google LLC, et al.*, No. 5:20-cv-05671-NC (N.D. Cal. Aug. 13, 2020) [hereinafter *Epic v. Google Complaint*].

¹⁰⁷ *Epic v. Apple Complaint*, *supra* note 106, at ¶¶ 64-81.

¹⁰⁸ For example, Google forbids the distribution of other app stores through Google Play, and it allegedly discourages app distribution through Internet websites (so-called “sideloading”) by requiring Android users to click through “dire warnings” about the security risks posed by apps that have not been vetted by Google Play. *Epic v. Google Complaint*, *supra* note 106, at ¶¶ 26-105.

¹⁰⁹ See *Epic v. Apple Complaint*, *supra* note 106, at ¶¶ 128-38; *Epic v. Google Complaint*, *supra* note 106, at ¶¶ 125-30.

the mobile operating systems market.¹¹⁰ The fact that the two companies now earn substantial revenues from their app stores because their mobile operating systems have enjoyed success is not illegal under U.S. law. As Judge Learned Hand famously explained, “The successful competitor, having been urged to compete, must not be turned upon when he wins.”¹¹¹ The Supreme Court has concurred, observing that

The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system. The opportunity to charge monopoly prices—at least for a short period—is what attracts ‘business acumen’ in the first place; it induces risk taking that produces innovation and economic growth.¹¹²

There are also obvious business justifications for the complained of policies. The first policy—placing restrictions (or, in Google’s case, warnings) on outside app distribution—helps prevent harm to users’ mobile software and hardware and builds user trust in the mobile ecosystem. Because Apple’s primary revenue from mobile systems comes from sales of hardware with preinstalled software (iPhones with iOS), it has a particularly strong interest in ensuring perfect performance of the units it sells, and it therefore exerts more control over app distribution than does Google, which earns substantial revenue off mobile search. But Google, too, has an interest in protecting the Android brand by limiting the distribution of harm-causing apps. The second complained of policy—requiring use of the platform’s own payment system for in-app purchases—enables each platform to receive compensation for the tremendous value it provides to app developers by assembling an installed base of users and certifying and marketing the developers’ apps. Producing such value is costly, which helps explain why nearly all app stores demand a cut of developers’ revenues.¹¹³ Indeed, the fees charged

¹¹⁰ See Erick Schonfeld, *Smartphone Sales Up 24 Percent, iPhone’s Share Nearly Doubled Last Year* (Gartner), TECHCRUNCH (Feb. 23, 2010), <https://techcrunch.com/2010/02/23/smartphone-iphone-sales-2009-gartner/> (reporting that in 2008, 8.2% of smartphones used iOS operating system and 0.5% used Android operating system; 2009 figures were 14.4% for iOS and 3.9% for Android).

¹¹¹ *United States v. Aluminum Co. of America*, 148 F.2d 416, 430 (2d Cir. 1945).

¹¹² *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko LLP*, 540 U.S. 398, 407 (2004).

¹¹³ See ANALYSIS GROUP, *APPLE’S APP STORE AND OTHER DIGITAL MARKETPLACES: A COMPARISON OF*

by Apple and Google appear to be in line with industry norms.¹¹⁴

The most significant deficiency in Epic's antitrust claims is that the complained of policies in no way enhance the market power Apple and Google possess. Regardless of their app store policies, Apple and Google control their operating systems and may thus determine which, if any, third-party apps may operate on their platforms. They may impose technological barriers to the development and operation of unauthorized apps, license their operating systems on the condition that users not install apps that have not been approved, and create adverse consequences—both technological and legal—for doing so. Their control over access to their operating systems—a power they will possess whatever their app store policies are—enables them to extract a sizable share of the surplus created when an app developer transacts with a licensee of the operating system. They currently extract such surplus by taking a cut of the app developer's revenue, and the app developer often responds by charging higher prices to users. If, however, Apple and Google were not able to capture surplus from app developers and users in that fashion, they could easily do so in another manner. They could, for example, charge app developers for access to critical application programming interfaces (APIs) or for the right to be included on some list of approved apps that could bypass any technological barrier to operability and any restrictions in the licenses held by users of the operating systems.¹¹⁵ Because the policies Epic complains of do not create market power that would not otherwise exist, a court is unlikely to conclude that they violate United States antitrust law.

Victory in a court of law, though, is not likely Epic's goal. The circumstances

COMMISSION RATES (July 22, 2020), https://www.analysisgroup.com/globalassets/insights/publishing/apples_app_store_and_other_digital_marketplaces_a_comparison_of_commission_rates.pdf.

¹¹⁴ *Id.* at 5.

¹¹⁵ See Dirk Auer, *The Epic Flaws of Epic's Antitrust Gambit*, TRUTH ON THE MARKET (Aug. 27, 2020), <https://truthonthemarket.com/2020/08/27/the-epic-flaws-of-epics-antitrust-gambit/>. As Auer has observed, Epic has conceded that Apple could cut off its access to crucial development tools.

surrounding the filing of Epic’s lawsuits suggest that the company is primarily pursuing victory in the court of public opinion. Epic’s lawsuits were part of a tightly orchestrated publicity campaign. On August 13, 2020, the company breached its contracts with Apple and Google by submitting app updates that contained obscure code allowing users to bypass the platforms’ in-app purchasing systems and thereby avoid revenue sharing.¹¹⁶ Apple and Google responded by exercising their contractual rights to remove the non-conforming apps from their stores.¹¹⁷ Within hours of the removal, Epic filed pre-drafted complaints—one 62 pages in length, the other 60—against the two companies. Epic then peppered social media with a sleek video mirroring the iconic television commercial Apple released in connection with its 1984 debut of the Macintosh home computer but replacing the purportedly monopolistic villain Apple had sought to displace—IBM—with Apple itself.¹¹⁸ Epic’s clever commercial directed viewers to a Twitter hashtag, #FreeFortnite, and the company soon hosted a “#FreeFortniteCup” to draw further attention to its cause.¹¹⁹ A few days after filing its complaints and commencing its publicity blitz, Epic generated further publicity by filing 197 pages in a pre-packaged motion for temporary injunctive relief.¹²⁰ Of course, no such “emergency” relief would have been needed had Epic filed its antitrust claims without first breaching its agreements. Epic’s dramatic removal from the app stores, however, drew attention to its cause and upped the public pressure on Apple and Google to make changes to their app

¹¹⁶ See Nick Statt, *Apple Just Kicked Fortnite off the App Store*, THE VERGE (Aug. 13, 2020), <https://www.theverge.com/2020/8/13/21366438/apple-fortnite-ios-app-store-violations-epic-payments>.

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ See The Fortnite Team, *Join the Battle and Play in the #FreeFortnite Cup on August 23* (Aug. 20, 2020), <https://www.epicgames.com/fortnite/en-US/news/freefortnite-cup-on-august-23-2020>.

¹²⁰ Epic Games, Inc.’s Notice of Motion and Motion for Temporary Restraining Order and Order to Show Cause Why a Preliminary Injunction Should Not Issue and Memorandum of Points and Authorities in Support Thereof, No. 3:20-CV-05640-EMC (N.D. Cal. Aug. 17, 2020), <https://cdn2.unrealengine.com/epic-v-apple-8-17-20-768927327.pdf>.

store policies.

The question remains as to why Epic would launch a lawsuit-based publicity campaign to induce Apple and Google to alter their app store policies when any changes would not reduce the platforms' market power but would simply induce them to extract surplus using alternative means. As Dirk Auer has observed,

One potential answer [to that question] is that the current system is highly favorable to small apps that earn little to no revenue from purchases and who benefit most from the trust created by Apple and Google's curation of their stores. It is, however, much less favorable to developers like Epic who no longer require any curation to garner the necessary trust from consumers and who earn a large share of their revenue from in-app purchases.¹²¹

Under the current system, paid apps that achieve great success effectively subsidize upstarts, niche apps, and apps that are advertiser-supported. Epic may not like that outcome, but the system has the advantage of getting developers of new and small apps on board, expanding the offerings in each platform's app store, and thereby building the installed base of users from which Epic and other app developers benefit. As Auer further observes, the current system, by facilitating a 30% revenue share from paid apps, also reduces the incentive for Apple and Google to imitate successful apps and may thereby operate as a "soft commitment not to expropriate developers, thus leaving them with a sizable share of the revenue generated on each platform."¹²²

Apple and Google have many ways to monetize control over their mobile operating systems. Given the intense competition between the two platforms, each has an incentive to choose monetization strategies that maximize the availability of high-quality third-party apps so as to grow their user bases. Epic's legally deficient lawsuits represent an effort to put public pressure on Apple and Google to revamp their app store policies, not in a manner that would reduce their market power—any such power would persist even absent the complained of policies—but in a way that would advantage Epic

¹²¹ See Auer, *supra* note 115.

¹²² *Id.*

at the expense of other app developers and the mobile app ecosystem itself. In short, Epic is engaged in rent-seeking.

B. Raising Rivals' Costs

In addition to employing government power to procure some sort of subsidy, a firm may extract rents by inducing the government to raise its rivals' costs and thereby give it a competitive advantage. Rivals with higher costs must charge higher prices, which permits a cost-advantaged firm either to follow their lead and earn higher margins or to grow its market share by underpricing them. In an extreme case, higher-cost firms may lose so much business that they are driven from the market altogether. In all these scenarios, competition is weakened, and consumers suffer. We consider here several recent examples of firms' seeking to exploit government power to hobble their digital rivals.

1. Google, Facebook, and the Regulation of Privacy, Artificial Intelligence, and Content Moderation

The European Union's landmark General Data Protection Regulation (GDPR), adopted in 2016 and effective as of May 2018, endeavors to give individuals control over the information about them that is collected or processed by digital firms.¹²³ GDPR requires digital firms that process personal data to implement technical and organizational measures to comply with certain data protection principles.¹²⁴ Business and data collection processes must be designed in light of those principles, and information systems must use the highest possible privacy settings by default.¹²⁵ A user's personal data may not be processed unless the user has expressly consented or the

¹²³ General Data Protection Regulation, Regulation (EU) 2016/679, <https://gdpr-info.eu>.

¹²⁴ *Id.* at art. 5.

¹²⁵ *Id.* at art. 25.

processing occurs under five other lawful bases: contract, public task, vital interest, legitimate interest, or legal requirement.¹²⁶ Where information processing is based on consent, the data subject may revoke it at any time.¹²⁷ Firms must clearly disclose any data collection, declare the legal basis and purpose for processing the data, and state the length of time the data will be retained and whether it will be shared with third parties.¹²⁸ Data subjects may demand a portable copy of their data presented in a common format,¹²⁹ and they have the right to have their data erased under certain circumstances.¹³⁰ Any business whose core activity consists of regular or systematic processing of personal data must employ a data protection officer (DPO) to ensure compliance with GDPR,¹³¹ and any data breach must be reported within 72 hours if it threatens an adverse effect on user privacy.¹³²

Given the high cost of complying with these extensive requirements, one might expect that GDPR would have impaired the European business of Google and Facebook, both of which process vast troves of personal data. In actuality, GDPR has been a boon to the two companies. An early study compared the tracking reach of digital advertising firms (“ad tech vendors”) from one month before GDPR’s implementation to one month after.¹³³ It found, unsurprisingly, that web tracking had decreased in the EU during the period: trackers per page fell by 3.4% in the EU even as they grew 8.9% in the United

¹²⁶ *Id.* at art. 6(1).

¹²⁷ *Id.* at art. 7(3).

¹²⁸ *Id.* at arts. 13, 14.

¹²⁹ *Id.* at art. 20.

¹³⁰ *Id.* at art. 17.

¹³¹ *Id.* at arts. 37-39.

¹³² *Id.* at art. 33.

¹³³ See Bjorn Greif, *Study: Google Is the Biggest Beneficiary of the GDPR*, CLIQZ (Oct. 10, 2018), <https://cliqz.com/en/magazine/study-google-is-the-biggest-beneficiary-of-the-gdpr>.

States.¹³⁴ But the bulk of the loss in web-tracking, which is crucial for targeted advertising, was suffered by smaller ad tech firms. Whereas the website tracking reach of the top fifty ad tech firms besides Google and Facebook fell by 20%, and the tracking opportunities of “especially small” ad tech firms—those ranked 100 to 150—fell by around 32%, Facebook’s website reach fell by only 6.66%, and Google’s actually grew slightly (by 0.93%).¹³⁵ The study authors thus concluded that “smaller advertisers lose” and that “Google is the biggest beneficiary of the GDPR.”¹³⁶

In June 2019, the *Wall Street Journal* reported on the first full year of GDPR and confirmed that the law appears to have benefited Google and Facebook, with both companies earning a greater share of European digital ad spending following GDPR’s implementation.¹³⁷ Industry experts interviewed by the *Journal* suggested two reasons for the relative good fortune of Google and Facebook under GDPR. First, the companies have much greater resources for compliance, and firms prefer to concentrate their ad budgets with companies whom they trust not to violate the rules.¹³⁸ In addition, because GDPR makes it harder for third-parties to collect the personal information that is so valuable for targeting ads, it benefits digital firms that have direct relationships with users and can more easily procure consent to use their data.¹³⁹ With their many user-facing services that connect them directly to data subjects, Google and Facebook are far less reliant on third-party data. In fact, Google recently announced its intention to phase-out support for

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ Nick Kostov & Sam Schechner, *GDPR Has Been a Boon for Google and Facebook*, WALL ST. J. (Jun 17, 2019), <https://www.wsj.com/articles/gdpr-has-been-a-boon-for-google-and-facebook-11560789219>. While Europe’s digital advertising market grew by 14% in 2018, Facebook’s revenue from ads shown in Europe increased by 40%, and “Google’s revenue in Europe, the Middle East and Africa—the vast majority of which comes from advertising—rose 20%.” *Id.*

¹³⁸ *Id.*

¹³⁹ *Id.*

third-party cookies—tiny data files that enable advertisers to track website visitors across the Internet—in its market-leading Chrome browser.¹⁴⁰ That move, made in the name of furthering user privacy, will greatly benefit Google and Facebook *vis-à-vis* their ad tech rivals that lack direct user contact and therefore depend on third-party data.¹⁴¹

In its recent report *Online Platforms and Digital Advertising*,¹⁴² the United Kingdom’s Competition and Markets Authority (CMA) suggested that GDPR may have provoked Google’s decision. The CMA acknowledged “hear[ing] concerns that large platforms use data protection regulations such as [GDPR] as a justification for restricting access to valuable data for third parties, while retaining it for use within their ecosystems, thereby consolidating their data advantage and entrenching their market power.”¹⁴³ It further observed that Google and Facebook “have an incentive to interpret data protection regulation in a way that entrenches their own competitive advantage, including by denying third parties access to data that is necessary for targeting, attribution, verification and fee or price assessment while preserving their right to use this data within their walled gardens.”¹⁴⁴ It explicitly highlighted “Google’s recent announcement that it was phasing out support for third-party cookies on the Chrome browser, restricting publishers’ ability to offer personalised advertising.”¹⁴⁵

¹⁴⁰ See *Building a More Private Web: A Path Towards Making Third Party Cookies Obsolete*, CHROMIUM BLOG (Jan. 14, 2020), <https://blog.chromium.org/2020/01/building-more-private-web-path-towards.html>.

¹⁴¹ See Alex Webb, *Google’s Cookie Fight Will Shape Future of Digital Advertising*, BLOOMBERGQUINT (July 16, 2020), <https://www.bloombergquint.com/businessweek/google-s-cookie-overhaul-could-reshape-the-digital-ad-industry>; Ariel Bogle, *Google Wants to Kill Third-party Cookies. Here’s Why That Could Be Messy*, ABC SCIENCE (Jan. 20, 2020), <https://www.abc.net.au/news/science/2020-01-21/google-to-kill-third-party-cookies-privacy-and-competition/11882718>.

¹⁴² U.K. COMPETITION AND MARKETS AUTHORITY, *ONLINE PLATFORMS AND DIGITAL ADVERTISING: MARKET STUDY FINAL REPORT* (July 1, 2020), https://assets.publishing.service.gov.uk/media/5efc57ed3a6f4023d242ed56/Final_report_1_July_2020_.pdf.

¹⁴³ *Id.* at 16, ¶ 46.

¹⁴⁴ *Id.* at 16, ¶ 48.

¹⁴⁵ *Id.* at 16, ¶ 47.

Given the competitive benefit GDPR has conferred on them, Google and Facebook have warmed to the sorts of rules it imposes. The companies are now actively promoting similar regulatory regimes that could entrench their dominance. For example, in a January 2020 op-ed in the *Financial Times*, the CEO of Google and its parent company Alphabet argued that governments should impose broad artificial intelligence (AI) regulations.¹⁴⁶ Asserting that “[e]xisting rules such as Europe’s General Data Protection Regulation can serve as a strong foundation,” he highlighted Google’s own AI principles and actions as a model for government mandates.¹⁴⁷ Facebook has similarly called for governments to mandate actions it already takes. In meetings with EU regulators about digital platforms’ content moderation, Facebook recently proposed what tech writer Josh Constone characterized as “a moat of regulations it already meets.”¹⁴⁸ As Constone

¹⁴⁶ Sundar Pichai, *Why Google Thinks We Need to Regulate AI*, FINANCIAL TIMES (Jan. 20, 2020), <https://www.ft.com/content/3467659a-386d-11ea-ac3c-f68c10993b04>.

¹⁴⁷ *Id.*

¹⁴⁸ Josh Constone, *Facebook Asks for a Moat of Regulations it Already Meets*, TECHCRUNCH (Feb. 17, 2020), <https://techcrunch.com/2020/02/17/regulate-facebook/>. Constone catalogued Facebook’s proposed rules and explained how the company already complies with each:

- **User-friendly channels for reporting content** – Every post and entity on Facebook can already be flagged by users with an explanation of why. [See FACEBOOK, REPORTING ABUSE, https://www.facebook.com/help/1753719584844061?helpref=page_content (last visited Oct. 01, 2020).]
- **External oversight of policies or enforcement** – Facebook is finalizing its independent Oversight Board right now. [See Josh Constone, *Toothless: Facebook proposes a weak Oversight Board*, TECHCRUNCH (Jan. 28, 2020), <https://techcrunch.com/2020/01/28/under-consideration/>]
- **Periodic public reporting of enforcement data** – Facebook publishes a twice-yearly report about enforcement of its Community Standards. [See FACEBOOK, COMMUNITY STANDARDS ENFORCEMENT REPORT, <https://transparency.facebook.com/community-standards-enforcement> (last visited Oct. 01, 2020).]
- **Publishing their content standards** – Facebook publishes its standards and notes updates to them. [See FACEBOOK, COMMUNITY STANDARDS: RECENT UPDATES, <https://www.facebook.com/communitystandards/recentupdates/> (last visited Oct. 01, 2020).]
- **Consulting with stakeholders when making significant changes** – Facebook consults a Safety Advisory Board and will have its new Oversight Board. [See FACEBOOK, WHAT IS THE FACEBOOK SAFETY ADVISORY BOARD AND WHAT DOES THIS BOARD DO?, <https://www.facebook.com/help/222332597793306> (last visited Oct. 01, 2020).]

observed, the sort of initiatives Google and Facebook are now proposing offer them a competitive benefit they did not obtain from GDPR: “[I]n the case of GDPR, everyone had to add new transparency and opt out features,” but implementation of these new proposals would allow their proponents to “sail forward largely unperturbed while rivals and upstarts scramble to get up to speed.”¹⁴⁹

2. The Diverse Coalition Opposing CDA Section 230¹⁵⁰

Section 230 of the Communications Decency Act (CDA) provides significant legal protection for digital platforms that allow users to post public content. Paragraph (c)(1) of the provision states that “[n]o provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider.”¹⁵¹ The Act includes some exceptions to that rule, such as for copyrighted material,¹⁵² but it generally exempts digital platforms from liability based on user-posted content on their sites. Because it encourages digital platforms to allow user interaction—a key feature of what most people think of as “the Internet” as distinct from one-way, digitally delivered entertainment—cybersecurity expert Jeff Kosseff has

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- **Creating a channel for users to appeal a company’s content removal decisions** – Facebook’s Oversight Board will review content removal appeals. [See Josh Constine, *Facebook Will Pass Off Content Policy Appeals to a New Independent Oversight Body*, TECHCRUNCH (Nov. 15, 2018) <https://techcrunch.com/2018/11/15/facebook-oversight-body/>.]
 - **Incentives to meet specific targets such as keeping the prevalence of violating content below some agreed threshold** – Facebook already touts how 99% of child nudity content and 80% of hate speech removed was detected proactively, and that it deletes 99% of ISIS and Al Qaeda content. [See Guy Rosen, *Community Standards Enforcement Report, November 2019 Edition*, FACEBOOK NEWSROOM (Nov. 13, 2019), <https://about.fb.com/news/2019/11/community-standards-enforcement-report-nov-2019/>.]

See Constine, *Facebook Asks for a Moat of Regulations it Already Meets*, *supra*.

¹⁴⁹ Constine, *supra* note 148.

¹⁵⁰ For further discussion of Section 230, see Berin Szóka & Ashkhen Kazaryan, *Section 230: An Introduction for Antitrust & Consumer Protection Practitioners*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

¹⁵¹ 47 U.S.C. § 230(c)(1).

¹⁵² *Id.* at § 230(e)(2).

dubbed Section 230(c)(1) “The Twenty-Six Words that Created the Internet.”¹⁵³

A second key provision of Section 230 is paragraph (c)(2), which provides that “[n]o provider or user of an interactive computer service shall be held liable on account of . . . any action voluntarily taken in good faith to restrict access to or availability of material that the provider or user considers to be obscene, lewd, lascivious, filthy, excessively violent, harassing, or otherwise objectionable, whether or not such material is constitutionally protected. . . .”¹⁵⁴ This provision allows digital platforms to moderate content posted by users without fear of liability to either the content generator or third-parties, who might assert that the platform’s moderation of content renders it a publisher of the content it allows.¹⁵⁵ As Kosseff has explained, these two provisions of Section 230, which were enacted before any of the currently prominent Internet platforms existed, allowed the open Internet we now have to flourish: By freeing digital platforms from liability for user-generated content, Paragraph (c)(1) allowed the Internet to be interactive; by insulating platforms from liability arising from good faith content moderation, paragraph (c)(2) enabled platforms to prevent their sites from becoming flooded with objectionable content that would drive away users.¹⁵⁶

In recent months, a diverse group of firms—from computer hardware and software companies, to giant entertainment conglomerates, to hotel chains—have pressed legislators to cut back on Section 230’s protections.¹⁵⁷ On first glance, these varied companies appear to have little in common. They are alike, however, in that each (1) faces

¹⁵³ JEFF KOSSEFF, *THE TWENTY-SIX WORDS THAT CREATED THE INTERNET* (2018).

¹⁵⁴ 47 U.S.C. § 230(c)(2).

¹⁵⁵ Section 230(c)(2) was enacted to override a court decision holding that a digital platform operator’s moderation of user-generated content could render it the publisher of the content it allowed. *See* KOSSEFF, *supra* note 153, at 73 (discussing Congress’s intention to reverse the effect of *Stratton Oakmont, Inc. v. Prodigy Servs. Co.*, 1995 WL 323710 (May 24, 1995)).

¹⁵⁶ *See* KOSSEFF, *supra* note 153, at 64-66.

¹⁵⁷ *See* David McCabe, *IBM, Marriott and Mickey Mouse Take on Tech’s Favorite Law*, N.Y. TIMES (Feb. 4, 2020), <https://www.nytimes.com/2020/02/04/technology/section-230-lobby.html>.

little to no potential liability for user-generated content but (2) competes with firms that do.

For example, neither IBM—primarily a provider of computer hardware and software, artificial intelligence products, and business and cloud computing services—nor Oracle—primarily a provider of enterprise software and cloud computing services—provides a significant platform for user-generated content. But both companies compete in cloud computing with Google and Amazon, each of which hosts a vast amount of user-generated content (*e.g.* through Google’s YouTube and Amazon’s customer reviews and user-streaming service Twitch). In 2017, IBM and Oracle teamed up to lobby for passage of the “Stop Enabling Sex Traffickers Act” (SESTA) and the “Fight Online Sex Trafficking Act” (FOSTA), which together amended Section 230 to allow digital platforms to be liable under certain circumstances for user-generated content that facilitates sex-trafficking.¹⁵⁸ Sex-trafficking is a terrible thing, of course, and IBM and Oracle may have been seeking both to reduce its incidence and to win public favor by taking a stance against it. But thousands of other companies had those same motivations to lobby for SESTA/FOSTA, yet did not do so. The extraordinary efforts of IBM and Oracle perhaps stemmed from the fact that any weakening of Section 230’s protections increases the liability risk for Google and Amazon and makes each a less formidable competitor. IBM and Oracle may also have reasoned that once the door was opened to allowing platform liability for some user-generated content, it would be easier to push for additional exceptions to the liability

¹⁵⁸ See Letter from IBM, to U.S. Senators Rob Portman and Richard Blumenthal in Support of SESTA (Oct. 3, 2017), <https://www.ibm.com/blogs/policy/ibm-letter-sesta-human-trafficking/>; Letter from IBM, to U.S. Representatives Bob Goodlatte and Jerrold Nadler regarding SESTA/FOSTA (Dec. 12, 2017), <https://www.ibm.com/blogs/policy/house-judiciary-fosta-letter/>; Letter from Oracle, to U.S. Representative Ann Wagner in Support of FOSTA (Sept. 5, 2017), https://www.consumerwatchdog.org/resources/oracle_hr_1865_support.pdf; Letter from Oracle, to U.S. Senators Rob Portman and Richard Blumenthal in Support of SESTA (Sept. 5, 2017), https://www.consumerwatchdog.org/resources/oracle_s_1693_support.pdf [hereinafter Oracle Letter to Sens. Portman and Blumenthal].

shield.¹⁵⁹

IBM has recently made such a push. In a June 2019 publication entitled “A Precision Regulation Approach to Stopping Illegal Activities Online,” IBM heaped praise on the legislators who have called for a reduction in Section 230’s protections and suggested that the law be changed further.¹⁶⁰ Under IBM’s proposal, a digital platform would be protected from liability for user-generated content only if it could show that it took “reasonable care” to prevent its platform from being used to further liability-creating conduct.¹⁶¹ A result of this amendment would be that no legal claim against a platform based on user-generated content could be dismissed at the complaint stage. The defendant platform would always have to prove that it had taken reasonable steps to prevent the liability-causing conduct (or that the conduct did not, in fact, create liability) before the claim against it could be dismissed. Such a requirement would greatly increase platforms’ litigation costs and would likely generate “strike suits”—meritless lawsuits filed for the purpose of extracting a settlement. As an added benefit, such a requirement might induce platforms to install AI-based filtering technology such as IBM’s Watson Tone Analyzer, an AI solution that assesses what content intends, not just what it says, and has been lauded as “an important tool for sites trying to balance freedom of speech with protection of users and removal of illegal or harmful content.”¹⁶²

¹⁵⁹ See Aja Romano, *A New Law Intended to Curb Sex Trafficking Threatens the Future of the Internet as We Know It*, VOX (July 2, 2018), <https://www.vox.com/culture/2018/4/13/17172762/fosta-sesta-backpage-230-internet-freedom> (observing that SESTA/FOSTA could lead to “the further eroding of internet safe harbor protection” and benefit technology firms without user-generated content).

¹⁶⁰ Ryan Hagemann, *A Precision Regulation Approach to Stopping Illegal Activities Online*, IBM POLICY LAB (July 10, 2019), <https://www.ibm.com/blogs/policy/cda-230/>.

¹⁶¹ See *id.*

¹⁶² Terri Coles, *How AI Can Help Filter the Worst of the Web*, IT PRO TODAY (June 30, 2019), <https://www.itprotoday.com/data-analytics-and-data-management/how-ai-can-help-filter-worst-web>. Oracle, too, offers these sorts of solutions, which may explain why it stated in its letter in support of SESTA that “[a]ny start-up has access to low cost and virtually unlimited computing power and to advanced analytics, artificial intelligence and filtering software. That capability is also offered as a service in the cloud.” See Oracle Letter to Sens. Portman and Blumenthal, *supra* note 158.

IBM and Oracle were not the only companies to lobby for SESTA/FOSTA. They were joined by entertainment giants Walt Disney Company and 21st Century Fox, both of which wrote to key U.S. Senators in support of the legislation.¹⁶³ Those companies have also lobbied to prevent the exportation of Section 230's protections via trade agreements and thereby preserve the possibility of liability for user-generated content outside the U.S.¹⁶⁴

The ultimate goal of the entertainment conglomerates appears to be two-pronged. One objective is simply to weaken platforms with significant user-generated content, such as Facebook, Google/YouTube, and Amazon/Twitch. Given that such content competes for consumers' attention against the entertainment offerings of major film studios, anything that impairs the platforms hosting user-generated content tends to benefit traditional entertainment media. A second apparent objective is to force the technology platforms to do more to protect the film studios' copyrights. On that front, Section 230 is not directly relevant; the provision expressly has no effect on "any law pertaining to intellectual property" and would therefore provide no protection to a digital platform accused of hosting copyrighted material.¹⁶⁵ When it comes to users'

¹⁶³ See Letter from Chip Smith, Executive Vice-President of Global Affairs, 21st Century Fox, to U.S. Senators Rob Portman and Richard Blumenthal in Support of SESTA/FOSTA, https://www.consumerwatchdog.org/resources/091317_fox_section230.pdf; Romano, *supra* note 159 (referring to separate Disney letter); Letter from Business Leaders, to Majority Leader Mitch McConnell and Democratic Leader Charles Schumer, Urging Passage of Anti-Sex Trafficking Legislation (Mar. 13, 2018), <https://www.ibm.com/blogs/policy/letter-sex-trafficking-legislation/>.

¹⁶⁴ The Motion Picture Association of America, which represents Disney and the other major U.S. film studios (Paramount Pictures Corp., Sony Pictures Entertainment Inc., Twentieth Century Fox Film Corp., Universal City Studios L.L.C., and Warner Bros. Entertainment Inc.) submitted extensive comments urging the National Telecommunications and Information Administration to oppose inclusion of Section 230 protections in trade agreements. See COMMENTS OF THE MOTION PICTURE ASSOCIATION OF AMERICAN BEFORE THE NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION (July 17, 2018), https://www.ntia.doc.gov/files/ntia/publications/180717_mpa_response_to_ntia_internet_priorities_inquiry_final.pdf. Disney lobbyists reportedly distributed a handout warning Congress that including the provision in trade deals would make it difficult for Congress to change the law in a way that improved the Internet. See McCabe, *supra* note 157.

¹⁶⁵ 47 U.S.C. § 230(e)(2) ("Nothing in this section shall be construed to limit or expand any law pertaining

posting of copyrighted materials, the legal provision that protects platforms from liability is Section 512 of the Digital Millennium Copyright Act (DMCA), which provides a safe harbor for digital platforms that engage in good faith anti-piracy efforts and honor takedown notices from the music and film industries.¹⁶⁶ Ginning up opposition to Section 230, however, is likely to be an effective strategy for cutting back on Section 512 of the DMCA.¹⁶⁷ Because the two provisions provide similar protections for digital platforms, policymakers tend to view them—and would likely deal with them—as a package.¹⁶⁸ And since Section 230 insulates platforms from liability for a broader scope of user-generated content, it is easier to find politically appealing groups—from child protection advocates, to anti-hate groups, to traditional value conservatives—that would like to see its protections weakened. In short, there are more “Baptists” to assist with a challenge to Section 230, which can then be broadened to take on Section 512 of the DMCA.

Hotel chains have also joined the opposition to Section 230. In 2016, the American Hotel and Lodging Association (AHLA), a trade group that includes Marriott International, Hilton Worldwide, and Hyatt Hotels, reported to its members on a detailed plan to impair the business of Internet-based short-term home rental platforms like VRBO (Vacation Rentals By Owner), HomeAway, and, most prominently, Airbnb.¹⁶⁹ By increasing the lodging options for travelers, these companies reduce hotel chains’ ability to charge high rates, particularly in times of peak demand. In AHLA’s private report, a copy of which was obtained by the *New York Times*, the Association touted its successes

to intellectual property.”).

¹⁶⁶ 17 U.S.C. § 512.

¹⁶⁷ See Brendan Bordelon, *Copyright Liability Emerges as Latest Threat to Big Tech’s Legal Shield*, NATIONAL JOURNAL (Feb. 13, 2020), <https://www.tillis.senate.gov/2020/2/copyright-liability-emerges-as-latest-threat-to-big-tech-s-legal-shield>.

¹⁶⁸ See *id.*

¹⁶⁹ See Katie Benner, *Inside the Hotel Industry’s Plan to Combat Airbnb*, N.Y. TIMES (Apr. 16, 2017), https://www.nytimes.com/2017/04/16/technology/inside-the-hotel-industrys-plan-to-combat-airbnb.html?smid=tw-share&_r=0.

in lobbying three U.S. Senators to request an FTC investigation into the short-term rental industry and in procuring a number of state and local ordinances restricting short-term rentals by property owners.¹⁷⁰ It also announced its plans to seek a weakening of Section 230's protections by, among other things, "[e]ngaging the copyright holder community which has similar concerns with an expansive interpretation of the CDA."¹⁷¹

The hotel group's attack on Section 230 is an effort to saddle Airbnb and similar sites with liability for property owners' violations of local ordinances regulating short-term rentals. As AHLA members know, it would be extremely costly for home-sharing sites to assure that posting property owners are complying with thousands of local ordinances. Eliminating Section 230's protections would therefore increase hotel competitors' compliance costs as well as their likely liability. Notably, the hotel chains' lobbying efforts appear to be paying off: In September 2019, U.S. Representative Ed Case (D-HI) introduced the Protecting Local Authority and Neighborhoods (PLAN) Act, which would amend Section 230 to permit civil actions against Airbnb and other rental sites based on user-generated content.¹⁷² Congressman Case previously served on the board of AHLA.¹⁷³

3. Lawsuit Instigation

In addition to burdening rivals with costly regulatory mandates and narrowing the legal protections on which they may rely, firms may hobble their competitors by

¹⁷⁰ *See id.*

¹⁷¹ *See* Report, American Hotel and Lodging Association, *The Hotel Industry's Plans to Combat Airbnb* (2016), <https://www.nytimes.com/interactive/2017/04/16/technology/document-hotel-industry-plans-to-combat-airbnb-excerpt.html>.

¹⁷² *See* Protecting Local Authority and Neighborhoods Act, H.R. 4232, 116th Cong. (2019-2020) <https://www.congress.gov/bill/116th-congress/house-bill/4232/text>.

¹⁷³ *See* James Prichard, *Ex-Congressman Joins Board of Lodging Industry Lobbying Group*, PACIFIC BUSINESS NEWS (Nov. 15, 2016), <https://www.bizjournals.com/pacific/news/2016/11/15/ex-congressman-joins-board-oflodging-industry.html>.

inciting legal action against them. In recent years, firms competing in digital markets have taken this tack by creating and funding groups that purport to represent the public interest but are really focused on agitating for lawsuits against group members' competitors.

A prominent example of this is FairSearch.¹⁷⁴ Founded in October 2010 to oppose Google's acquisition of travel software firm ITA, FairSearch's original members were travel-focused "vertical"—*i.e.* narrowly focused—search engines Kayak, Expedia, and TripAdvisor.¹⁷⁵ In December 2010, FairSearch picked up a formidable Google foe, Microsoft, whose Bing search engine is Google's most prominent competitor in general search.¹⁷⁶ FairSearch then began a relentless campaign to encourage antitrust enforcement against Google. In the colorful words of one commentator, "FairSearch can be most charitably described as a Google watchdog. It seeks to fan the flames of disapproval where they've started organically, originate them where they haven't, and generally disseminate negativity toward the Google brand. Think of it as a PR firm working to destroy rather than create goodwill."¹⁷⁷

FairSearch has gone beyond simple rabble-rousing. In 2013, it initiated a European complaint against Google for tying its mobile search and browser technologies to its popular Android app store, Google Play, and for the purportedly predatory act of licensing Android at below-cost rates.¹⁷⁸ That effort paid off. In July 2018, the European

¹⁷⁴ See FAIRSEARCH, ABOUT, <http://fairsearch.org/about/> (last visited Oct. 01, 2020).

¹⁷⁵ See Vlad Savov, *What is FairSearch and Why Does It Hate Google So Much?*, THE VERGE (Apr. 12, 2013), <https://www.theverge.com/2013/4/12/4216026/who-is-fairsearch>.

¹⁷⁶ See Greg Sterling, *Microsoft Joins FairSearch Group Opposing Google-ITA Acquisition*, SEARCH ENGINE LAND (Dec. 15, 2010), <https://searchengineland.com/microsoft-joins-group-opposing-google-ita-acquisition-58777>. Note that in product searches, Amazon commands a larger search share than either Google or Bing, with 54% of searches originating on its site. See Dan Alaimo, *Amazon Now Dominates Google in Product Search*, RETAIL DIVE (Sept. 7, 2018), <https://www.retaildive.com/news/amazon-now-dominates-google-in-product-search/531822/>.

¹⁷⁷ See Savov, *supra* note 175.

¹⁷⁸ See Jack Blagdon, *Microsoft and Others File EU Antitrust Complaint Over Android App Bundling*, THE VERGE

Commission fined Google €4.34 billion for, among other things, “requir[ing] manufacturers to pre-install the Google Search app and browser app (Chrome), as a condition for licensing Google’s app store (the Play Store).”¹⁷⁹ By operating under the guise of FairSearch, Microsoft was able to obscure its role in instigating an action against its rival for behavior strikingly similar to its own past conduct.

Microsoft withdrew from FairSearch in December 2015,¹⁸⁰ but FairSearch continues to agitate for legal action against Google.¹⁸¹ In doing so, FairSearch claims to represent “a group of businesses and organizations united to promote economic growth, innovation and choice across the Internet ecosystem.”¹⁸² It lists at least nine companies as members.¹⁸³ According to its official filings with Belgian authorities, however, FairSearch is now controlled entirely by executives from two companies: Oracle and Naspers.¹⁸⁴ None of its other members has the right to vote on the group’s actions.¹⁸⁵ Neither Oracle nor Naspers—a South African technology and telecommunications company holding large stakes in the Chinese firm Tencent and a number of foreign technology companies—has a direct stake in the mobile markets at issue in the EU’s Android investigation. The two companies do, however, compete with Google in other markets and benefit when

(Apr. 8, 2013), <https://www.theverge.com/2013/4/8/4203684/microsoft-others-file-eu-antitrust-complaint-over-android-bundling>.

¹⁷⁹ See Press Release, European Commission, *Antitrust: Commission Fines Google €4.34 Billion for Illegal Practices Regarding Android Mobile Devices to Strengthen Dominance of Google’s Search Engine* (July 18, 2018), https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4581.

¹⁸⁰ See Mark Bergen, *Microsoft Quietly Retreats From FairSearch, Watchdog Behind Google Antitrust Cases*, VOX (Jan. 22, 2016), <https://www.vox.com/2016/1/22/11588992/microsoft-quietly-retreats-from-fairsearch-watchdog-behind-google>.

¹⁸¹ See Nicholas Hirst & Mark Scott, *Oracle and Naspers’ Stealth Lobbying Fight Against Google*, POLITICO (Feb. 16, 2018), <https://www.politico.eu/article/oracle-naspers-fairsearch-google-lobbying-europe-antitrust-android-competition-margrethe-vestager/>.

¹⁸² FAIRSEARCH, *supra* note 174.

¹⁸³ *Id.*

¹⁸⁴ See Hirst & Scott, *supra* note 181.

¹⁸⁵ *Id.*

Google suffers. Moreover, by becoming complainants in an EU antitrust case, the companies, through FairSearch, are allowed access to otherwise confidential information related to ongoing inquiries.¹⁸⁶

As an organization that appears to represent a coalition of smaller players but is really controlled by a couple of giants, FairSearch has been accused of “astroturfing” — creating the false appearance of a grassroots campaign.¹⁸⁷ Another organization engaged in astroturfing is the Free and Fair Markets Initiative (FFMI), which describes itself as “a nonprofit watchdog committed to scrutinizing Amazon’s harmful practices and promoting a fair, modern marketplace that works for all Americans.”¹⁸⁸ In addition to lobbying for legislation restricting Amazon and investigations into its practices, FFMI has sent dozens of letters and reports to members of Congress and their staffers, published numerous opinion pieces in newspapers and online media outlets, and tweeted hundreds of social media posts criticizing Amazon.¹⁸⁹ As FFMI has taken these actions, Amazon has faced increasing scrutiny from the U.S. Department of Justice, the FTC, the EU, and numerous state attorneys general.¹⁹⁰

Claiming to represent “[c]oncerned consumers, small business owners, and taxpayers,”¹⁹¹ FFMI has publicly listed among its supporters a labor union, a Boston management professor and a California businessman.¹⁹² The *Wall Street Journal*, however,

¹⁸⁶ *Id.* (“By becoming a complainant in an EU antitrust case, companies enjoy privileged access to confidential information linked to ongoing inquiries.”).

¹⁸⁷ *Id.*

¹⁸⁸ See FREE AND FAIR MARKETS INITIATIVE, ABOUT US, <https://freeandfairmarketsinitiative.org/about-us/> (last visited Oct. 01, 2020).

¹⁸⁹ See James V. Grimaldi, *A ‘Grass Roots’ Campaign to Take Down Amazon Is Funded by Amazon’s Biggest Rivals*, WALL ST. J. (Sept. 20, 2019), <https://www.wsj.com/articles/a-grassroots-campaign-to-take-down-amazon-is-funded-by-amazons-biggest-rivals-11568989838>.

¹⁹⁰ *Id.*

¹⁹¹ See FREE AND FAIR MARKETS INITIATIVE, *supra* note 188.

¹⁹² See Grimaldi, *supra* note 189.

reported that FFMI's asserted grassroots support is "not what it appear[s] to be."¹⁹³

According to the *Journal*:

The labor union says it was listed as a member of the group without permission and says a document purporting to show that it gave permission has a forged signature. The Boston professor says the group, with his permission, ghost-wrote an op-ed for him about Amazon but that he didn't know he would be named as a member. The California businessman was dead for months before his name was removed from the group's website this year.¹⁹⁴

FFMI's true principals, according to the *Journal*, are several giant firms that stand to benefit if Amazon falters: Simon Property Group, the largest shopping mall operator in the U.S.,¹⁹⁵ Walmart Inc., the largest retailer in the U.S.¹⁹⁶ and the world's second largest retailer, after Amazon;¹⁹⁷ and Oracle, which competes with Amazon in cloud computing and fiercely battled with it over a \$10 billion Pentagon contract.¹⁹⁸ Each of the three companies was reportedly asked to pony up \$250,000 to strategic communications firm Marathon Strategies to support FFMI's work.¹⁹⁹ Oracle admitted to doing so, and a source confirmed to the *Journal* that Walmart had done so through an intermediary; Simon Property declined to comment.²⁰⁰

C. The Supply Side

As the name indicates, rent-seeking is "demand side" activity: one party is demanding (seeking) that the government's right to coerce be exercised in a way that

¹⁹³ *Id.*

¹⁹⁴ *Id.*

¹⁹⁵ See NATIONAL REAL ESTATE INVESTOR, TOP 25 SHOPPING CENTER OWNERS (July 1, 2008), <https://www.nreionline.com/research-amp-data/top-25-shopping-center-owners>.

¹⁹⁶ See NATIONAL RETAIL FOUNDATION, TOP 100 RETAILERS 2019, <https://nrf.com/resources/top-retailers/top-100-retailers/top-100-retailers-2019> (last visited Oct. 01, 2020).

¹⁹⁷ See Lauren Debter, *Amazon Surpasses Walmart as the World's Largest Retailer*, FORBES (May 15, 2019), <https://www.forbes.com/sites/laurendebter/2019/05/15/worlds-largest-retailers-2019-amazon-walmart-alibaba/#174ea6334171>.

¹⁹⁸ See Grimaldi, *supra* note 189.

¹⁹⁹ *Id.*

²⁰⁰ *Id.*

enables that party to extract rents. Given the Internet's ability to disrupt markets and challenge traditional enterprises by, among other things, reducing transaction costs and information asymmetries,²⁰¹ rent-seeking may be especially common in digital markets as legacy firms deem it the easiest way to retain or enhance their profits.²⁰² But if the policies sought are anticompetitive or socially harmful in some other way, would rent-seeking succeed?

Public choice theory suggests why, at this moment in history, rent-seeking efforts may be especially successful in digital markets. Recall that the fundamental premise of public choice is that actors in the political arena are rational self-interest maximizers. At least at the current time, political actors' pursuit of self-interest seems likely to result in implementation of many of the policies rent-seekers are demanding. To see why this is so, consider the personal interests of government officials—and of those who hold them to account—with respect to digital market regulation.

Government officials' personal interests may lead them to support even poorly designed restrictions on digital platforms. Elected officials are likely to favor such restrictions because it allows them to take credit for “cracking down on Big Tech,” a cause that is popular with both progressives and conservatives, albeit for different reasons.²⁰³

²⁰¹ Ride-sharing services like Uber and Lyft and short-term rental businesses like Airbnb exemplify how the Internet disrupts traditional businesses by allowing new providers to compete. Both services drastically reduce customers' and providers' costs of transacting and, through their reciprocal rating systems, prevent the sorts of “lemons problems” that may arise when buyers and sellers possess different levels of information about each other's offerings. See LAMBERT, *supra* note 2, at 215–16.

²⁰² See, e.g., Steve Blank, *Strangling Innovation: Tesla Versus “Rent Seekers,”* VENTUREBEAT (June 25, 2013), <https://venturebeat.com/2013/06/25/strangling-innovation-tesla-versus-rent-seekers/>; Daniel O'Connor, *Rent Seeking and the Internet Economy (Part 1): Why is the Internet So Frequently the Target of Rent Seekers?,* DISCO—DISRUPTIVE COMPETITION PROJECT (Aug. 15, 2013), <https://www.project-disco.org/competition/081513-rent-seeking-and-the-internet-economy-part-1-why-is-the-internet-so-frequently-the-target-of-rent-seekers/>.

²⁰³ Polling shows majorities of both Democrats and Republicans—68% and 67%, respectively—in favor breaking up Big Tech companies to level the playing field for all content. Katharina Buchholz, *Majority of Americans in Favor of Breaking up Big Tech,* STATISTA (Sept. 23, 2019), <https://www.statista.com/chart/19440/survey-responses-breaking-up-big-tech/>. See also Emily Stewart, *Poll:*

Progressives favor a break-up or severe bridling of major technology platforms like Google, Facebook, and Amazon because they believe the firms exploit workers and suppliers, exacerbate economic inequality by creating concentrations of extreme wealth, and exercise excessive influence over government.²⁰⁴ Conservatives support the same policies but for a different reason: they believe the Big Tech companies are biased against them and disdainful of their values.²⁰⁵ It is hardly surprising, then, that the flurry of proposals to rein in Big Tech includes entries from such ideologically diverse legislators as progressive Senator Elizabeth Warren (D-MA)²⁰⁶ and conservative Senator Josh Hawley (R-MO).²⁰⁷ Politically, Big Tech restrictions are a winner, even when—as in the case of GDPR—the restrictions may entrench the most powerful firms.

Enforcement officials' self-interest may similarly lead them to favor both additional restrictions on and more enforcement action against the major technology platforms. The greater the number and complexity of the restrictions it enforces, the greater the prestige—and often the budget—of an enforcement agency. And given the political salience of Big Tech, enforcement action against the leading technology platforms is especially likely to attract the attention of legislative appropriators. Enforcers

Two-thirds of Americans Want to Break up Companies like Amazon and Google, VOX (Sept. 18, 2019), <https://www.vox.com/policy-and-politics/2019/9/18/20870938/break-up-big-tech-google-facebook-amazon-poll>.

²⁰⁴ See, e.g., Kiran Stacey & Kadhim Shubber, *Democratic Calls to Break up Big Tech Raise Fears in Silicon Valley*, FINANCIAL TIMES (Feb. 17, 2020); TIM WU, *THE CURSE OF BIGNESS: ANTITRUST IN THE NEW GILDED AGE* (2018).

²⁰⁵ See Sam Sabin, *3 in 5 GOP Voters Believe There's Social Media Bias Against Conservatives*, THE MORNING CONSULT (July 24, 2019), <https://morningconsult.com/2019/07/24/3-in-5-gop-voters-believe-theres-social-media-bias-against-conservatives/>.

²⁰⁶ See, e.g., Elizabeth Warren, *Here's How We Can Break up Big Tech*, MEDIUM (Mar. 8, 2019), <https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c>.

²⁰⁷ See, e.g., Ending Support for Internet Censorship Act, S. 1914, 116 Cong. (2019-2020), <https://www.hawley.senate.gov/sites/default/files/2019-06/Ending-Support-Internet-Censorship-Act-Bill-Text.pdf>; Mary Catherine Wellons, *GOP Senator Introduces a Bill That Would Blow up Business Models for Facebook, YouTube and Other Tech Giants*, CNBC (June 19, 2019) <https://www.cnbc.com/2019/06/18/sen-hawley-bill-would-revoke-cda-section-230-for-large-tech-companies.html>.

with political ambitions seem particularly likely to take on Big Tech, as doing so may boost their electoral prospects. Empirical evidence shows that state attorneys general who actively participate in multi-state litigation like the currently pending 48-state investigation of Google are more likely to seek their state's governorship or a seat in the U.S. Senate.²⁰⁸ And across the Atlantic, EU Competition Commissioner Margrethe Vestager's numerous actions against American technology firms have raised her profile and likely aided her quest to become president of the European Commission.²⁰⁹

When it comes to regulation of and enforcement against the major digital platforms, the groups that normally rein in improvident decisions by government officials may be ineffective. Members of the news media may harbor their own biases against big technology platforms, which they perceive as having damaged the news business by usurping consumer attention and advertising revenue.²¹⁰ Academics stand to gain favorable publicity for taking aggressively pro-enforcement/regulation stances, as evidenced by recent fawning press reports on entrepreneurial scholars pushing for action against the largest technology platforms.²¹¹ And most voters, as usual, remain rationally

²⁰⁸ See Colin Provost, *When is AG Short for Aspiring Governor? Ambition and Policy Making Dynamics in the Office of State Attorney General*, 40 PUBLIUS 597 (2010), https://pdfs.semanticscholar.org/38e1/e04f5d0357b408e1f892562ef5fd72dba776.pdf?_ga=2.125407625.249508186.1594661615-1982199029.1594661615.

²⁰⁹ Mehreen Khan & Rochelle Toplensky, *Vestager Discloses Ambition to Become Next EU Commission Chief*, FINANCIAL TIMES (Mar. 21, 2019), <https://www.ft.com/content/e39cc3ae-4bdb-11e9-bbc9-6917dce3dc62>.

²¹⁰ See, e.g., Ben Smith, *Big Tech Has Crushed the News Business. That's About to Change*, N.Y. TIMES (May 10, 2020) (observing that "most news executives in this country share a viewpoint on the platforms, having seen them pull advertising dollars from the news business and spread misinformation at the expense of professional journalism. . .").

²¹¹ See, e.g., David Stretfeld, *Amazon's Antitrust Antagonist Has a Breakthrough Idea*, N.Y. TIMES (Sept. 7, 2018), <https://www.nytimes.com/2018/09/07/technology/monopoly-antitrust-lina-khan-amazon.html>; Jeff Horwitz, *She Argued Facebook Is a Monopoly. To Her Surprise, People Listened.*, WALL ST. J. (Dec. 10, 2019), <https://www.wsj.com/articles/yale-law-grads-hipster-antitrust-argument-against-facebook-finds-mainstream-support-11575987274>; David Dayen, *The Radicalization of Fiona Scott Morton: A Yale Professor's Transformation from Sober Academic to Antitrust Crusader*, NEW REPUBLIC (May 23, 2019), <https://newrepublic.com/article/153785/radicalization-fiona-scott-morton>. This is in no way intended to cast aspersions on the motivations of the scholars profiled in the cited articles. It is merely to demonstrate

ignorant; they are unlikely to learn how seemingly small and benign-sounding legal changes, such as elimination of Section 230 protections, the imposition of data-sharing requirements, various privacy mandates, and so forth, could have serious adverse consequences. In short, public choice theory suggests that the current political environment is favorable for rent-seeking endeavors in digital markets.

CONCLUSION – LOOKING AHEAD

This chapter has described public choice theory and the phenomenon of rent-seeking and has documented instances of rent-seeking activity in digital markets. Understanding what rent-seeking is, what forms it takes, and why it so often succeeds is important for at least two reasons. First, such an understanding helps policymakers assess whether a particular market failure warrants a regulatory fix. Because public choice concerns are inevitable when government exercises its right to coerce, they should always be weighed against any welfare benefits government intervention could secure.

More importantly for purposes of this report, an understanding of public choice and rent-seeking can assist in crafting regulatory interventions to secure as much social welfare as possible. If individuals indeed act in the public sphere as they do in other contexts—*i.e.* as rational self-interest maximizers—then some forms of regulatory intervention will be less likely than others to achieve their public-spirited aims. For example, a sectoral regulator that has continual contact with its regulatees and extensive discretion to restrict or mandate market participants' activities in the pursuit of some amorphous goal like "the public interest" is more susceptible to capture than a general, non-sector-specific regulator with minimal regulatee contact, less discretion, and a narrower mandate. Of course, the former sort of regulator will also have some advantages over the latter, such as more industry expertise and a greater ability to

that scholars advocating aggressive enforcements stances against the major technology platforms have received favorable media attention of late.

address unforeseen circumstances. Subsequent chapters of this report consider the tradeoffs between different sorts of regulatory regimes. Making those tradeoffs, however, requires an understanding of the losses likely to occur when rational self-interest maximizers exercise government's extraordinary right to coerce.

Antitrust Enforcement in the Digital Economy: U.S.

Kristian Stout

INTRODUCTION

Antitrust enforcement in digital and high-tech markets is not disconnected from traditional antitrust theory or practice. Yet, unique features of firms operating in digital and other high-tech markets *can* necessitate modification of doctrine. For example, modern antitrust enforcement in digital markets needs to take seriously the presence of network effects in two-sided markets and the procompetitive justifications for various kinds of product design decisions that may otherwise appear to harm competitors under older models of antitrust enforcement. The goal, however, remains enforcement of the consumer welfare standard, even if enforcers and courts must be sensitive to features particular to digital markets.¹

This chapter takes the 2001 D.C. Circuit opinion in *Microsoft* as an inflection point in digital antitrust enforcement. With that case we can first clearly see all of the various threads pulled together that run through modern antitrust enforcement in high tech cases. This chapter begins with a brief overview of the precursor cases that informed enforcement up until the late 1990s before devoting attention to *Microsoft* and the subsequent cases that shape modern antitrust enforcement in digital markets.

I. OLDER CASES/INVESTIGATIONS

In order to understand the state of modern antitrust enforcement in digital markets, it is necessary to understand how precursors to modern doctrine and enforcement biases developed. Although there are undoubtedly a wide range of cases that arguably could be thought of as informing how concepts such as market definition,

¹ For further discussion on network effects and the consumer welfare standard, see *supra* Section I of this Report.

effects analysis, and essential facilities (to name just a few) developed the kernels of enforcement theories applied in digital markets today, what follows is a cross-section that provides a useful foundation.

A. The AT&T Cases

The AT&T cases set an important tone in antitrust enforcement around the treatment of firms engaged in networked technologies. In 1949, DOJ brought a case against AT&T and its subsidiary, Western Electric, under various provisions of the Sherman Act, alleging that “the defendants had monopolized and conspired to restrain trade in the manufacture, distribution, sale, and installation of telephones, telephone apparatus, equipment, materials, and supplies.”² The core of the complaint was that AT&T had improperly leveraged its legally granted monopoly over the telephone networks to disadvantage rivals in various direct and adjacent markets.³ That case settled in 1956, leaving AT&T under a consent decree that “precluded AT&T from engaging in any business other than the provision of common carrier communications services; precluded Western Electric from manufacturing equipment other than that used by the Bell System; and required the defendants to license their patents to all applicants upon the payment of appropriate royalties.”⁴ In 1974, DOJ filed a new antitrust suit against AT&T, and sought structural separation between AT&T and its various Bell Operating Companies (“BOCs”), as well as the divestiture of Western Electric.⁵ In 1982, the parties filed a Modification of Final Judgment that, with minor alterations by the reviewing court, was accepted and resulted in AT&T divesting itself of its regional BOCs.⁶ Notably,

² United States v. Am. Tel. & Tel. Co., 552 F. Supp. 131, 135–36 (D.D.C. 1982).

³ *Id.*

⁴ *Id.* at 137–38.

⁵ *Id.* at 140.

⁶ *Id.* at 141.

at this time the “line of business” restrictions imposed by the 1956 consent decree were removed, thus allowing AT&T to enter into adjacent businesses, such as data processing and computers.⁷

The case was important for a number of reasons, not least of which was that it represented DOJ’s willingness to intervene in complex, networked industries. The reviewing court of the 1982 consent decree—foreshadowing what would today be seen as a neo-Brandeisian view of antitrust enforcement—indeed felt that such intervention was mandated by the nature of US antitrust laws:

The only pervasive two-way communications system is the telephone network. It is crucial in business affairs, in providing information to the citizenry, and in the simple conduct of daily life. In its present form, AT & T has a commanding position in that industry. The men and women who have guided the Bell System appear by and large to have been careful not to take advantage of its central position in America's economic life. There is no guarantee, however, that future managers will be equally careful. In any event, it is antithetical to our political and economic system for this key industry to be within the control of one company. For these reasons, the Court concludes that the loosening of AT & T's control over telecommunications through the divestiture of the Operating Companies will entail benefits which transcend those which flow from the narrowest reading of the purpose of the antitrust laws.⁸

Although not an essential facilities case in the strict sense, the language the court used in describing the necessity of restructuring the firm verges on the justification for the doctrine. It was “crucial in business affairs,” as well as in the “simple conduct of daily life.” The managers of the system only refrained from taking advantage of America by virtue of AT&T’s central importance through self-restraint. Thus, the necessity was to, in effect, make the single AT&T firm *less* essential to American life by restructuring it into separate companies.

In pursuing this course, however, the court completely underestimated the scale efficiencies entailed in managing a large network under AT&T. Indeed, by the turn of the

⁷ *Id.*

⁸ *Id.* at 165.

century, many of the BOCs had reconsolidated in order to once again realize those efficiencies.⁹

B. The IBM Case

After a two-year investigation into a wide range of practices, DOJ brought a case against IBM in 1969.¹⁰ DOJ claimed that IBM was illegally maintaining its monopoly over general-purpose computers via predatory pricing, illegally bundled hardware and software, and announcing speculative products with the purpose of depressing interest in rivals' products.¹¹

As remains common today, the government framed its case around a very narrow market definition that only encompassed manufacturers of "complete systems of general-purpose computers."¹² Thus, DOJ did not construe smaller firms that only competed for pieces of IBM's overall business as relevant competitors.

The IBM case emerged from the *ALCOA* tradition that would allow punishment of firms that merely became large by outcompeting rivals.¹³ But during the very long period of time the matter was pending (from 1969–82) the center of gravity shifted in antitrust enforcement. After *Berkey Photo*,¹⁴ merely being a dominant firm was no longer enough to support an inference of violation of the antitrust laws. Consequently, after more than a decade of trying to substantiate a case, DOJ dropped the matter.¹⁵

⁹ See Jose Pagliery, *How AT&T Got Busted Up and Pieced Back Together*, CNN BUSINESS (May 20, 2014, 09:30 AM), <https://money.cnn.com/2014/05/20/technology/att-merger-history/index.html>

¹⁰ John E. Lopatka, *United States v. IBM: A Monument to Arrogance*, 68 ANTITRUST L.J. 145, 146–47 (2000).

¹¹ *Id.* at 147.

¹² *Id.* (The modern analog is perhaps best exemplified by the European Commission's Android decision wherein the market was defined in a way where iOS did not exert competitive pressure on Android).

¹³ *United States v. Aluminum Co. of Am.*, 148 F.2d 416 (2d Cir. 1945) [hereinafter *ALCOA*].

¹⁴ *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263 (2d Cir. 1979).

¹⁵ Edward T. Pound, *Why Baxter Dropped the I.B.M. Suit*, N.Y. TIMES, Jan. 9, 1982 (§ 2), at 37, <https://www.nytimes.com/1982/01/09/business/why-baxter-dropped-the-ibm-suit.html?searchResultPosition=1>.

The IBM case is an early example of the way that enforcers miss the larger dynamics at play in fast-moving technologically intensive industries. The market is envisioned by enforcers as static, and future activity is only imagined along familiar, known vectors. But over the course of the investigation and litigation the entire computing landscape changed under IBM, and effectively nullified the government's claims. Between 1968 and 1982, IBM's market share for "electronic data processing" fell from 50 percent to 36 percent.¹⁶ And even as mainframe computers gave way to mini- and micro- computers, IBM did not significantly enter those newer markets until the early 1980s.¹⁷ Surely some of that is attributable to a response to the litigation, but much of it was also a result of IBM failing to adequately adapt to changes in consumer demand as competitors redefined the market itself instead of choosing to compete along known vectors.

C. OAG v. FTC

OAG v. FTC was an early case that foreshadowed modern discussions of two-sided markets and data possession, as well as something like a duty to deal or essential facilities argument in that context.¹⁸ OAG was a "monopolist provider" of detailed flight route information in a printed guide that it published.¹⁹ OAG challenged an FTC Order that prohibited it from "arbitrarily discriminating against any air carrier or class of carriers in publishing connecting flight listings."²⁰ The FTC focused its complaint on the fact that OAG did not include all commuter flight routes in its guide, and thus biased its

¹⁶ David Levy & Steve Welzer, *System Error: How the IBM Antitrust Suit Raised Computer Prices*, AEI J. GOV'T & SOC'Y, Sept./Oct. 1985, at 27, 29, <https://www.cato.org/sites/cato.org/files/serials/files/regulation/1985/9/v9n5-6.pdf>.

¹⁷ *Id.*

¹⁸ *Official Airline Guides, Inc. v. FTC*, 630 F.2d 920 (2d Cir. 1980).

¹⁹ *Id.* at 921.

²⁰ *Id.*

publication in favor of larger commercial providers.²¹ The court acknowledged that “substantial evidence supports the Commission's findings of significant competition between certificated and commuter carriers, and of injury to that competition, as well as the finding that OAG “arbitrarily” refused to publish the connecting flight schedules of commuter carriers.”²²

OAG, in its turn, cited *US v. Colgate* for the proposition that merely disadvantaging competitors or other third-party firms was an insufficient basis for finding that the Sherman Act had been violated.²³ The FTC acknowledged that its own argument was novel in light of *US v. Colgate*, but that firms should be chastised when they exercise otherwise permissible business judgment in an arbitrary fashion:

The Commission did not find in the present case “any purpose to create or maintain a monopoly,” but went on to say that “the philosophy of Colgate must give way to a limited extent where the business judgment is exercised by a monopolist in an arbitrary way.” The Commission conceded that its result “may be inconsistent to some extent with the theory of the Colgate doctrine.”²⁴

The court disagreed, worrying that extending the FTC’s authority to allow for review of the arbitrariness of business judgment would create a concerning degree of discretionary enforcement:

[W]e think enforcement of the FTC's order here would give the FTC too much power to substitute its own business judgment for that of the monopolist in any decision that arguably affects competition in another industry. Such a decision would permit the FTC to delve into, as the Commission itself put the extreme case, “social, political, or personal reasons” for a monopolist's refusal to deal.²⁵

To frame *OAG v. FTC* in modern terms, OAG in a sense was seen as operating something like a two-sided platform, in that it worked with airlines on one side in order to provide flight listings to consumers on the other side. In the process it was therefore in

²¹ *Id.* at 924.

²² *Id.*

²³ *Id.* at 925 (citing *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919)).

²⁴ *Id.* at 925.

²⁵ *Id.* at 927.

possession of a commanding degree of information, and its product design decisions were influential on firms that wished to rely on it to reach consumers. The FTC also attempted to describe OAG's data as something like an essential facility (though it did not explicitly do so), and asserted that by possessing that data, OAG obtained an additional obligation to act fairly above and beyond base-line antitrust duties. The court ultimately disagreed with this characterization, however.²⁶

D. The FTC Microsoft Investigation

There were a series of government investigations throughout the 1990s that set the stage for the ultimate *Microsoft* case. The FTC began investigating Microsoft in 1990.²⁷ The investigation originally arose as a result of a partnership between Microsoft and IBM in the joint production of a new operating system (over which IBM would later assume sole control).²⁸

The investigation expanded beyond its initial focus, and came to “cover[] a wide range of allegations, including that Microsoft had provided its own applications software developers with critical information about Microsoft's operating systems not provided to competing applications software developers, and that it had announced the development of operating system software in order to discourage original equipment manufacturers of personal computers (PC OEMs) from using competing operating systems (a practice the district court later called “vaporware”)”²⁹ Strikingly, many of these allegations were similar to those brought against IBM over twenty years earlier.

Ultimately the FTC was deadlocked on whether to bring suit against Microsoft, and

²⁶ *Id.*

²⁷ George Bittlingmayer & Thomas W. Hazlett, *DOS Kapital: Has Antitrust Action Against Microsoft Created Value in the Computer Industry?* (June 2, 1998) (unpublished manuscript), <https://ssrn.com/abstract=99832>.

²⁸ Deborah A. Garza, *The Court of Appeals Sets Strict Limits on Tunney Act Review: The Microsoft Consent Decree*, *ANTITRUST*, Fall 1995, at 21, 21–22.

²⁹ *Id.*

the investigation was suspended.³⁰ In an unusual development, the DOJ opted to pick up the investigation once the FTC had dropped it, laying the basis for its subsequent and well-known case against Microsoft in the mid and late 1990s.³¹

II. MICROSOFT AND ITS AFTERMATH

A. Microsoft

The 2001 D.C. Circuit *Microsoft* decision looms large in the modern enforcement context of the digital economy as it grapples with how courts should understand phenomena like product design and integration by large incumbents in markets characterized by strong network effects.

DOJ pursued Microsoft with antitrust claims in a number of different ways. First, it picked up from the FTC's terminated investigation and filed a civil complaint against Microsoft in July 1994 along with a consent order.³² The 1994 Consent Order focused on Microsoft's licensing practices, in particular on the requirements that OEMs pay Microsoft a royalty for every x86 system shipped, regardless of whether Windows was preinstalled or not,³³ as well as on Microsoft's use of nondisclosure agreements with external developers.³⁴ The 1994 Consent Decree also contained a provision forbidding Microsoft from "enter[ing] into any License Agreement in which the terms of that agreement are expressly or impliedly conditioned upon . . . the licensing of any other Covered Product, Operating System Software product or other product (provided, however, that this provision in and of itself shall not be construed to prohibit Microsoft

³⁰ *Id.*

³¹ *Id.*

³² *United States v. Microsoft Corp.*, 56 F.3d 1448, 1451 (D.C. Cir. 1995).

³³ Note the similarity to *FTC v. Qualcomm Inc.*, 935 F.3d 752 (9th Cir. 2019), and the Commission's disdain for Qualcomm's requirement of a blanket licensing for its IP, regardless of whether the OEMs actually implemented the technology.

³⁴ *United States v. Microsoft Corp.*, 56 F.3d 1448, 1351 (D.C. Cir. 1995).

from developing integrated products).”³⁵

In an action brought to enforce the 1994 Consent Decree, DOJ alleged that Microsoft violated this provision by marketing Windows and Internet Explorer—then still distinct pieces of software—as a package.³⁶ The D.C. Circuit held that such bundling did not violate the consent decree.³⁷

Shortly before that decision was rendered, DOJ filed a separate antitrust action challenging Microsoft’s conduct against Netscape under the Sherman Act.³⁸ Microsoft had begun integrating Internet Explorer directly into Windows in such a way that users could not remove the web browser, a move that DOJ considered to be unlawful tying.³⁹ DOJ also alleged that Microsoft was trying to illegally maintain its monopoly in the Intel-compatible operating system market as well as attempting to monopolize the browser market with these moves.⁴⁰ DOJ ultimately only prevailed on the limited set of its claims that focused on Microsoft’s use of a so-called “applications barrier to entry” (discussed *infra*) to protect its monopoly.

In many ways, DOJ’s case was of a piece with *IBM*. *Microsoft* was predicated on the notion that a firm that had developed a dominant technology paradigm would continue to indefinitely enjoy dominance over that paradigm, and, perhaps more naively, that the paradigm would indefinitely continue to shape some important technological market. Thus, any product design alterations that Microsoft made would be suspected of being used to reinforce its dominance over the paradigm. As with *IBM*, absent from the case was serious consideration that it would ultimately be lateral competition that would

³⁵ United States v. Microsoft Corp., 147 F.3d 935, 939 (D.C. Cir. 1998).

³⁶ *Id.*

³⁷ *Id.* at 950–52.

³⁸ United States v. Microsoft Corp., 253 F.3d 34, 47 (D.C. Cir. 2001).

³⁹ *Id.*

⁴⁰ *Id.*

reduce Microsoft's dominance by undermining the dominant paradigm.

As such, this case represents a prime example of the inhospitality tradition of antitrust⁴¹—an approach that is woefully common in how modern enforcers and courts approach novel conduct in the technology context.

Four important features of the case left an indelible mark on high-technology cases: how the court construed the relevant market, the design choices involved in product integration, the treatment of entry barriers in markets characterized by network effects (what we would today refer to as two-sided markets), and how tying claims apply in technology markets.

1. Market Definition

On appeal, the court accepted the district court's market definition of "the licensing of all Intel-compatible PC operating systems worldwide."⁴² In reaching this definition, the court drew a narrow boundary around the conceivable scope of competition, excluding operating system producers like Apple, as well as potential new entrants that would compete on different terms to undermine the market, such as things like "handheld devices and portal websites."⁴³ Notably, the court also refused to include "middleware":

Microsoft argues that, because middleware could usurp the operating system's platform function and might eventually take over other operating system functions (for instance, by

⁴¹ See, e.g., Oliver E. Williamson, *Economics and Antitrust Enforcement: Transition Years*, ANTITRUST, Spring 2003, at 61, 64 (arguing that the government's position in *United States v. Arnold, Schwinn & Co.* reflected misconceptions about economics leading it to view customer and territorial restraints "'not hospitably, in the common law tradition, but inhospitably in the tradition of antitrust'"); Alan J. Meese, *Price Theory, Competition, and the Rule of Reason*, 2003 U. ILL. L. REV. 77, 124 (2003) (arguing that the inhospitality tradition of antitrust "manifested itself in the form of extreme hostility toward any contractual restraint on the freedom of individuals or firms to engage in head-to-head rivalry"); Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 4 (1984) ("Donald Turner once described the 'inhospitality tradition of antitrust.' The tradition is that judges view each business practice with suspicion, always wondering how firms are using it to harm consumers.").

⁴² *United States v. Microsoft Corp.*, 253 F.3d 34, 52 (D.C. Cir. 2001).

⁴³ *Id.* at 57.

controlling peripherals), the District Court erred in excluding Navigator and Java from the relevant market. The District Court found, however, that neither Navigator, Java, nor any other middleware product could now, or would soon, expose enough APIs to serve as a platform for popular applications, much less take over all operating system functions. Again, Microsoft fails to challenge these findings, instead simply asserting middleware's "potential" as a competitor.⁴⁴

In retrospect, the market definition was proven by circumstances to be far too narrow, as, less than a decade after the opinion, Microsoft found itself rapidly ceding ground to exactly that set of competitors: smartphones and tablets, on the one hand, and light-weight Internet-connected devices such as Chromebooks on the other.⁴⁵ The court's market definition focused on the capability of potential competitors to "take over all operating system functions," highlighting the degree to which competition could only be understood to work within the existing technological paradigm.

Thus, the exclusion of middleware reveals flaws in how DOJ and the reviewing courts understood the software market. Although it's true that no middleware product arose to perfectly replicate Windows, and therefore assume its place as the dominant "Intel-compatible operating system," this view of competition with respect to operating systems is too cramped. It is true that Windows competed with other full-fledged operating systems, like Mac OS and Linux. But Microsoft believed at the time—and history has shown it to be true—that competition in high tech markets rarely, if ever, comes from upstart products that arise to completely replace a dominant player.⁴⁶ Java—the middleware product that was central in Microsoft's competitive thoughts at the

⁴⁴ *Id.* at 53.

⁴⁵ Leo Sun, *How Microsoft Corporation Lost These 6 Markets*, MOTLEY FOOL (Jan. 31, 2018, 9:32 AM), <https://www.fool.com/investing/2018/01/31/how-microsoft-corporation-lost-these-6-markets.aspx>.

⁴⁶ See, e.g., Geoffrey Manne & Alec Stapp, *This Too Shall Pass: Unassailable Monopolies That Were, in Hindsight, Eminently Assailable*, TRUTH ON THE MKT. (Apr. 1, 2019), <https://truthonthemarket.com/2019/04/01/this-too-shall-pass-unassailable-monopolies-that-were-in-hindsight-eminently-assailable/> ("IBM, Microsoft and Nokia were not beaten by companies doing what they did, but better. They were beaten by companies that moved the playing field and made their core competitive assets irrelevant.") (quoting Benedict Evans (@benedictevans), TWITTER (Apr. 6, 2018, 2:00 PM), <https://twitter.com/benedictevans/status/982317093088518148>).

time—did indeed become very important as a provider of APIs and software applications that were modular and cross-platform. And as cloud computing arose, the nature of enterprise computing shifted, and the need for the particular feature set represented by Windows shifted. Thus, something like Google’s suite of productivity applications could become viable cloud-based replacements for Microsoft’s tightly integrated office suite. The future of competition for Windows, in short, was not to replace Windows, but to modularize the functionality of Windows such that its centrality to computing would diminish as consumers were able to spread computing tasks across multiple devices and the cloud.

In contrast to the market definition in *Microsoft*, the government unsuccessfully attempted to draw a similarly narrow market definition in the *Oracle/Peoplesoft* merger two years later. In 2003, Oracle’s acquisition of Peoplesoft was challenged by DOJ and nine states under Section 7 of the Clayton Act.⁴⁷ Peoplesoft and Oracle created software products that fulfilled a variety of business needs, including software to enable “human resources management” (“HRM”) and “enterprise resource planning” (“ERP”).⁴⁸ DOJ attempted to limit the potential scope of competition by restricting the geographic scope to only US software providers, and also attempted to define the relevant product market as only “high function” software suites.⁴⁹ DOJ, however, was unable to demonstrate why software vendors abroad could not reasonably sell into the US market.⁵⁰ The court also held that “[t]he equivocal and vague evidence presented by plaintiffs at trial does not permit the court to exclude mid-market vendors, outsourcing or best of breed solutions from any product market that includes ERP software sold by Oracle, PeopleSoft and

⁴⁷ *United States v. Oracle Corp.*, 331 F. Supp. 2d 1098 (N.D. Cal. 2004).

⁴⁸ *Explore PeopleSoft Products*, Oracle (2020), <https://www.oracle.com/applications/peoplesoft/products.html>.

⁴⁹ *Oracle*, 331 F. Supp. 2d at 1123 (“Plaintiffs offer a product market of high function HRM [human relations management] and FMS [financial management systems] and a geographic market of the United States”).

⁵⁰ *Id.* at 1176–77.

SAP.”⁵¹ Thus, in contrast to *Microsoft*, the court pushed back on DOJ’s attempt to exclude smaller and more modular competitors that could compete with Oracle and Peoplesoft along more limited dimensions.⁵²

Drawing relatively narrow market definitions and excluding competitors that develop alternative markets unfortunately continues to be a common practice for enforcers. See, for example, the EU Android case in which Apple’s iOS was excluded as a competitor to Android.⁵³ Calls to pursue Amazon for monopolizing “e-commerce” suffer from the same defects as well, insofar as they fail to account for both offline retail competition, as well online, non-retail providers like Google with its Shopping search vertical.⁵⁴

2. Product Design and Improper Integration

When considering anticompetitive effects, the court applied the traditional burden shifting approach in monopolization cases:

[I]f a plaintiff successfully establishes a *prima facie* case under § 2 by demonstrating anticompetitive effect, then the monopolist may proffer a “procompetitive justification” for its conduct. If the monopolist asserts a procompetitive justification—a nonpretextual claim that its conduct is indeed a form of competition on the merits because it involves, for example, greater efficiency or enhanced consumer appeal—then the burden shifts back to the plaintiff to rebut that claim.⁵⁵

As part of its *prima facie* case, the government acknowledged that Microsoft had acquired a monopoly over “Intel-compatible operating systems” on the merits, but

⁵¹ *Id.* at 1158.

⁵² *See id.* at 1176–77.

⁵³ Press Release, Eur. Comm’n, Antitrust: Comm’n Fines Google €4.34 Billion for Illegal Pracs. Regarding Android Mobile Devices to Strengthen Dominance of Google’s Search Engine (July 18, 2018), https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4581 [hereinafter EC Google Press Release].

⁵⁴ Lisa Lacy, *3 Reasons Google’s New Shopping Listings Are Really About Amazon*, ADWEEK (Apr. 23, 2020), <https://www.adweek.com/brand-marketing/3-reasons-googles-new-shopping-listings-are-really-about-amazon/>.

⁵⁵ *United States v. Microsoft Corp.*, 253 F.3d 34, 59 (D.C. Cir. 2001).

claimed that it used special features of its dominant position to anticompetitively extend and maintain that monopoly.⁵⁶ Two particular allegations stand out as particularly relevant for the modern digital economy. First, DOJ alleged that Microsoft improperly integrated IE and Windows in order to disadvantage rivals, and, second, that it used a so-called “applications barrier to entry” to protect itself from competition on the merits.

a. Improper Integration

The D.C. Circuit was skeptical about condemning product design changes as anticompetitive:

In a competitive market, firms routinely innovate in the hope of appealing to consumers, sometimes in the process making their products incompatible with those of rivals; the imposition of liability when a monopolist does the same thing will inevitably deter a certain amount of innovation. This is all the more true in a market, such as this one, in which the product itself is rapidly changing.⁵⁷

Nevertheless, the court largely agreed that the integration of IE into Windows effected ends that were not competition on the merits, and thus had anticompetitive effects.⁵⁸ Yet, the court failed to be adequately sensitive to just how complex the dynamics of high technology industries can be. One of the middleware competitors at the heart of the case—Netscape—for instance was thought to suffer foreclosure from distribution channels as a result of Microsoft leveraging its dominance with OEMs and internet access providers to obtain default installation of IE in lieu of other browsers (like Netscape).⁵⁹ But Netscape was also notably pursuing a highly unusual strategy in the years during the pendency of the case in which it opted to completely rewrite its codebase.⁶⁰ This had the effect of Netscape not

⁵⁶ *Id.* at 67 (2001) (“Plaintiffs plainly made out a prima facie case of harm to competition in the operating system market by demonstrating that Microsoft’s actions increased its browser usage share and thus protected its operating system monopoly from a middleware threat and, for its part, Microsoft failed to meet its burden of showing that its conduct serves a purpose other than protecting its operating system monopoly”).

⁵⁷ *Id.* at 65.

⁵⁸ *Id.* at 65–66.

⁵⁹ *See id.* at 67.

⁶⁰ Joel Spolsky, *Things You Should Never Do, Part I*, JOEL ON SOFTWARE (Apr. 6, 2000), <https://www.>

shipping a new version of its browser or features for nearly three years, essentially a competitive eternity in software.⁶¹ Perhaps Microsoft's conduct was churlish in some respects, but it occurred in a broader dynamic competitive context that was not adequately grasped by the court.

Microsoft also failed to rebut a number of the improper integration claims asserted by DOJ, and thus the court ruled against it in those respects.⁶² Indeed, the product integration aspects of the case are a good illustration of the burden shifting framework the court applied. Just as Microsoft failed to offer procompetitive justifications in response to DOJ's *prima facie* case on two points, DOJ in turn failed to respond to Microsoft's procompetitive justification on a third point (that it was more efficient to allow in-application web browsing in certain contexts).⁶³

b. Entry Barriers and the "Applications Barrier to Entry"

Much more of the action in the case occurred around what the opinion refers to as the "applications barrier to entry" — which the court said was a "structural barrier that protects the company's future position."⁶⁴ The "applications barrier to entry" has two primary characteristics: "(1) most consumers prefer operating systems for which a large number of applications have already been written; and (2) most developers prefer to write for operating systems that already have a substantial consumer base."⁶⁵ Further, "[t]his "chicken-and-egg" situation ensures that applications will continue to be written for the already dominant Windows, which in turn ensures that consumers will continue

joelonsoftware.com/2000/04/06/things-you-should-never-do-part-i/.

⁶¹ *Id.*

⁶² *United States v. Microsoft Corp.*, 253 F.3d 34, 67 (D.C. Cir. 2001).

⁶³ *Id.*

⁶⁴ *Id.* at 55.

⁶⁵ *Id.*

to prefer it over other operating systems.”⁶⁶

Implicit in the “applications barrier to entry,” at least from a modern vantage point, is the fact that such a barrier would only truly arise in the normal case in the presence of strong network effects on a two-sided platform. In fact, the Court did wrestle with whether “old economy” monopoly antitrust doctrines apply to new technological markets characterized by network effects.⁶⁷

The court properly observed that, even where network effects could lead to a form of entrenchment, such entrenchment was ultimately fleeting owing to rapid creative destruction cycles that transform the market directly.⁶⁸ Microsoft, naturally, contended that the operating system market was characterized by these network effects,⁶⁹ though it fell short of directly referring to Windows as a platform or two-sided market.⁷⁰ Even if it had done so, however, the allegation likely would not have changed the outcome of the case. The court believed that, even if the Windows platform were characterized by strong, positive network effects, such a reality

does not appreciably alter our mission in assessing the alleged antitrust violations in the present case. As an initial matter, we note that there is no consensus among commentators on the question of whether, and to what extent, current monopolization doctrine should be amended to account for competition in technologically dynamic markets characterized by network effects.⁷¹

And it is not just the court that failed to adequately appreciate the importance of network effects to the case, as Microsoft made “no claim that anticompetitive conduct should be assessed differently in technologically dynamic markets.”⁷²

⁶⁶ *Id.*

⁶⁷ *Id.* at 49.

⁶⁸ *Id.*

⁶⁹ *Id.* at 50.

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² *Id.*

Nonetheless, in many ways Microsoft can be thought of as a proto-two-sided market case. In particular, the leveraging theory of the case, described as an "applications barrier to entry", only makes sense if Microsoft were able to rely on power it obtained using network effects on one side of the platform to cultivate a strong customer base on the other. However, had the court fully considered arguments about network effects and two-sided markets, the "applications barrier to entry" theory would have been much more difficult to maintain. In particular, had the court actually considered the two sides of developers and consumers as tightly bound by positive network effects, it would have potentially taken more seriously the negative feedback loop that can occur and quickly erode the value of one or the other side of a platform.

Thus, the inhospitality dimension of the case arises insofar as courts and enforcers are unwilling to allow a more dynamic picture of how network effects truly function, and how they fail to insulate firms from a wide variety of competition—which was the case in *Microsoft*.

In this regard, the government committed two important errors. First, it failed to credit Microsoft properly with being the progenitor of the technological ecosystem it had indeed created—thus automatically casting a doubtful eye on all of the challenged conduct that, if viewed more properly in context, was much more sensibly understood as part of the firm's effort to bootstrap and perpetuate that ecosystem. The second major error was that the "applications barrier to entry" theory pushed by the government was relied upon by the court to use short term effects on competitors as a proxy for harm to consumers. This not only discounted the long-term investment considerations necessary for Microsoft to generate the ecosystem in the first place, but also entirely discounted or ignored the necessary cost-benefit calculation that should be undertaken around an "applications barrier to entry."

In particular, if the so-called barrier is effective, it is only effective because that barrier is a visible extension of the software ecosystem that supports a whole range of

developers and peripherals manufacturers. Thus, even if we assume that competitive OS makers are relatively disadvantaged by the network effects of the Windows OS, the third-parties that work inside that ecosystem are massively benefitted by the presence of a market they do not have to develop, and educational opportunities to quickly bring them up to speed creating viable products for that ecosystem.

On the margins, some resources that may have gone into creating competitor operating systems will instead go into creating complementary software products for Windows—but so what? It's *possible* that this is an inferior state of affairs, but the reviewing courts and enforcement agencies in *Microsoft* completely failed to grapple with this reality.

In effect, despite acknowledging that it had acquired a monopoly position through superior acumen, the government sought to punish Microsoft for being *too* successful. Because of the so-called “applications barrier” any move that Microsoft made to improve its product quality would appear to be anticompetitive leveraging. Thus, by integrating Internet Explorer into its operating system, and potentially increasing the value of Windows to third-party developers (but also potentially making it harder for browser developers to offer as high-quality a product), Microsoft was accused of acting anticompetitively. Nearly any product improvement it made that also made Windows more valuable could be cast as extending or relying upon an anticompetitive “applications barrier to entry.”

And, as noted above, this is of a piece with the standard—and still unfortunately common—approach to antitrust analysis of tech industries. The rumors about the percolating cases, as well as existing cases (particularly from the EU), against Google, Amazon, and Apple are almost entirely cut from the *IBM* and *Microsoft* cloth in this respect. The EU Android case was essentially a tying accusation against Google, alleging that it was anticompetitively linking access to its Play Store with requirements on OEMs that they install a suite of other Google apps by default on Android devices, despite the

procompetitive justifications entailed in keeping a coherent ecosystem together.⁷³

The Google Search case from the EU—the US analog of which appears to be up for consideration by DOJ and state attorneys general⁷⁴—commits the same sort of fallacies as the *Microsoft* cases.

Google was essentially accused of anticompetitive “self-preferencing” by redesigning search results so that users less frequently had to click through to third-party web sites for answers to common queries. But such an allegation only makes sense if one views the Google Search results in static snapshots that are disconnected from an ongoing optimization process that both benefits searchers as well as some set of content providers, while also sometimes disadvantaging other content providers that had historically relied on a certain way of Google search working.

3. Tying

The government ultimately won *Microsoft*, but on appeal lost on many of the more speculative theories it advanced, in particular its attempt to make out a claim that Microsoft was illegally tying Internet Explorer to the Windows Operating system.⁷⁵ Central to the court’s rejection of per se tying rules, was a sensitivity to the idea that innovative industries may make product design choices that include integration, and a per se rule would chill this sort of potential procompetitive conduct:

While the paucity of cases examining software bundling suggests a high risk that per se analysis may produce inaccurate results, the nature of the platform software market affirmatively suggests that per se rules might stunt valuable innovation. . . . First, as we explained in the previous section, the separate-products test is a poor proxy for net efficiency from newly integrated products. . . . Second, because of the pervasively innovative character of platform software markets, tying in such markets may produce efficiencies that courts have not previously encountered and thus the Supreme Court had not factored into the per se rule

⁷³ See EC Google Press Release, *supra* note 53.

⁷⁴ Brent Kendall & John D. McKinnon, *Justice Department, State Attorneys General Likely to Bring Antitrust Lawsuits Against Google*, WALL STREET J. (May 15, 2020, 4:32 PM), <https://www.wsj.com/articles/justice-department-state-attorneys-general-likely-to-bring-antitrust-lawsuits-against-google-11589573622>.

⁷⁵ *United States v. Microsoft Corp.*, 253 F.3d 34, 95–96 (D.C. Cir. 2001).

as originally conceived.⁷⁶

As a result, the standard that emerged from *Microsoft*—although still subject to debate—presents a high burden for plaintiffs attempting to allege tying claims in the context of software and other forms of high technology.

The court was hesitant to presume that, in software (and possibly other high technology markets) that were very dynamic and categorized by rapid change, integration of products was per se unlawful. Otherwise, if a provider simply integrated new features into a software product, it could be accused of tying, even when such an integration clearly benefits consumers. Tellingly, on remand to the district court, DOJ dropped this claim.⁷⁷

B. Post-Microsoft Cases and Investigations

In the wake of *Microsoft*, investigations (with accompanying closing letters) as well as cases have continued to grapple with the unique nature of network effects in the context of platform business models, the potential for leveraging, as well as the extent to which digital services can allow enforcement to inch toward treating providers as “essential.” What follows is an overview of these developments.

1. The FTC’s Google investigation

In 2012, the Federal Trade Commission initiated an investigation of a wide variety of Google’s business practices.⁷⁸ Directly relevant here, the FTC was examining how Google operated its search engine, and whether its practices were designed to

⁷⁶ *Id.* at 92–93.

⁷⁷ *Cf.* *United States v. Microsoft Corp.*, No. CIV. A. 94-1564, 1995 WL 505998, at *1 (D.D.C. Aug. 21, 1995) (The case on remand did not include tying claims).

⁷⁸ Statement of the Federal Trade Commission Regarding Google Search Practices, *In the Matter of Google Inc.*, FTC File No. 111-0163 (Jan. 3, 2013), https://www.ftc.gov/sites/default/files/documents/public_statements/statement-commission-regarding-googles-search-practices/130103brillgooglesearchstmt.pdf [hereinafter Google Closing Statement].

anticompetitively disadvantage rivals.⁷⁹ The investigation arose out of allegations from competitors such as Yelp that Google intentionally altered its search algorithms to systematically disadvantage competing providers of information verticals (like restaurant reviews). There was evidence that at least some FTC staff believed that an antitrust case should be brought against Google on non-search issues (such as how it ran its advertising business).⁸⁰ The FTC ultimately dropped the investigation after Google agreed to voluntarily amend some of its business practices, particularly in the ad tech space.

The Commission reviewed approximately 9 million pages of evidence in the course of the investigation.⁸¹ Although it did find some evidence that suggested Google may have tailored its search algorithms to preference its own products, the Commission ultimately concluded that the overall effect of its modifications was to the benefit of consumers.⁸²

The upshot of the closing of the investigation is that the FTC extensively examined allegations of self-preferencing, and, even where there was some evidence to support a claim of self-preferencing that was harmful to competitors, the Commission was willing to balance that against procompetitive justifications that benefit consumers.⁸³ This is distinct from the EC's approach in its Google Shopping decision.⁸⁴

⁷⁹ *Id.* at 1.

⁸⁰ Brody Mullins, Rolfe Winkler & Brent Kendall, *Inside the U.S. Antitrust Probe of Google*, WALL STREET J. (Mar. 19, 2015, 7:38 PM), <https://www.wsj.com/articles/inside-the-u-s-antitrust-probe-of-google-1426793274>.

⁸¹ FTC Statement on Google, *supra* note 78, at 1.

⁸² *Id.*

⁸³ *Id.* at 3 (“In sum, we find that the evidence presented at this time does not support the allegation that Google’s display of its own vertical content at or near the top of its search results page was a product design change undertaken without a legitimate business justification”).

⁸⁴ See, e.g., Geoffrey A. Manne, *The Real Reason Foundem Foundered* (Int’l Ctr. for Law & Econ., Antitrust & Consumer Protection Rsch. Program, White Paper No. 2018-02, 2018), https://laweconcenter.org/wp-content/uploads/2018/05/manne-the_real_reaon_foundem_foundered_2018-05-02-1.pdf. For more on self-

The FTC's closing letter tracks aspects of the *Microsoft* court's unwillingness to intervene in software design decisions, citing the importance of design choices as procompetitive differentiating factors in antitrust analyses:

Product design is an important dimension of competition and condemning legitimate product improvements risks harming consumers. Reasonable minds may differ as to the best way to design a search results page and the best way to allocate space among organic links, paid advertisements, and other features. And reasonable search algorithms may differ as to how best to rank any given website. Challenging Google's product design decisions in this case would require the Commission—or a court—to second-guess a firm's product design decisions where plausible procompetitive justifications have been offered, and where those justifications are supported by ample evidence. Based on this evidence, we do not find Google's business practices with respect to the claimed search bias to be, on balance, demonstrably anticompetitive, and do not at this time have reason to believe that these practices violate Section 5.⁸⁵

The results of various international investigations into Google on these practices have been mixed. On the one hand, in 2018, India fined Google \$21M for “abuse of dominance” in its search practices.⁸⁶ In June of 2017, the EU issued a €2.4B fine against Google. There, the EC held that Google had anticompetitively altered its search algorithm to demote rivals as well

preferencing and the various Google investigations, see Michael Salinger, *Self-Preferencing*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁸⁵ FTC Statement on Google, *supra* note 78, at 3. Compare this with the FTC's willingness to second-guess design choices in its Section 5 consumer protection capacity. See, e.g., Dissenting Statement of Commissioner Joshua D. Wright, In the Matter of Apple, Inc., FTC File No. 1123108, at 1 (Jan. 15, 2014) (“The Commission . . . substitutes its own judgment for a private firm's decisions as to how to design its product . . .”), https://www.ftc.gov/sites/default/files/documents/public_statements/dissenting-statement-commissioner-joshua-d.wright/140115applestatementwright.pdf, Press Release, Fed. Trade Comm'n, FTC, Amazon to Withdraw Appeals, Paving Way for Consumer Refunds Related to Children's Unauthorized In-App Charges (Apr. 4, 2017), <https://www.ftc.gov/news-events/press-releases/2017/04/ftc-amazon-withdraw-appeals-paving-way-consumer-refunds-related>; see also *Humility, Institutional Constraints and Economic Rigor: Limiting the FTC's Discretion: The FTC at 100: Views from the Academic Experts Before the H. Comm. on Energy & Com.*, 113th Cong. 7–9 (2014) (statement of Geoffrey A. Manne, Exec. Dir. Int'l Ctr. for L. & Econ.),

<https://docs.house.gov/meetings/IF/IF17/20140228/101812/HHRG-113-IF17-Wstate-ManneG-20140228.pdf>.

⁸⁶ Aditya Kalra & Aditi Shah, *India's Antitrust Watchdog Fines Google \$21m for “Search Bias”*, DISRUPTIVE.ASIA (Feb. 9, 2018), <https://disruptive.asia/google-guilty-search-bias/>.

as excluded rivals by placing its comparison shopping service more advantageously than their services.⁸⁷

On the other hand, the Canadian Competition Bureau started investigating Google on similar grounds in 2013, and dropped the case in April 2016 finding no violations for search manipulation or promotions of its own services.⁸⁸

2. Nielsen/Arbitron Merger

As we have seen, enforcement agencies are willing to venture in speculative directions when construing market definition. In 2013, for example, the FTC voted 2-1 to impose conditions on the Nielsen/Arbitron merger.⁸⁹ The market the FTC construed for the case did not even exist at the time of the merger. According to the Commission, “[a]lthough there is no commercially available national syndicated cross-platform audience measurement service today, demand for such a service by advertisers and media companies is increasing.”⁹⁰ The Commission believed that Nielsen and Arbitron were the two firms best poised to potentially create that new market, and, therefore, felt it appropriate to impose conditions on the merger.⁹¹ The exact conditions on the merger

⁸⁷ Press Release, Eur. Comm’n, Antitrust: Comm’n Fines Google €2.42 Billion for Abusing Dominance as Search Engine by Giving Illegal Advantage to Own Comparison Shopping Serv. (July 18, 2018), https://ec.europa.eu/commission/presscorner/detail/en/IP_17_1784.

⁸⁸ See Position Statement, Can. Competition Bureau, Competition Bureau Statement Regarding Its Investigation into Alleged Anti-Competitive Conduct by Google (Apr. 19, 2016), <https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04066.html>.

⁸⁹ Complaint, In the Matter of Nielsen Holdings N.V. and Arbitron, Inc., FTC Docket No. C-4439 (Sept. 20, 2013),

<https://www.ftc.gov/system/files/documents/cases/140228nielsenholdingscmpt.pdf>; see also Decision & Order, In the Matter of Nielsen Holdings N.V. and Arbitron, Inc., FTC Docket No. C-4439 (Feb. 24, 2014) <https://www.ftc.gov/system/files/documents/cases/140228nielsenholdingsdo.pdf> (approving divestiture of Linkmeter).

⁹⁰ Complaint ¶ 10, In the Matter of Nielsen Holdings N.V. and Arbitron, Inc., FTC Docket No. C-4439 (Sept. 20, 2013),

<https://www.ftc.gov/system/files/documents/cases/140228nielsenholdingscmpt.pdf>.

⁹¹ *Id.*

were not as important as the fact that the FTC used its authority to shape a *potential* market—one that did not exist—and thus, could not reasonably rely on anything approaching economic analysis to reach its decision. As then-Commissioner Wright observed in dissent:

The Commission thus challenges the proposed transaction based upon what must be acknowledged as a novel theory—that is, that the merger will substantially lessen competition in a market that does not today exist.

[W]e . . . do not know how the market will evolve, what other potential competitors might exist, and whether and to what extent these competitors might impose competitive constraints upon the parties.⁹²

This approach, however, suggests an analytical precursor to the *FTC v. Qualcomm* case (discussed *infra*) where the district court was willing to infer anticompetitive behavior from the fact that particular competitors were harmed. In *Nielsen/Arbitron*, the Commission believed that a simple collation of a variety of facts substituted for an economic analysis (which was plainly impossible given the fact that the market did not even exist). According to The FTC’s then-Director of the Bureau of Competition:

The Commission based its decision not on crystal-ball gazing about what might happen, but on evidence from the merging firms about what they were doing and from customers about their expectations of those development plans. From this fact-based analysis, the Commission concluded that each company could be considered a likely future entrant, and that the elimination of the future offering of one would likely result in a lessening of competition.⁹³

In other words, despite the absence of actual economic evidence, circumstantial evidence of intent to potentially create a new market sufficed to intervene in the merger.

⁹² Dissenting Statement of Commissioner Joshua D. Wright, *Nielsen Holdings N.V. and Arbitron Inc.*, FTC File No. 131-0058 (Sept. 20, 2013), https://www.ftc.gov/sites/default/files/documents/public_statements/dissenting-statement-commissioner-joshua-d.wright/130920nielsenarbitron-jdwstmt.pdf.

⁹³ Deborah L. Feinstein, Dir., Fed. Trade Comm’n Bureau of Competition, *The Forward-Looking Nature of Merger Analysis*, Address at Advanced Antitrust U.S. 21 (Feb. 2014), https://www.ftc.gov/system/files/documents/public_statements/forward-looking-nature-merger-analysis/140206mergeranalysis-dlf.pdf.

3. Ohio v. American Express

Ohio v. American Express was the Supreme Court’s first explicit effort to deal with two-sided markets, which are important to many platform-based firms in the digital economy. In *Ohio v. American Express*, plaintiffs alleged that American Express imposed anticompetitive “antisteering” provisions on merchants.⁹⁴ These provisions forbade merchants from redirecting customers to forms of payment that charged merchants lower fees than American Express. According to the plaintiffs’ theory, these provisions were used by American Express to raise its prices, reduce the number of credit card transactions, or otherwise stifle competition.⁹⁵

Relevant to the broader digital economy, the case concerned the proper definition of antitrust relevant markets, as well as how to deal with competitive effects analysis in two-sided markets.⁹⁶

At the trial level, the district court acknowledged that there was a strong connection between the “merchants” side of Amex’s platform and the “consumer” side.⁹⁷ Nonetheless, the court merely referred to them as “deeply interrelated” and, therefore, failed to engage with Amex’s platform as a two-sided market.⁹⁸ Construed as separate markets, the court separated the competitive effects analysis between each discrete market.⁹⁹

On appeal, the Second Circuit disagreed, describing Amex’s platform as a single “highly interdependent” two-sided market.¹⁰⁰ Thus, according to the Second Circuit, the

⁹⁴ *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018).

⁹⁵ *Id.*

⁹⁶ For more on this, see John M. Yun, *Overview of Network Effects & Platforms in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁹⁷ *United States v. Am. Express Co.*, 88 F. Supp. 3d 143, 151 (E.D.N.Y. 2015).

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ *United States v. Am. Express Co.*, 838 F.3d 179, 185, 197–98 (2d Cir. 2016).

effects analysis must occur for the two-sided platform as a whole, and not separately for each side.¹⁰¹

The question presented on writ of certiorari to the Supreme Court explicitly focused on effects analysis: “did the Government’s showing that Amex’s anti-steering provisions stifled price competition on the merchant side of the credit-card platform suffice to prove anticompetitive effects and thereby shift to Amex the burden of establishing any procompetitive benefits from the provisions?”¹⁰² The Court, however, took a step back in the analysis, and framed the case as a question about market definition.¹⁰³

The Court largely agreed with the Second Circuit’s view of the importance of the interrelated markets for effects analysis, but held that before effects can be considered, market power and market structure must be assessed¹⁰⁴—both of which can only occur once a market has been properly defined.¹⁰⁵ Indeed, it is impossible to properly judge the anticompetitive effect of conduct if the market upon which said effect is directed is improperly defined.

The full implications of the case are not yet clear. In particular, the Court limited its holding to two-sided “transaction” markets that “facilitate a single, simultaneous transaction between participants.”¹⁰⁶ Important to the Court in delineating these particular markets, is the instantaneous nature of the transactions:

Because they cannot make a sale unless both sides of the platform simultaneously agree to use their services, two-sided transaction platforms exhibit more pronounced indirect network

¹⁰¹ *Id.* at 197–98.

¹⁰² Petition for Writ of Certiorari at i, *Am. Express*, 138 S. Ct. 2274 (No. 16-1454).

¹⁰³ *Am. Express*, 138 S. Ct. at 2285.

¹⁰⁴ *Id.* at 2284.

¹⁰⁵ *Id.* at 2285.

¹⁰⁶ *Id.* at 2286.

effects and interconnected pricing and demand.¹⁰⁷

Thus, if the Court intended to limit its market-definition analysis to two-sided “transaction” markets, the degree of simultaneity or the relative intensity of network effects could have a bearing on the analysis. Indeed, even critics of the opinion have noted that the Supreme Court’s opinion is far more constrained than was the Second Circuit’s opinion, insofar as the opinion does not obviously apply to what could be an incredibly broad range of two-sided platforms “as diverse as malls, sports leagues, real estate agents, stock exchanges, and most tech platforms.”¹⁰⁸

4. Sabre/Farelogix Merger

One recent case to interpret *American Express*, the *Sabre/Farelogix* merger review, introduces a wrinkle into the two-sided market analysis. Sabre operates a “Global Distribution System” (“GDS”) for travel services as a two-sided platform, connecting airlines on one side, and travel agencies on the other.¹⁰⁹ Its ostensible competitor, Farelogix, on the other hand, sells a software package directly to airlines that allows them to disintermediate GDS services.¹¹⁰ Thus, Farelogix’s services do not operate as a two-sided platform.¹¹¹ Both Sabre and Farelogix viewed each other as competitors for a diverse set of businesses in the airline segment of the market—although their products were not perfect substitutes.¹¹²

The court ruled in favor of the defendants, holding that “DOJ has not identified a

¹⁰⁷ *Id.*

¹⁰⁸ Tim Wu, *The American Express Opinion, the Rule of Reason, and Tech Platforms*, 7 J. ANTITRUST ENF’T 117, 118 (2019).

¹⁰⁹ *United States v. Sabre Corp.*, No. CV 19-1548-LPS, 2020 WL 1855433 at *7 (D. Del. Apr. 7, 2020), *vacated as moot*, No. 20-1767, 2020 WL 4915824 (3d Cir. 2020).

¹¹⁰ *Id.* at *10.

¹¹¹ *Id.* at *11.

¹¹² *Id.* at *15.

proper relevant market.”¹¹³ According to the court, following *Ohio v. American Express*, “[a]s a matter of antitrust law, Sabre, a two-sided transaction platform, only competes with other two-sided platforms, but Farelogix only operates on the airline side of Sabre’s platform.”¹¹⁴

But it is not clear that *Ohio v. American Express* requires this result. The Supreme Court did indeed say “[o]nly other two-sided platforms can compete with a two-sided platform for transactions.”¹¹⁵ Yet, this was a conclusion that emerged as a result of analyzing the nature of simultaneous “transaction” platforms that were categorized by strong, positive network effects on both sides of the platform. As the Court noted:

Because they cannot make a sale unless both sides of the platform simultaneously agree to use their services, two-sided transaction platforms exhibit more pronounced indirect network effects and interconnected pricing and demand. Transaction platforms are thus better understood as “suppl[ying] only one product” — transactions.¹¹⁶

By characterizing the product as a “transaction” there is a ‘but for’ sense of inseparability between the agreement of both sides of the platform. A consumer *must* pay a particular merchant at a particular time and a particular credit card network facilitates that relationship. The transaction itself is ephemeral and cannot exist but for the facilitation of the platform.

Perhaps travel booking services are of the same nature, but it seems far less likely to constitute as strong a set of network effects, at least for the purposes of horizontal merger analysis. A consumer is essentially indifferent whether they use a GDS or directly book through an airline’s website (which is a service that Farelogix facilitated). Indeed, the court acknowledged that metasearch sites have begun mixing travel offerings from

¹¹³ *Id.* at *32.

¹¹⁴ *Id.*

¹¹⁵ *Am. Express*, 138 S. Ct. at 2287.

¹¹⁶ *Id.* at 2286.

both GDS-facilitated and direct offer sources.¹¹⁷ Thus, in a very real sense, the particular business model (two-sided or one-sided) is essentially irrelevant for determining an antitrust-relevant market in this case.

None of this is to say that *Ohio v. American Express*'s command that two-sided markets matter during market definition analysis is null. Indeed, even if the *United States v. Sabre Corp.* court erred in how it construed *Ohio v. American Express*, it did so in an illuminating manner.¹¹⁸ The focus on whether Sabre intermediated between two sides of a transaction illuminates that in some contexts, the interrelation could be *very* meaningful, notably in the context of vertical mergers and vertical conduct. How a firm internally arranges its business processes can have a tremendous impact on the competitive effects of a particular acquisition or course of conduct. Indeed, it may be the case that the logic of *Ohio v. American Express* needs to be extended more broadly in vertical analysis, even if it is of relatively attenuated utility when looking at horizontal mergers.

5. Apple v. Pepper

*Apple v. Pepper*¹¹⁹ was the first opportunity for the Supreme Court to consider the bounds of existing antitrust law in the context of two-sided markets since its *Ohio v. Amex* decision. Unfortunately, it avoided discussing two-sided markets, and instead opted to fit an analysis of Apple's platform into an ill-fitting existing doctrine.

Apple v. Pepper arose from a complaint by four iPhone owners in 2011 who alleged that Apple's control of its App Store, combined with its 30 percent required revenue share

¹¹⁷ *Sabre Corp.*, at *5.

¹¹⁸ Notably, the Third Circuit recently set aside the district court's opinion as moot, since the parties abandoned the deal. Mike Leonard, *Sabre-Farelogix Ruling Made Moot by Scrapped Deal*, BLOOMBERG L. (July 20, 2020 11:44 AM), <https://news.bloomberglaw.com/mergers-and-antitrust/sabre-farelogix-ruling-made-moot-by-scrapped-deal-3d-cir-says>. But, as it set aside the ruling, the Third Circuit took the opportunity to note that its decision "should not be construed as detracting from the persuasive force of the district court's decision, should courts and litigants find its reasoning persuasive." *Id.*

¹¹⁹ 139 S. Ct. 1514 (2019).

and its prohibition on allowing third-party app installations amounted to antitrust violations.¹²⁰

Apple moved to dismiss for failure to state a claim, arguing that the customers had purchased apps from the app developers directly, not Apple, and therefore lacked standing to sue Apple per *Illinois Brick's* indirect purchaser doctrine.¹²¹

Apple's App Store is arguably best defined as a two-sided market—potentially even a two-sided “transaction” market. On one side, developers provide a supply of apps to the App Store platform, and on the other, consumers browse for both free and paid apps to install on their devices. Although the apps do not spring into existence at the moment a user decides to engage with the platform, the network effects on both sides are positive and very strong: users value the App Store by virtue of a large number of developers providing apps, and developers value the App Store by virtue of having a large pool of consumers ready to purchase apps.

Nonetheless, the Supreme Court passed on the opportunity to consider standing doctrine in the context of two-sided platforms. Neither the decision nor the dissent mentions *Ohio v. American Express*, or even the two-sided market context in which the transactions at issue in both cases take place (save for one passing reference to Apple's “platform” in the dissent).¹²² Instead, the Court characterized the app-user plaintiffs as direct purchasers in a traditional retail context, stating that: “[i]t is undisputed that the iPhone owners bought the apps directly from Apple. Therefore, under *Illinois Brick*, the iPhone owners were direct purchasers who may sue Apple for alleged

¹²⁰ *Id.* at 1519.

¹²¹ *Id.* (“Apple moved to dismiss the complaint, arguing that the iPhone owners were not direct purchasers from Apple and therefore may not sue”).

¹²² *Id.* at 1527–28 (Gorsuch, J., dissenting) (“The lawsuit alleges that Apple is a monopolist retailer and that the 30% commission it charges developers for the right to sell through its platform represents an anticompetitive price”).

monopolization.”¹²³

If we ignore the literature of two-sided markets as well as the Court’s *Ohio v. American Express* precedent, application of the indirect purchase doctrine is facially accurate. Yet there is a sense in which the Court missed an opportunity to more properly wrestle with standing doctrine in two-sided market cases. As noted above, in *Ohio v. American Express*, the Court required that the first task before performing an effects analysis is to properly characterize the relevant market. Logically, the same task is required for standing in order to determine a litigant’s relationship to the proper market under *Illinois Brick*. The Court never discussed the relevant product market; instead, it simply asserted that “we have consistently stated that ‘the immediate buyers from the alleged antitrust violators’ may maintain a suit against the antitrust violators.”¹²⁴ But of what product or service are the plaintiffs the “immediate buyers” from Apple?

Instead, the Court cited the judicial efficiency rationales for *Illinois Brick*, and found the same justifications to exist for allowing app purchasers to sue Apple directly.¹²⁵ Yet, the Court failed to analyze how the nature of two-sided markets might be implicated when looking at the same judicial efficiency rationales.

Indeed, it may be that the standing issue would have come out identically: properly construed as a two-sided market, it could easily be imagined that purchasers on one-side of the market would have standing to sue the platform itself.¹²⁶ Until a future opportunity arises, however, lower courts will need to develop a standing doctrine

¹²³ *Id.* at 1520.

¹²⁴ *Id.* (quoting *Kansas v. UtiliCorp United Inc.*, 497 U. S. 199, 207 (1990)).

¹²⁵ *Id.* at 1524.

¹²⁶ See generally Geoffrey A. Manne & Kristian Stout, *The Evolution of Antitrust Doctrine After Ohio v. Amex and the Apple v. Pepper Decision That Should Have Been*, 98 NEB. L. REV. 425 (2019) (“Under the proper conception of the market, it is difficult to maintain that either side does not have standing to sue the platform for alleged anticompetitive conduct relating to the terms of its overall pricing structure, whether the specific terms at issue apply directly to that side or not.”).

tailored to two-sided markets without guidance from the Supreme Court.

6. The AT&T /Time Warner Merger

In the AT&T/Time Warner merger, DOJ attempted to employ a leveraging theory.¹²⁷ DOJ was unsuccessful at the trial level, which allowed the merger to proceed,¹²⁸ and the D.C. Circuit affirmed.¹²⁹ In truth, the case was a fairly conventional application of vertical merger principles, and the D.C. Circuit readily applied the identical rule of reason framework as that applied by the district court.¹³⁰

The case was, as is typical in vertical merger cases, about weighing the procompetitive efficiencies against the potential inefficiencies or anticompetitive effects likely to arise; indeed, the government even conceded from the beginning that the merger was likely to produce procompetitive efficiencies.¹³¹ Thus, the government framed its case as a rebuttal against the procompetitive efficiencies, relying on a theory of bargaining leverage:

The government's increased leverage theory is that "by combining Time Warner's programming and DirecTV's distribution, the merger would give Time Warner increased bargaining leverage in negotiations with rival distributors, leading to higher, supracompetitive prices for millions of consumers."¹³²

The case, then, turned on whether the anticipated price increases to consumers because of potentially increased bargaining leverage outweighed the procompetitive benefits the government conceded would arise from integration.¹³³ DOJ lost, however, in large part because it failed to adduce sufficient evidence even to support its theory of

¹²⁷ *United States v. AT&T, Inc.*, 310 F. Supp. 3d 161, 198 (D.D.C. 2018), *aff'd*, 916 F.3d 1029 (D.C. Cir. 2019).

¹²⁸ *Id.* at 200–242, 253.

¹²⁹ *United States v. AT&T, Inc.*, 916 F.3d 1029, 1047 (D.C. Cir. 2019).

¹³⁰ *Id.* at 1032.

¹³¹ *See AT&T*, 310 F. Supp. 3d at 194 ("The Government concedes that the challenged merger, like most vertical mergers, will result in significant benefits to customers of the merged company").

¹³² *AT&T*, 916 F.3d at 1035.

¹³³ *Id.* at 1047–48.

bargaining leverage that was more compelling than empirical evidence presented by AT&T demonstrating that historical experience with pricing data pointed in the opposite direction.¹³⁴

The larger lesson from the AT&T/Time Warner case is that, consistent with the recently revised vertical merger guidelines, “vertical mergers often benefit consumers . . . which tends to lessen the risks of competitive harm.”¹³⁵ And though vertical mergers are not “invariably innocuous”, vertical merger analysis tends to be more complicated and fact-specific, leading to a lesser presumption against vertical integration than is found more commonly in the horizontal context.¹³⁶

7. FTC v. Qualcomm

In *FTC v. Qualcomm*, the Federal Trade Commission alleged a variety of speculative theories—notably ones that would have treated Qualcomm as something like an “essential facility,” or that attempted to construe mere contractual violations as antitrust-relevant harms.¹³⁷ In the waning days of the Obama Administration, the FTC filed an antitrust suit against Qualcomm, most notably targeting as anticompetitive Qualcomm’s so-called “No License, No Chips” policy.¹³⁸ The FTC alleged that, under this policy, Qualcomm would refuse to sell its chips to manufacturers that did not also accept a license covering Qualcomm’s intellectual property.¹³⁹ The thrust of the argument, as captured by amici on the case on appeal, was that the “No License, No Chips” policy made it “more expensive for OEMs to purchase competitors’ chipsets, and thereby

¹³⁴ *Id.* at 1037.

¹³⁵ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, VERTICAL MERGER GUIDELINES 2 (2020).

¹³⁶ *Id.*

¹³⁷ 411 F. Supp. 3d 658 (N.D. Cal. 2019).

¹³⁸ See Complaint at 15, *FTC v. Qualcomm Inc.*, 411 F. Supp. 3d 658 (N.D. Cal. 2019) (No. 17-CV-00220-LHK), ECF No. 1.

¹³⁹ *Id.* at 14.

disadvantage[d] rivals and create[d] artificial barriers to entry and competition in the chipset markets.”¹⁴⁰ The district court agreed, ruling that Qualcomm’s business practices allowed it to charge “unreasonably high royalty rates” for its technology.¹⁴¹ The FTC’s complaint and the district court’s decision were novel, insofar as they would have shifted antitrust liability away from the actual conduct of a defendant to the appropriateness of a particular business model.

On review, the Ninth Circuit overturned the district court, refuting a variety of the pillars that had supported the opinion below. The court entirely dismissed the FTC’s theory that Qualcomm was under an antitrust “duty to deal” with rival chip manufacturers by granting licenses.¹⁴² Although it found none of the necessary *Aspen Skiing* elements present that are necessary to make out such a claim,¹⁴³ one notable highlight is that the FTC had completely failed to substantiate “profit sacrifice” by Qualcomm based upon the firm’s particular selection of licensing models that it believed would yield the greatest long and short term profits.¹⁴⁴

Some aspects of the district court’s opinion bear scrutiny, either because they were not dealt with in the Ninth Circuit’s analysis or were rebutted in important ways. First, the district court, misinterpreting *Microsoft*, held that, in government actions seeking injunctions, courts may “infer ‘causation’ from the fact that a defendant has engaged in anticompetitive conduct that ‘reasonably appears capable of making a significant contribution to . . . maintaining monopoly power.’”¹⁴⁵ The actual language from *Microsoft*

¹⁴⁰ Brief of *Amici Curiae* Law and Economics Scholars Supporting the Plaintiff at 10, *FTC v. Qualcomm*, 969 F.3d 974 (9th Cir. 2020) (No. 19-16122).

¹⁴¹ *Qualcomm*, 411 F. Supp. 3d at 773.

¹⁴² *Qualcomm*, 969 F.3d at 995.

¹⁴³ *Id.*

¹⁴⁴ *Id.* at 994 n.15.

¹⁴⁵ *Qualcomm*, 411 F. Supp. 3d at 804–05. The Ninth Circuit acknowledged the district court’s assertion here without expanding. See *Qualcomm*, 969 F.3d at 992.

indicates that *causation* of an anticompetitive harm can be inferred, however, not that anticompetitive *effect* could be inferred.¹⁴⁶

Under a standard error-cost approach, anticompetitive effect must be proved through an economic assessment.¹⁴⁷ Other than in exceptional circumstances, the error-cost framework requires courts to refrain from making inferences of anticompetitive effect.

Second, the district court also allowed a speculative “evasion of a competitive constraint” theory to prevail in the case that would have had the effect of imposing antitrust liability on firms for a whole range of activity not currently thought of as antitrust-relevant. Blurring the lines between “Fair, Reasonable, and Nondiscriminatory” (“FRAND”) contractual obligations and antitrust law, the district court found that Qualcomm violated antitrust law by breaching FRAND commitments. The problem, of course, is that antitrust law is only focused on *antitrust* duties to deal, not *any* duty to deal. The court believed that Qualcomm had purposely evaded its FRAND obligations and avoided patent exhaustion in order to defeat price competition in the market. This conclusion is completely unsupported by prior Supreme Court and D.C. Circuit precedent.¹⁴⁸

The Ninth Circuit agreed. It examined the “evasion” theory, and found that the

¹⁴⁶ *United States v. Microsoft Corp.*, 253 F.3d 34, 58 (D.C. Cir. 2001) (“the plaintiff . . . must demonstrate that the monopolist’s conduct indeed has the requisite anticompetitive effect”); *cf.* *Rambus Inc. v. FTC*, 522 F.3d 456 (D.C. Cir. 2008) (holding, in a standard-setting case, that the FTC had failed to prove that Rambus’s allegedly deceptive nondisclosure of its patent portfolio yielded an anticompetitive effect).

¹⁴⁷ See generally Thom Lambert & Alden F. Abbott, *Recognizing the Limits of Antitrust: The Roberts Court Versus the Enforcement Agencies*, 11 J. COMPETITION L. & ECON. 791 (2015) (comparing the Supreme Court’s use of error-cost approach in the modern era with that of the American antitrust agencies). The Court has endorsed the error-cost approach. See *Pac. Bell Tel. Co. v. Linkline Commc’ns, Inc.*, 555 U.S. 438 (2009); *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398 (2004); *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993). For more on the error cost framework, and error cost analysis as it relates to the digital economy, see Geoff Manne, *Error Costs in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

¹⁴⁸ See *NYNEX Corp. v. Discon, Inc.* 525 U.S. 128 (1998); *Rambus*, 522 F.3d 456.

only precedent the FTC relied upon to support that theory was extremely narrow and depended upon elements that were not present in the case.¹⁴⁹

In the context of understanding antitrust in digital markets, it is important to be sensitive to creative theories of “evasion” offered by enforcement agencies. As Joshua D. Wright has previously noted:

[T]he objection to the “evasion” of any constraint approach is . . . that it opens the door to enforcement actions applied to business conduct that is not likely to harm competition and might be welfare increasing.¹⁵⁰

Thus, it is inappropriate for a court to infer harm from mere harm to a competitor (by e.g. violating a FRAND commitment), unless that conduct clearly points to an anticompetitive effect. Ultimately, “evasion of constraint” theories boil down to a belief that defendants simply injure their rivals, with no specific antitrust harm alleged. In this way, enforcement agencies can continue to try theories much like that in *OAG v. FTC*¹⁵¹ where the FTC attempted to expand the Sherman Act to encompass business conduct that was merely “arbitrary.”

In other words, under the FTC’s view of *FTC v. Qualcomm* and *OAG v. FTC*, a firm with an immoral or otherwise “bad” business model can be brought to heel with antitrust law.

C. Approved Mergers

The historical record on approved transactions relevant to digital markets, most of which were vertical, may or may not prove an accurate guide for the future conduct of the agencies. Increasingly, there is interest to review past mergers, which, if followed, suggests that future mergers would likewise be subject to more skepticism.¹⁵² Thus, it is

¹⁴⁹ See *Qualcomm*, 969 F.3d at 996–97.

¹⁵⁰ Joshua D. Wright, *Ovation Reconsidered: A Response to Commissioner Leary*, TRUTH ON THE MKT. (July 23, 2009), <https://truthonthemarket.com/2009/07/23/ovation-reconsidered-a-response-to-commissioner-leary/>

¹⁵¹ 630 F.2d 920 (2d Cir. 1980); see *supra* notes 18–26 and accompanying text.

¹⁵² See, e.g., Lauren Feiner, *Facebook Drops On Report FTC Is Looking at Instagram, WhatsApp Acquisitions in*

useful to consider the mergers that have been approved and, where available, the statements of the reviewing agencies that illuminate the reasons for approval (and conditions, where applicable).

The following mergers were cleared, essentially without public comment:

- In 2016, Microsoft completed its acquisition of LinkedIn.¹⁵³ The FTC opted not to investigate the Microsoft/LinkedIn merger, while the EC cleared the merger with conditions.¹⁵⁴
- The FTC cleared Microsoft's purchase of Skype in 2011 with an early termination.¹⁵⁵
- The FTC voted 5-0 to close its investigation into Facebook's acquisition of Instagram in 2012.¹⁵⁶
- Facebook's 2014 acquisition of WhatsApp cleared FTC review as well, although in that case the FTC did issue a letter warning the two companies that they would be required to honor privacy commitments to users after completion of the merger.¹⁵⁷

Antitrust Probe, CNBC (Aug. 1, 2019 4:00 PM), <https://www.cnbc.com/2019/08/01/ftc-reportedly-scrutinizing-facebooks-purchase-of-instagram-whatsapp.html>; Mark Bergen & Ben Brody, *Google's Waze Deal Is a Likely Target in FTC Antitrust Sweep*, BLOOMBERG (Feb. 14, 2020 7:16 AM), <https://www.bloomberg.com/news/articles/2020-02-14/google-s-waze-deal-is-a-likely-target-in-new-ftc-antitrust-sweep>.

¹⁵³ Press Release, Microsoft Corp., Microsoft to Acquire LinkedIn (June 13, 2016), <https://news.microsoft.com/2016/06/13/microsoft-to-acquire-linkedin/>.

¹⁵⁴ April Glaser, *Marc Benioff Says Companies Buy Each Other for the Data, and the Government Isn't Doing Anything About It*, VOX (Nov. 15, 2016 12:06 PM), <https://www.vox.com/2016/11/15/13631938/benioff-salesforce-data-government-federal-trade-commission-ftc-linkedin-microsoft>; Press Release, Eur. Comm'n, Mergers: Comm'n Approves Acquisition of LinkedIn by Microsoft, Subject to Conditions (Dec. 6, 2016), https://europa.eu/rapid/press-release_IP-16-4284_en.htm.

¹⁵⁵ Fed. Trade Comm'n, Early Termination Notice No. 20110881: Microsoft Corporation; Skype Global S.a.r.l. (June 16, 2011) <https://www.ftc.gov/enforcement/premerger-notification-program/early-termination-notices/20110881>.

¹⁵⁶ Press Release, Fed. Trade Comm'n, FTC Closes Its Investigation Into Facebook's Proposed Acquisition of Instagram Photo Sharing Program (Aug. 22, 2012), <https://www.ftc.gov/news-events/press-releases/2012/08/ftc-closes-its-investigation-facebooks-proposed-acquisition>.

¹⁵⁷ See Alexei Oreskovic, *Facebook Says WhatsApp Deal Cleared by FTC*, REUTERS (Apr. 10, 2014 12:02 PM), <https://www.reuters.com/article/us-facebook-whatsapp/facebook-says-whatsapp-deal-cleared-by-ftc>

- Google’s purchase of Waze went unchallenged by the FTC in 2013.¹⁵⁸

Certain mergers, even where approved, either had a public statement with conditions applied, or involved an important dissent.

1. Google/DoubleClick

The 2007 Google/DoubleClick merger was cleared by the FTC in a 4-1 vote.¹⁵⁹ The majority based its closing of the investigation on three theories of potential competitive harm, which it believed Google’s conduct did not meet.

First, the Commission examined whether the merger “threatened to eliminate direct and substantial competition between Google and DoubleClick.”¹⁶⁰ The Commission refrained from viewing Google and DoubleClick as operating in an “all advertising market,” and also from viewing their separate products as substitutes.¹⁶¹ Google and DoubleClick therefore operated in distinct horizontal markets, and thus had no direct competitive overlap.

Second, the Commission examined the potential competition between Google’s in-house ad serving product that was still in development with that offered by DoubleClick.¹⁶² Since the market was already both highly competitive and highly concentrated, Google’s entry was unlikely to be a significant competitive factor for the

idUSBREA391VA20140410; Letter from Jessica L. Rich, Dir., Bureau of Consumer Protection, Fed. Trade Comm’n, to Erin Egan, Chief Priv. Officer, Facebook, and Anne Hoge, Gen. Couns., WhatsApp Inc. (Apr. 10, 2014), <https://www.ftc.gov/public-statements/2014/04/letter-jessica-l-rich-director-federal-trade-commission-bureau-consumer>.

¹⁵⁸ *FTC Closes Probe into Google’s \$1B Waze Buy*, LAW360 (Nov. 6, 2013), <https://www.law360.com/articles/486509/ftc-closes-probe-into-google-s-1b-waze-buy>.

¹⁵⁹ See Fed. Trade Comm’n, Statement of Federal Trade Commission Concerning Google/DoubleClick, FTC File No. 071-0170 (Dec. 20, 2007), https://www.ftc.gov/system/files/documents/public_statements/418081/071220googledc-commstmt.pdf.

¹⁶⁰ *Id.* at 7.

¹⁶¹ *Id.*

¹⁶² *Id.* at 8.

existing market.¹⁶³ Moreover, DoubleClick did not possess market power, thus Google would be likewise unable acquire market power through the acquisition.¹⁶⁴

Finally, the Commission considered a variety of vertical theories of leveraging, including tying and bundling, which it ultimately found unsupported by the record.¹⁶⁵ Primarily, the Commission believed these theories failed because, despite having a leading market share, DoubleClick's lack of market power would make it, both pre and post-merger, unable to effectuate any of the possible leveraging strategies.¹⁶⁶

In dissent, former Commissioner Pamela Jones Harbour offered a different vision for how Section 7 of the Clayton Act should have been applied to the fast-developing market for online advertising.¹⁶⁷ In particular, she noted areas of competitive overlap where the merger would threaten to reduce competition.¹⁶⁸ First, she disagreed with the majority that Google's in-house ad-serving solution was not a serious competitor that would be capable of constraining competition.¹⁶⁹ Commissioner Harbour noted that Google's existing beta product development would have created its own efficiencies, a fact that tended to negate the presence of merger-specific synergies in her opinion.¹⁷⁰

Commissioner Harbour also believed that Google and DoubleClick were both direct competitors in the market for "remnant" ad space—ad space on web pages that had not already been sold to major publishers and was therefore considered less desirable

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ *Id.* at 9.

¹⁶⁶ *Id.* at 10.

¹⁶⁷ See Dissenting Statement of Commissioner Pamela Jones Harbour, In the Matter of Google/DoubleClick, FTC File No. 071-0170 (Dec. 20, 2007), https://www.ftc.gov/sites/default/files/documents/public_statements/statement-matter-google/doubleclick/071220harbour_0.pdf.

¹⁶⁸ *Id.* at 1.

¹⁶⁹ *Id.*

¹⁷⁰ *Id.* at 2.

to advertisers.¹⁷¹ The majority characterized this market as highly fragmented, and that no evidence was presented that DoubleClick was poised to be a major player in this area.¹⁷² Commissioner Harbour, however, would have been content to rely on the puffery in DoubleClick's marketing materials describing its full-service products in order to support blocking the merger on horizontal grounds.¹⁷³

More broadly, outside of the narrow competitive overlaps she identified, Commission Harbour believed that the "combination of Google and DoubleClick likely will affect the evolution of the entire online advertising market—especially in light of existing network effects, and the tremendous additional network effects the transaction will generate."¹⁷⁴ She characterized the review as a case of first impression, owing to unique overlap of consumer protection and competition issues present in the merger of the firms' disparate data sets.¹⁷⁵

Moreover, she felt that the combination would allow the combined firm to better leverage network effects in order to "accelerate a convergence between search and display" advertising markets.¹⁷⁶ The end result, she feared, was the ability to create much more targeted advertising, though she did not spell out exactly why this would constitute a harm to consumers.¹⁷⁷

It was similarly unclear how another harm Commissioner Harbour feared actually constituted a harm:

Post-merger, the combined Google/DoubleClick will become a "super-intermediator" with access to unparalleled data sources. In this role, Google/DoubleClick may be able to match up buyers and sellers in ways that more fully maximize the value of all advertising space. As the

¹⁷¹ *Id.* at 2.

¹⁷² *Id.*

¹⁷³ *Id.*

¹⁷⁴ *Id.* at 4.

¹⁷⁵ *Id.*

¹⁷⁶ *Id.* at 7.

¹⁷⁷ *Id.*

merged firm’s dataset grows, data-driven algorithms may perform at least as well as direct sales—if not better—in choosing which advertisements to display to generate the greatest return on investment. If this were to occur, the value of intermediated “remnant” space might approach (or surpass) the value of directly-sold “premium” advertisements, in terms of the ability to place the right message in front of the right Internet users at the right moment.¹⁷⁸

Thus, the potential “harm” was that the combined firm would be able to better match advertisers with available inventory so as to better provide maximum value. Indeed, even in dissent, Commissioner Harbour had to “acknowledge that behavioral targeting may create economic efficiencies that would—in the short run—be attractive to the parties’ advertiser and publishing customers.”¹⁷⁹ Nonetheless, even with the actual competition concerns outweighed by procompetitive justifications, Commissioner Harbour maintained that the large size of the merged firm’s dataset would serve as an entry barrier to competing firms.¹⁸⁰

She was likewise concerned that data and privacy issues would be relegated to consumer protection issues going forward, and would not be considered as first-class competition issues.¹⁸¹ Having said that, she acknowledged—and this is perhaps why privacy as a first-order competition issue is so hard to evaluate—that “[t]he truth is, we really do not know what Google/DoubleClick can or will do with its trove of information about consumers’ Internet habits.”¹⁸²

2. Google/AdMob

In 2010, the FTC voted 5-0 to close its investigation of Google’s acquisition of mobile advertising company AdMob “after thoroughly reviewing the deal and concluding that it is unlikely to harm competition in the emerging market for mobile

¹⁷⁸ *Id.* at 8.

¹⁷⁹ *Id.* at 8.

¹⁸⁰ *Id.* For more on big data as a barrier to entry, see John M. Yun, *The Role of Big Data in Antitrust*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

¹⁸¹ *Id.* at 9.

¹⁸² *Id.* at 10.

advertising networks.”¹⁸³

Senator Herb Kohl, Chairman of the Subcommittee on Antitrust, Competition and Consumer Rights, had sent a letter to the FTC urging it to pay “close attention” to the deal, in part because it would allow Google to expand its dominance in the desktop search and search marketing to include mobile display advertising.¹⁸⁴ Of course, that objection on its own either undermined concerns about the merger, or was self-refuting. If the relevant market was mobile display advertising —at the time a relatively small share of total advertising— then

it represents a small fraction of a larger market and this transaction is competitively insignificant. Moreover, acknowledging that mobile advertising competes with online search advertising does more to expand the size of the relevant market beyond the narrow boundaries it is usually claimed to occupy than it does to increase Google’s share of the combined market.¹⁸⁵

In its closing letter, however, the FTC focused on more immediate changes to the mobile advertising market, pointing out that, in addition to a number of smaller competitors, Apple had recently entered the mobile ad network market, creating both a major competitor in the market, and also uncertainty as to how successfully AdMob would be able to compete with Apple’s native solution.¹⁸⁶

3. XM/Sirius

The XM/Sirius merger offered a relatively robust view into DOJ’s review process, even though it opted not to challenge the merger. DOJ issued a closing statement in

¹⁸³ Fed. Trade Comm’n, Statement of the Commission Concerning Google/AdMob, FTC File No. 101-0031 (May 21, 2010), https://www.ftc.gov/sites/default/files/documents/closing_letters/google-inc./admob-inc/100521google-admobstmt.pdf.

¹⁸⁴ Press Release, Sen. Herb Kohl, (D-WI), Kohl Urges Close Scrutiny of the Proposed Google AdMob Merger (Apr. 6, 2010), https://web.archive.org/web/20120316194515/http://www.kohl.senate.gov/newsroom/pressrelease.cfm?customel_dataPageID_1464=3555.

¹⁸⁵ Geoffrey A. Manne, *Assessing the Claims that the Google-AdMob Merger Will “Leverage Google’s Dominance” and Also Kill Kittens*, TRUTH ON THE MKT. (Apr. 7, 2010), <https://truthonthemarket.com/?s=admob&orderby=relevance&order=DESC>.

¹⁸⁶ See *id.*

March 2008, reporting that it would not challenge the merger because

the evidence did not show that the merger would enable the parties to profitably increase prices to satellite radio customers for several reasons, including: a lack of competition between the parties in important segments even without the merger; the competitive alternative services available to consumers; technological change that is expected to make those alternatives increasingly attractive over time; and efficiencies likely to flow from the transaction that could benefit consumers.¹⁸⁷

As Thomas Hazlett has noted, the market definition question in this merger was the primary focus.¹⁸⁸ In this regard, the question was whether the relevant market should be defined merely as “satellite radio broadcasting” or should also include terrestrial sources, like traditional AM and FM radio.¹⁸⁹

DOJ opted to include terrestrial radio in the definition, and therefore believed that the combined firm would not be able to profitably raise prices in the face of the remaining competition.¹⁹⁰ DOJ also believed that, even were price increases possible, the combined firm was likely to realize substantial operational efficiency as a result of the deal.¹⁹¹ Indeed, even a year after the deal closed the firm was close to bankruptcy, and it wasn’t until two years later that the firm realized its first quarterly profit—suggesting that the efficiencies it realized were sorely needed.¹⁹²

4. Comcast/NBC

In 2010, Comcast proposed to enter into a joint venture with General Electric, in

¹⁸⁷ Press Release, U.S. Dep’t of Justice, Statement of the Department of Justice Antitrust Division on Its Decision to Close Its Investigation of XM Satellite Radio Holdings Inc.’s Merger with Sirius Satellite Radio Inc. (Mar. 24, 2008), https://www.justice.gov/archive/opa/pr/2008/March/08_at_226.html [hereinafter DOJ Sirius/XM Closing Statement].

¹⁸⁸ See Thomas W. Hazlett, *Some Dynamics of High-Tech Merger Analysis in General and with Respect to XM–Sirius*, 4 J. COMPETITION L. & ECON. 753, 756 (Aug. 2008).

¹⁸⁹ DOJ Sirius/XM Closing Statement, *supra* note 187.

¹⁹⁰ See *id.*

¹⁹¹ *Id.*

¹⁹² Franklin Paul, *Sirius Posts Profit, Sees Big Subscriber Growth*, REUTERS (Feb. 25, 2010, 8:01 AM), <https://www.reuters.com/article/us-siriusxm/sirius-posts-profit-sees-big-subscriber-growth-idUKTRE61O2Z920100225>.

which Comcast would become a 51% owner of NBC Universal and General Electric would own 49%.¹⁹³ The merger was largely a vertical integration of Comcast's existing cable video business with NBCU's programming library (in addition to certain other ancillary properties, such as Universal Studios).¹⁹⁴ Some horizontal issues did exist, insofar as Comcast owned some cable network assets—but Comcast's share of the relevant market was fairly small.¹⁹⁵

In addition to DOJ's review (along with five states) of the antitrust issues implicated by the merger,¹⁹⁶ the FCC also reviewed the deal because it involved the transfer of spectrum licenses.¹⁹⁷ Both DOJ and the FCC imposed conditions on the merger.

Most notably, DOJ's conditions were aimed at guaranteeing that the merged firm would be unable to obtain bargaining leverage by withholding content from rival video programmers.¹⁹⁸ Comcast was forced to cede managerial control over Hulu,¹⁹⁹ and it was also forbidden from using its position as a cable provider to punish video programmers that opted to acquire video programming from non-NBCU sources.²⁰⁰

¹⁹³ *Panel on the Comcast and NBCUniversal Merger Before the H. Comm. on the Judiciary*, 111th Cong. 1 (2010) (prepared testimony of Thomas W. Hazlett, Professor of Law, George Mason University), <https://web.archive.org/web/20120928182644/http://judiciary.house.gov/hearings/pdf/Hazlett100225.pdf>.

¹⁹⁴ *Id.*

¹⁹⁵ Applications and Public Interest Statement at 2, Fed. Commc'ns Comm'n, In the Matter of General Electric Co. and Comcast Corp., <https://ecfsapi.fcc.gov/file/7020394237.pdf> ("Although Comcast owns and produces some cable programming channels and online content, Comcast owns relatively few national cable networks, none of which is among

the 30 most highly rated, and, even including its local and regional networks, Comcast accounts for a tiny percentage of the content industry.").

¹⁹⁶ *Cf.* Proposed Final Judgment at 1, *United States v. Comcast Corp.*, No. 1:11-CV-00106 (D.D.C. Sept. 1, 2011).

¹⁹⁷ *Cf.* Memorandum Opinion and Order at 1, Fed. Commc'ns Comm'n, In the Matter of Applications of Comcast Corp., General Electric Company and NBCUniversal, Inc. MB Docket No. 10-56 (Jan. 20, 2011), <https://docs.fcc.gov/public/attachments/FCC-11-4A1.pdf>.

¹⁹⁸ *See* Proposed Final Judgement, *supra* note 196, at 8–13.

¹⁹⁹ *Id.* at 14–15.

²⁰⁰ *Id.* at 18.

The FCC's ability to condition the merger arises from its authority to review the transfer of spectrum licenses in order to ensure that the transactions are in the public interest.²⁰¹ One of the more interesting features of this transaction was exactly how far the FCC was willing to go in its imposition of conditions ostensibly in the public interest.²⁰² For instance, despite the FCC's mandate centering on the use of public spectrum, the Commission imposed requirements on how the merged firm would negotiate with other MVPDs, encouraged the development of *online* sources of competition, and adopted "voluntary" commitments that shaped how Internet access service would be provisioned across Comcast's network.²⁰³

In their concurrence, Commissioners McDowell and Atwell Baker noted that

The Commission's approach to merger reviews has become excessively coercive and lengthy...In this instance, our review exceeded its limited statutory bounds. Many of the conditions in the Memorandum Opinion and Order (Order) and commitments outlined in separate letter agreements were agreed to by the parties. The resulting Order is a wide-ranging regulatory exercise notable for its "voluntary" conditions that are not merger specific. The same is true for the separate "voluntary" commitments outlined in Comcast's letter of agreement dated January 17, 2011. While many of these commitments may serve as laudable examples of good corporate citizenship, most are not even arguably related to the underlying transaction. In short, the Order goes too far.²⁰⁴

CONCLUSION

Many questions remain open for antitrust enforcement in digital markets. This chapter surveyed the course of the law in this area, and points to many of them, but inevitably more will emerge. Nonetheless, it is worth taking note of some of the

²⁰¹ 47 U.S.C. § 310(d) ("No construction permit or station license, or any rights thereunder, shall be transferred, assigned, or disposed of in any manner, . . . to any person except upon application to the Commission and upon finding by the Commission that the public interest, convenience, and necessity will be served thereby.").

²⁰² See generally Joint Concurring Statement of Commissioners Robert M. McDowell & Meredith Attwell Baker, Fed. Comm'n's Comm'n, In the Matter of Applications of Comcast Corporation, General Electric Company, and NBC Universal, Inc. For Consent to Assign Licenses and Transfer Control of Licensees, MB Docket No. 10-56 (Jan. 20, 2011), <https://docs.fcc.gov/public/attachments/DOC-304134A4.pdf>.

²⁰³ See *id.*; Memorandum Opinion and Order, *supra* note 197.

²⁰⁴ Joint Statement, *supra* note 202.

flashpoints for conflict in the future enforcement of antitrust in digital markets discussed above. Two main issues are going to be at the forefront of many of the cases brought in the foreseeable future.

First, enforcers continue to seek narrow market definitions that help them more easily allege monopolization and related vertical harms. And with the tentative acceptance of two-sided markets as important to market definition by the Supreme Court, the struggle over market definition will only become more complicated.

Second, because of network effects, fast turnover, and fluid boundaries between product markets among many firms, enforcers will be tempted to try novel theories, or novel interpretations of existing theories in order to develop otherwise difficult to substantiate cases. The FTC's approach in *Qualcomm* was emblematic of this, insofar as it attempted to prove that Qualcomm was anticompetitively evading constraints simply by deploying its intellectual property in a manner with which the FTC disagreed. The tying claim in *Microsoft* and the analogous theories brought against Google by the European Commission likewise attempt to shift the obligation onto firms to justify their product design and other innovation decisions.

European Competition Enforcement and the Digital Economy: The Birthplace of Precautionary Antitrust

Aurelien Portuese

INTRODUCTION

European competition law enforcement in the digital economy reveals a strong, yet healthy, tension. On one hand, administrative agencies, both at the European Union (E.U.) and national levels, began enforcing competition laws in digital markets with an increasingly precautionary approach. On the other hand, courts reacted by significantly restraining these interventions, reinstating the basic legal principles and economic rationales widely accepted for enforcing competition laws in any sector of the economy. In this chapter, I explore this tension by outlining the precautionary approach adopted by European administrative practice whilst referring to the safeguards and limits enforced by the judiciary.

European administrative agencies first adopted a “precautionary approach” in their enforcement decisions because it aligned with the well-known “precautionary principle.” The precautionary principle is a general principle of law,¹ used as a decision-making tool to address scientific uncertainties.² Referred to as “*a magic spell*” principle³ encouraging “*obscurantism*,”⁴ the precautionary principle originates in a fear of a future

¹ Aurelien Portuese & Julien Pillot, *The Case for an Innovation Principle: A Comparative Law & Economics Analysis*, 15 MANCHESTER J. INT’L ECON. L. 214, 237 (2018).

² David Resnik, *Is the Precautionary Principle Unscientific?*, 34 STUD. HIST. & PHIL. SCI. C STUD. HIST. PHIL. BIOLOGICAL & BIOMEDICAL SCI. 329, 330 (2003).

³ Philippe Kourilsky & Geneviève Viney, *Le Principe de Précaution. Rapport au Premier Ministre*, ODILE JACOB, DOCUMENTATION FRANÇAISE (1999), <https://www.vie-publique.fr/sites/default/files/rapport/pdf/004000402.pdf>; see generally Per Sandin, *Dimensions of the Precautionary Principle*, 5 HUM. ECOLOGICAL RISK ASSESSMENT : INT’L J. 889, 907 (1999).

⁴ CLAUDE BIRRAUX & JEAN-IVES LE DEAUT, (2012) ‘L’INNOVATION A L’ÉPREUVE DES PEURS ET DES RISQUES’, RAPPORT DEPOSE A L’ASSEMBLEE NATIONALE ET AU SENAT 183 (Office Parlementaire 2012)(describing the fear for innovation and the rise of the new obscurantism), <http://www.assemblee-nationale.fr/13/pdf/rap-off/i4214.pdf>.

health, environmental, or social catastrophe. Described as “*Ill-defined*,” the principle enjoys a “*philosophical reputation [which] is low*.”⁵

As a regulatory tool, the precautionary principle is defined by the following core elements: (i) *Uncertainty*: it is applicable to inform a decision when there is a lack of scientific certainties and/or of full knowledge; (ii) *Lack of harm*: actual harm, or even foreseeable harm, is not required — only the potential of a future harm (*i.e.*, a hypothetical harm,) ⁶ is necessary for the precautionary principle to apply; (iii) *Shift of the burden of proof*: the private actor must prove to the regulator an absence of negative effects and/or efficiencies deriving from its business conduct, harm is assumed unless proven otherwise; and (iv) *Urgency to regulate*: the irreversibility of the damage envisaged, together with the inability of the private actor to demonstrate an absence of negative effects and/or efficiencies justifies immediate regulation through interim and/or permanent measures.

When these elements are identified, the precautionary principle is successfully invoked by regulators, enforcers, and market players as a justification for intervention. By placing a high burden on the market participant to prove an absence of negative effects and/or efficiencies associated with normal business conduct, and mandating regulation in the absence of evidenced market failures, the precautionary principle stifles innovation.⁷

Essentially, the precautionary principle “*lowers the evidentiary bar for policy-making*

⁵ Stephen M. Gardiner, *A Core Precautionary Principle*, 14 J. POL. PHIL. 33, 33 (2006).

⁶ See generally, Stephen Charest, *Bayesian Approaches to the Precautionary Principle*, 12 ENVTL. L. & POL’Y F. 265 (2002). See also Thibault Schrepel, *Retooling Antitrust Law for Digital Markets*, LE CONCURRENTIALISTE, <https://leconcurrentialiste.com/antitrust-law-digital-markets/>.

⁷ Aurelien Portuese & Julien Pillot, *The Case for an Innovation Principle: A Comparative Law & Economics Analysis*, 15 MANCHESTER J. INT’L ECON. L. 214, 237 (2018) (demonstrating the precautionary principle deters innovation and advocating for a principle that fosters innovation).

on risks”⁸ and can trigger “false alarms”⁹ generating false positives, fostering over-regulation which in turn deters innovation. In fact, the precautionary principle paralyzes innovation¹⁰ and instills fears.¹¹ The principle has been extensively broadened by the European Court of Justice (ECJ) in the context of hazardous activities, environmental protection, and other issues involving serious health threats.¹² In this context, the ECJ suggested that public authorities may be compelled to actively enforce the precautionary principle whenever they make decisions.¹³ The ECJ interpreted the precautionary principle as obliging public authorities to prohibit activities with the potential to affect the integrity of a natural site, thereby recommending *de facto* prohibitions of these types of activities or projects.¹⁴ Finally, the ECJ considered that a probable causality between the activity envisaged and the hypothetical risks considered, was sufficient for the

⁸ Noelle Eckley & Henrik Selin, *All talk, little action : precaution and European chemicals regulation*, 11.1 J. EUR. PUB. POL’Y, 78, 82 (2004).

⁹ STEFFEN FOSS HANSEN & JOEL A. TICKNER, THE PRECAUTIONARY PRINCIPLE AND FALSE ALARMS – LESSONS LEARNED 12 (EUR. ENV’T AGENCY 2013) (identifying four instances where the precautionary principle has led to overregulation : “The analysis revealed four regulatory false positives : US swine flu, saccharin, food irradiation, and Southern leaf corn blight. Numerous important lessons can be learned from each, although there are few parallels between them in terms of when and why each risk was falsely believed to be real.”).

¹⁰ See Caroline Orset, *Innovation and the precautionary principle*, 23 ECON. OF INNOVATION AND NEW TECH., 780, 797 (2014) (concluding “we have found that the consequences of precautionary regulation may be harmful for innovation. Indeed, some new activities may not be undertaken by the agent under regulation while it could have been done without regulation. Precautionary state regulation may then be paralyzing for innovation.”); Portuese & Pillot, *supra* note 7; Kathleen Garnett, Geert Van Calster & Leonie Reins, *Towards an innovation principle: an industry trump or shortening the odds on environmental protection?* 10 L., INNOVATION & TECH. 1, 14 (2018); EUROPEAN RISK FORUM, THE INNOVATION PRINCIPLE: OVERVIEW (2013), http://www.riskforum.eu/uploads/2/5/7/1/25710097/innovation_principle_one_pager_5_march_2015.pdf; EUR. COMM’N, TOWARDS AN INNOVATION PRINCIPLE ENDORSED BY BETTER REGULATION, 14 (2016).

¹¹ CASS R. SUNSTEIN, *LAWS OF FEAR : BEYOND THE PRECAUTIONARY PRINCIPLE* (Cambridge University Press eds., 2012).

¹² See C-157/96 63, *The Queen v Ministry of Agriculture* 1998 ECR I-2211 64 ; C-180/96 99, *United Kingdom v. Commission* 1998 ECR I-2265 100.

¹³ See T-13/99, *Pfizer Animal Health v Council* 2002 ECR II-3305 444; T-70/99, *Alpharma v Council* ECR 2002 II-3495 355.

¹⁴ See C-127/02, *Waddenvereniging & Vogelsbeschermingvereniging* 2004 ECR I-7405 45.

application of the precautionary principle in preventing or prohibiting the activity.¹⁵

While the application of this principle in areas involving serious risks to health at first glance seemed justified, it nevertheless resulted in prohibiting innocuous activities in the absence of evidence of potential harm. The extensive interpretation by the ECJ and later its adoption by public authorities resulted in the creation of an extensive *ex-ante* interventionist tool.

Moreover, despite early forecasts that the precautionary principle would “risk international isolation” as “controversial and ill-understood,”¹⁶ the precautionary principle now enjoys full recognition and widespread enforcement in any European regulatory intervention.

The core elements of the precautionary principle have permeated into European competition enforcement and now have a predominant role in its application to the digital economy. This is reflected both in recent enforcement decisions and regulatory proposals under public consultation.¹⁷

¹⁵ See C-280/02, *Commission v France* 2004 ECR I-8573 34.

¹⁶ See Giandomenico Majone, *What Price Safety? The Precautionary Principle and its Policy Implications*, 40 J. COMMON MKT. STUD. 89, 90 (2002).

¹⁷ Not only is this precautionary approach to European competition enforcement visible in the Digital Reports (see Section II *infra.*), but it is advocated for in recent public consultations initiated by the European Commission. See e.g., Press Release, Antitrust: Commission consults stakeholders on a possible new competition tool (June 2, 2020), https://ec.europa.eu/commission/presscorner/detail/en/ip_20_977 (proposing the need for “a **possible new competition tool** to deal with structural competition problems across markets which cannot be tackled or addressed in the most effective manner on the basis of the current competition rules (e.g. preventing markets from tipping)”; See also EUR. COMM’N, DIGITAL SERVICE ACT PACKAGE – EX ANTE REGULATORY INSTRUMENT OF VERY LARGE ONLINE PLATFORMS ACTING AS GATEKEEPERS, ROADMAP (2020), <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12418-Digital-Services-Act-package-ex-ante-regulatory-instrument-of-very-large-online-platforms-acting-as-gatekeepers> (stating that the “impact assessment will examine different policy options for the effective ex ante regulatory framework that ensures that online platform ecosystems controlled by large online platforms that benefit from significant network effects remain fair and contestable, in particular in situations where such platforms may act as gatekeepers.”); See also EUR. COMM’N, SINGLE MARKET – NEW COMPLEMENTARY TOOL TO STRENGTHEN COMPETITION ENFORCEMENT, ROADMAP (2020), <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12416-New-competition-tool> (stating that “the initiative intends to address as specific objectives the structural competition problems that prevent markets from functioning properly and tilt the level playing field in favour of only a few market players. Restoring

In Section I of this paper, I examine the origins or seeds of precautionary antitrust by revisiting enforcement by European administrative competition agencies in digital markets. In Section II, I explain how this ideology was embraced, advocated, and advanced in several “tech reports” representing the blossoming of the precautionary principle. I conclude in Section III, by proposing the reinstatement and further development of tools that protect the legal and economic rationale of antitrust, as recognized by European courts.

I. SEEDS OF PRECAUTIONARY ANTITRUST: EUROPEAN COMPETITION ENFORCEMENT

The European Commission’s (Commission) recent digital platform decisions provide both the seeds and the “evidence” to which the multiple digital reports and legal reform advocates refer when advocating for precautionary antitrust enforcement. I demonstrate in this chapter, that far from identifying harm under the consumer welfare standard, the decisions show a systematic erosion of well accepted legal and economic principles which are the basis of European competition policy and enforcement. The evolution of the Commission’s decision practice shows a move from an effects-based approach towards formalistic structural presumptions. Nevertheless, the Courts (*i.e.* the General Court and the ECJ) provide the necessary judicial checks to ensure adherence to rule of law principles and sound economic reasoning¹⁸. After illustrating the core elements of the precautionary approach towards the digital economy in the European decisional practice, I show the role of the Courts to safeguard rule of law principles and the traditional economic analysis that modernized antitrust enforcement.

undistorted competition on these markets will deliver competitive outcomes in terms of lower prices and higher quality, as well as more choice and innovation to European consumers. It will also help small and medium-sized enterprises to compete more effectively against powerful incumbents and reap the fruits of their investments.”).

¹⁸ This judicial safeguard requiring economic evidence and adhering to economic principles is mainly illustrated by the ECJ Intel judgment. See below at p.19 *et sub.*

Recent Commission decisions on the digital economy are fraught with examples of the application of each of the principles of precautionary antitrust.

First, antitrust enforcement towards digital players is replete with incommensurable *uncertainties*. Both the literature¹⁹ and agency digital reports²⁰ acknowledge the obvious fact that traditional antitrust enforcement is massively challenged by disruptive technologies with novel characteristics such as two-sided markets, zero-priced markets, ecosystem-building via new business models, etc. European decisional practice recognizes these difficulties and emphasizes the inherent

¹⁹ John M. Newman, *Antitrust in Digital Markets*, 72, 5 VAND. LAW REV. 1497, 1561 (2019) (noting from the onset that “antitrust law has largely failed to address the challenges posed by digital markets”); Antonio Capobianco & Anita Nyeso, *Challenges for Competition Law Enforcement and Policy in the Digital Economy*, 9 J.EUR. COMPETITION L. & PRAC. 19, 27 (2019); Dirk Auer & Nicolas Petit, *Two-sided markets and the challenge of turning economic theory into antitrust policy* 60(4) ANTITRUST BULL. 426, 461 (2015); Diane Coyle, *Practical Competition Policy Implications of Digital Platforms*, 82 ANTITRUST L. J. 835, 860 (2019) (concluding that “there is no settled approach either in the economic literature or competition practice to weighing static efficiency against the potentially much larger dynamic efficiency gains or losses”); Pablo Ibáñez Colomo, A Contribution to ‘Shaping Competition Policy in the Era of Digitisation’, 2 (Sept. 30, 2018) (unpublished manuscript); Daniel Crane, *Ecosystem Competition and the Antitrust Laws*, 98 NEB. L. REV. 412, 424 (2019).

²⁰ See generally Section II *infra*. See in particular the Cremer Report where, at p.70, it is argued that “. . . we believe that competition law can and should, for the foreseeable future, continue to accompany and guide the evolution of the platform economy. Its case law method is particularly well suited for the current state of evolution of the platform economy: a still experimental stage, where the efficiencies of different forms of organisation are not yet well understood and our knowledge and understanding still needs to evolve step by step”, and at p.17, where it is argued that “. . . discussions are only just beginning about novel theories of harm regarding some types of conduct of conglomerate firms that are dominant in a core market characterized by strong network effects and a large user base but, based on these particular strengths, including data, reach out to broader markets. The relevant strategies, and their effects on competition and innovation, will need to be studied more in depth. Similarly, further research on the competitive impact of (big) data pooling might be needed”; the Furman Report considers, at p.117, that “the concerns relating to consumers’ data, and regarding whether any exclusive or preferential practices have an adverse effect on competition within the ad tech sector, are also both highly relevant to the Panel’s aims and CMA findings could significantly advance authorities’ understanding of these issues” and that “the CMA studying the digital advertising market will also boost its knowledge and understanding of digital markets, enhancing its capability to use its tools in these industries”; MONOPOLKOMMISSION, COMPETITION POLICY: THE CHALLENGE OF DIGITAL MARKETS, SPECIAL REP. No 68, 10 (2015), https://www.monopolkommission.de/images/PDF/SG/s68_fulltext_eng.pdf.

risks of intervening in an area where innovation incentives are essential to the benefits of the digital economy and consumers.²¹

Second, the Commission's enforcement also reveals ignorance regarding some technical aspects of the businesses under its review. This is illustrated, for example, by the Commission decision in the Facebook/WhatsApp merger,²² extensively cited as an example of failure of the E.U. Merger Regulation (EUMR) to prevent anticompetitive mergers.²³ The Commission found WhatsApp and Facebook were not close competitors in the market for consumer communication because consumers used both applications on the same device, and one service required the creation of a profile while the other was accessed via phone number. However, the Commission later on realized it was technically possible, at the time of the merger, to match Facebook and WhatsApp users accounts and fined Facebook for providing misleading information.²⁴ The merger was

²¹ For instance, in the *Google Shopping* decision, the Commission acknowledges, at 267, that “in fast-growing sectors characterized by short innovation cycles, larger market shares may sometimes turn out to be ephemeral and not necessarily indicative of a dominant position.” *Google Shopping Decision*, *infra* note 33.

²² Case No COMP/M.7217, *Facebook/ WhatsApp*, (2014), (Facebook/WhatsApp), https://ec.europa.eu/competition/mergers/cases/decisions/m7217_20141003_20310_3962132_EN.pdf

²³ The criticism of the decision is centered on the alleged inability to detect and prevent so-called “killer” acquisitions, *i.e.* the idea that the primary intent of the merger is to stop a product's development without an efficiency rationale. The term is generally employed loosely to refer to both “potential” and “nascent” competition. As Yun explains, these concepts are different, potential competition has a long history in antitrust and competition law and refers to a firm that is predicted to have a competing product at some point. See John M. Yun, *Potential Competition and Nascent Competitors*, 4 CRITERION J. ON INNOVATION 625 (2019). The problem with the proposition that a merger should be blocked to allow for the development of another independent player is assessing the counterfactual. The Commission would have to predict whether the company would have been successful and what its development would have been absent the merger. Additional issues arise from the fact that many startups are invested on the possibility of being bought out in the future, therefore these acquisitions also incentivize innovation. For more on killer acquisitions and potential competition, see John M. Yun, *Potential Competition, Nascent Competitors, and Killer Acquisitions*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

²⁴ The Commission, however, reiterated this finding did not change its 2014 decision to authorize the transaction which was based on a number of issues beyond user matching. See Press Release, Mergers: Commission fines Facebook €110 million for providing misleading information about WhatsApp takeover (May 18, 2017), https://ec.europa.eu/commission/presscorner/detail/en/IP_17_1369.

therefore cleared on the basis of unverified information showing an evident need to increase competition authorities' know how of the industry.

Third, European enforcement has increasingly reneged on the requirement to identify harm to consumers to find antitrust liability. The theory of harm has morphed into a theory of choice.²⁵ This evolution started with a lowering of the threshold to a requirement of potential harm,²⁶ as opposed to actual proof of harm. It then openly embraced the protection of consumer choice.²⁷ Along the Ordoliberal tradition,²⁸ and to avoid "market tipping"²⁹ in digital markets, the reduction of consumer choice functioned as a substitute for evidence of consumer harm. This created a bias against big companies in favor of small companies.³⁰ This precautionary approach places a blind faith in structural presumptions and assumes, without analyzing market dynamics, that innovation and economic benefits will necessarily be greater in a market with a larger number of small (potentially less efficient) firms than in one with a few large firms. The

²⁵ STEVEN ANDERMAN, NEIL W. AVERITT, PETER BEHRENS, ET. AL., CHOICE – A NEW STANDARD FOR COMPETITION LAW ANALYSIS? (Paul Nihoul, Nicolas Charbit & Elisa Ramundo Eds. 2016), <https://ascola.org/sites/ascola/files/ascola/news/documents/Choice%20-%20A%20new%20standard%20for%20competition%20law%20analysis.%20DEMO.pdf>.

²⁶ Harm only needs to be "probable" as there is "no need to show that it is of serious or appreciable nature," see C 23/14, Post Danmark A/S v Konkurrenceradet, 2015 ECLI:EU:C:2015:651.

²⁷ See generally, C-52/09, TeliaSonera Sverige 2011 ECR I-527, 28.

²⁸ See PETER BEHRENS, THE ORDOLIBERAL CONCEPT OF 'ABUSE' OF A DOMINANT POSITION AND ITS IMPACT ON ARTICLE 102 TFEU, (P. Nihoul & I Takahashi Eds. 2015). As early as in Hoffmann-La Roche in 1976, the freedom of choice was central to the assessment of abuse of dominant position: "The conduct of Roche . . . constitutes an abuse of a dominant position, because by its nature it hampers the freedom of choice in para.22, in Comp 76/642/EEC, Vitamins (Hoffmann-La Roche), 1976 O.J. L 223/27."

²⁹ Executive Vice-President Margrethe Vestager aims at tackling the so-called "tipping" of markets by big platforms to avoid "structural risks" to competition: "We see, however, that there are certain structural risks for competition, such as tipping markets, which are not addressed by the current rules. We are seeking the views of stakeholders to explore the need for a possible new competition tool that would allow addressing such structural competition problems, in a timely and effective manner ensuring fair and competitive markets across the economy," she argued on June, 2 2020, when announcing the possible new competition tools. These "structural competition" problems largely pare down to protecting the idealized market structure.

³⁰ By assuming that a lack of interoperability is lack of choice in digital markets, a new type of abuse of dominance is created, applicable to any case where interoperability is deemed insufficient.

underlying principle is the purported need to preserve consumer choice to preserve competition. Consumer choice is further pursued through the downgrading of the role of market definition in lieu of effects analysis (leading to narrow *ad hoc* market definitions fitting the purported theories of harm);³¹ the introduction of novel dominance concepts (such as “intermediary power”); and the *prima facie* condemnation of normal or competitively neutral business practices (such as “self-preferencing”).³²

³¹As exception, see Comp/M.4731, Google/DoubleClick, (2008), (Google/DoubleClick), https://ec.europa.eu/competition/mergers/cases/decisions/m4731_20080311_20682_en.pdf. On March 2008, the Commission cleared the acquisition of DoubleClick by Google. While the Commission adopted narrow market definitions, artificially separating online advertisement from that provided through other channels, the decision nevertheless constitutes an example of economics-based analysis, contrasting with the current precautionary approach. However, by defining online advertisement as separate from other types of advertisement, the Commission departed from the findings of other European and foreign regulators and national competition authorities. See Daniel Gore, *Market definition in merger control: An overview of EU and national case law*, E-COMPETITIONS ANTITRUST CASE LAWS E-BULL., CONCURRENCES, (2020). For example, the UK telecommunications regulator OfCom found radio advertising was constrained by online media. See OFCOM, RADIO ADVERTISING MARKET RESEARCH RADIO ADVERTISING MARKET RESEARCH ASSESSMENT OF THE CONSTRAINTS ON THE PRICE OF DIRECT AND INDIRECT RADIO ADVERTISING (2006), https://www.ofcom.org.uk/__data/assets/pdf_file/0013/24070/research.pdf. Along the same lines, the Canadian Competition Bureau acknowledged growing competitive constraints to newspaper advertisements from online advertisements in the Transcontinental/Quebecor media merger. See CAN. COMPETITION BUREAU, POSITION STATEMENT, COMPETITION BUREAU STATEMENT REGARDING THE ACQUISITION BY TRANSCONTINENTAL OF QUEBECOR MEDIA’S COMMUNITY NEWSPAPERS IN QUEBEC (2014), <https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/03740.html>; the French Competition Authority also found a single market composed of both online and offline advertisement in the Aufemininpar/TF1 transaction, see Décision n° 18-DCC-63 relative à la prise de contrôle exclusif de la société Aufemininpar TF1, 2018 <https://www.autoritedelaconurrence.fr/sites/default/files/commitments/18DCC63decisionpubliee.pdf>. The Commission discarded risks mainly because the merger presented no horizontal overlaps. On one hand, Google was active in the markets for internet search, online advertisement, and intermediation services between publishers and advertisers through AdSense. On the other hand, DoubleClick mainly sells ad serving, management, and reporting technology worldwide to website publishers, advertisers, and agencies. DoubleClick technology therefore provides a tool for monitoring both the publishing and performance of advertisements. The Commission concluded these activities exerted no competitive constraints on the activities of the other company. The Commission also discarded any anticompetitive effects arising from DoubleClick acting as a “potential competitor” in the market for advertisement intermediation, given the existence of other competitors. Finally, the Commission also analyzed and discarded effects arising from vertical or conglomerate effects such as incentives to raise rival’s costs. The decision concluded that there were credible ad serving alternatives to which advertisers and networks could switch, in particular vertically integrated companies such as Microsoft, Yahoo! and AOL. The Commission also concluded that foreclosure was not likely because it would be unprofitable.

³² For a further discussion of Self-Preferencing, see Michael Salinger, *Self-Preferencing*, in THE GAI REPORT

The predominance of consumer choice as a substitute for consumer harm is evidenced by the Google Shopping decision. In June 2017, the Commission fined Google €2.42 billion for infringing Article 102 TFEU by allegedly leveraging its market dominance as a search engine to gain an illegal advantage in the market for comparison-shopping.³³ Although the reasoning and facts indicate the theory of harm was discrimination,³⁴ the Commission framed it under the novel theory of “abusive leverage.” Whether European Courts will accept this theory has yet to be determined, and is a subject in the pending appeal.³⁵ However, the decision as it stands today, clearly departs from the decisions of other competition authorities, including the U.S. Federal Trade Commission (FTC), several U.S. State Attorneys General, and Canada, all of which have closed investigations into Google based on theories of “self-preferencing” and “self-bias.”³⁶

Google’s search engine originally produced ‘generic or horizontal’ search results, but has evolved to provide ‘specific or vertical’ search results in the form of sponsored ads and links (featured at the top of the page), and commercial products, services, and information (generally included in separate boxes). The combination of horizontal and

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³³ AT.39740, *Google Search (Shopping)*, (2017), (Google Shopping Decision) O.J. 2018 C 9/08, 11, https://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf [hereinafter Google Shopping Decision].

³⁴ See Christian Bergqvist, *Discrimination and Self-Favoring in the Digital Economy*, at 8 et seq (2020), <https://ssrn.com/abstract=3531688> or <http://dx.doi.org/10.2139/ssrn.3531688>.

³⁵ T-612/17, *Google and Alphabet*. O.J. 2017 C 369, 37.

³⁶ See FED. TRADE COMM’N, STATEMENT REGARDING GOOGLE’S SEARCH PRACTICES, IN THE MATTER OF GOOGLE INC. FILE NO. 111-0163 (2013), https://www.ftc.gov/system/files/documents/public_statements/295971/130103googlesearchstmtofcomm.pdf. The states of Texas and Ohio closed their respective investigations in 2014, See ZACH MINERS, OHIO CLOSES GOOGLE ANTITRUST INVESTIGATION, (Feb 9, 2015), <https://www.pcworld.com/article/2882072/ohio-closes-google-antitrust-investigation.html>. See Press Release, Competition Bureau, Gov’t of Can., Competition Bureau Completes Extensive Investigation of Google (Apr. 19, 2016), <https://www.canada.ca/en/competition-bureau/news/2016/04/competition-bureau-completes-extensive-investigation-of-google.html>.

vertical search has been referred to as “Universal” search. Thus, when a search is entered, three separate sets of results are exhibited, two of which lead to Google affiliated services. Google has also added additional services, including the comparison-shopping business (which also appears in an upper box).³⁷ According to the Commission, the comparison-shopping business was initially unsuccessful until Google began to employ a new business strategy.³⁸ The strategy consisted in prominently placing its own comparison-shopping service at the top of Google’s search results.³⁹ The Commission found two relevant product markets: one for search services (where Google had a 90% market share), and a separate market for comparison shopping services.⁴⁰ The Commission concluded that the relevant geographic market was national in scope.⁴¹ The Commission found Google was dominant in the national markets for general search in the EEA (with the exception of Croatia), since 2011.⁴²

The Commission essentially found Google’s self-favoring conduct was anticompetitive because it diverted traffic away from competing services to its own; and was capable or likely to have anti-competitive effects in the markets for comparison shopping and general search.⁴³ The Commission found the anticompetitive effects were a potential foreclosure of competing comparison-shopping services (potentially leading to higher fees for merchants, higher prices for consumers, and less innovation) and a

³⁷ Google entered the market for comparison shopping with “Froogle” in 2004, later re-named “Google Product Search” in 2008, and “Google Shopping” in 2013. *See* Google Shopping Decision, *supra* note 33, at 11. Google Shopping allows consumer to compare products and prices from online retailers including online shops of manufacturers, platforms, and others. *Id.*

³⁸ *See id.*

³⁹ *Id.* at 179 *et seq.*

⁴⁰ *Id.* at 28 *et seq.*

⁴¹ *Id.* at 55.

⁴² *Id.* at 56 *et seq.*

⁴³ *Id.* at 179 *et seq.*

likelihood of reducing consumers' access to the most relevant comparison-shopping services. The Commission also found Google failed to provide evidence of efficiencies.⁴⁴

The diversion of traffic was achieved by submitting competing offerings only to the generic search ranking algorithm, and reserving the best positioning in the generic search results and the separate boxes (which included pictures and graphics) for Google's own offerings. According to the Commission, this conduct alone was sufficient to make a claim for "abusive leveraging" creating a new category of infringement to Article 102 consistent with self-favoring.

The Commission's analysis was focused on "discrimination" i.e. *that the placement of Google's products was not a result of the algorithm* but instead that they received different treatment. Rather than provide a showing that specific competitors were excluded, or that a percentage of the market was foreclosed to them, the decision proposed that a *plausible gradual foreclosure in the longer term* was sufficient to find an infringement.⁴⁵ The decision also failed to provide evidence of consumer harm and relied on statistical analysis of visibility and other metrics related to the presentation and display of unaffiliated shopping sites between 2010 and 2016.⁴⁶ Clearly focused on consumer choice, the Commission prioritized the availability of short term options and disregarded the consumer welfare effects of the innovation of "new search result boxes."⁴⁷ Therefore, the Commission's theory of harm is elusive and unconvincing.

⁴⁴ *Id.* at 197 *et seq.*

⁴⁵ See Christian Bergqvist & Jonathan Rubin, *Google and the Trans-Atlantic Antitrust Abyss*, 73 UNIV. COPENHAGEN FAC. L. L. STUD. RSCH. PAPER SERIES 16 (2019).

⁴⁶ Google Shopping Decision, *supra* note 33 at 81 *et seq.*

⁴⁷ Notably, benefits to consumer welfare was the main motivation for the FTC's closing of its investigation. See FED. TRADE COMM'N, *supra* note 36, at 1; See also Bergqvist & Rubin, *supra* note 45 at 12; see also John M. Yun, *Understanding Google's Search Platform and the Implications for Antitrust Analyses*, 14 J. COMPETITION L. & ECON. 311, 329 (2018).

Along the same lines, in the *Google Android* decision, the Commission sent a second infringement decision to Google in July 2018, with a fine of €4.34 billion for allegedly breaching Article 102 TFEU by imposing illegal restrictions on Android device manufacturers and mobile operators.⁴⁸ While the Commission adopted more generally accepted theories of harm, such as tying and exclusivity, the case was built on an extremely narrow market definition that disregarded competition between Android and Apple devices. It was also based on the proposition that Google used its dominance in one market to benefit another market where it was also dominant.

The Google Android Decision defined four relevant product markets: (i) the worldwide market (excluding China) for the licensing of smart mobile operating systems (OSs); (ii) the worldwide market (excluding China) for Android app stores; (iii) the national markets for general search services; and (iv) the worldwide market for non OS-specific mobile web browsers. The decision considers Google dominant in the first four markets.⁴⁹

The Commission found Google had: (i) *tied* the Google Search app and Google Chrome browser with the Play Store; (ii) *made exclusivity payments* to large manufacturers and mobile network operators conditioned on the pre-installing of the Google Search app; and (iii) *conditioned licensing*, obstructing the development and distribution of competing Android systems (Android forks). The Commission found these constituted a “single and continuous infringement” aimed at transferring Google Search’s market power from desktop to mobile devices. As part of this strategy Google bought the original developer of the Android mobile operating system and continued to develop Android, which, according to the Commission, now accounts for 80% of the smart mobile devices in Europe and worldwide. Surprisingly, the Commission’s theory of harm proposes

⁴⁸ AT.40099, *Google Android* (Google Android Decision), O.J. 2019/C 402/05, https://ec.europa.eu/competition/antitrust/cases/dec_docs/40099/40099_9993_3.pdf [hereinafter Google Android Decision].

⁴⁹ *Id.* at 56 *et seq.*

Google used *its market dominance in the Play Store* to leverage its power into the *search market where it is also dominant*.⁵⁰ Even more puzzling is the fact that no separate market is defined for search on desktop and mobile devices.⁵¹

Moreover, the Commission should not have excluded the main incumbent, Apple, from smart mobile operating systems simply because Apple does not license its OS. Instead, the Commission should have defined the market as the market for smart mobile operating systems.⁵² This alternative market definition is supported by the fact that Apple and Android devices compete at the consumer level.⁵³ The Commission discarded consumer level competition between Apple and Android devices, claiming it was insufficient based on a series of factors consumers consider when choosing a device including their different prices, branding, and switching costs. However, these factors are elements of inter brand competition not only between devices but between operating systems. Finally, the underlying theory of the case seems to be that Google apps or the Google licensed version of the Android are “essential” or “must have” for device manufacturers, *i.e.* that they constitute an “essential facility.”⁵⁴ The Commission, however, does not present this theory of harm nor provide evidence of a refusal to supply that would support it.

More importantly, the effect of the Google Shopping and Google Android decisions seems to reduce rather than increase welfare. The bundling of the Google Play Store, Google Search app, and Google Chrome browser funded the free Android OS

⁵⁰ See Google Android Decision, *supra* note 48, at 302 *et seq.* See AURELIEN PORTUESE, THE RISE OF PRECAUTIONARY ANTITRUST: AN ILLUSTRATION WITH THE EU GOOGLE ANDROID DECISION, COMPETITION POL’Y INT’L (2019); See also, PINAR AKMAN, A PRELIMINARY ASSESSMENT OF THE EUROPEAN COMMISSION’S GOOGLE SEARCH DECISION, ANTITRUST CHRONICLE, COMPETITION POL’Y INT’L. (2017).

⁵¹ *Id.*

⁵² See *id.* at 4.

⁵³ *Id.*

⁵⁴ *Id.* at 7.

through the advertisement revenue from Google Search either in the Search app or Chrome browser.⁵⁵ By requiring the unbundling of these services, the Commission disrupted the business model and Google has announced it will charge for licensing the apps for Android including the Play Store.⁵⁶ End-consumers appear to be harmed by this decision while the theory of harm seems fragile.

Finally, on March 2019, the Commission issued a third decision against Google fining it €1.49 billion for an alleged infringement of Article 102 TFEU by imposing contractual restrictions on third-party websites to cement its dominance in the market for intermediation of online search advertisements (Google AdSense Decision).⁵⁷ AdSense works as an online search advertising intermediation platform, connecting owners of “publisher” websites with search functions (newspapers, travel sites, etc.) that want to profit from the space around their search results, with businesses that want those advertisement spaces.⁵⁸

The Commission defined the relevant market as “online search advertising intermediation” in the EEA where Google had a market share above 70% (2006-2016).⁵⁹ The Commission also found Google had shares generally above 90% in the national online markets for general search and above 75% in most of the national markets for online search advertising.⁶⁰

The alleged anticompetitive conduct consisted of: (i) entering into contracts with exclusivity clauses prohibiting third party websites from including search

⁵⁵ *Id.*

⁵⁶ See PINAR AKMAN, WILL THE EUROPEAN COMMISSION’S GOOGLE ANDROID DECISION BENEFIT CONSUMERS?, TRUTH ON THE MARKET (2018), <https://truthonthemarket.com/2018/07/19/will-the-european-commissions-google-android-decision-benefit-consumers/>.

⁵⁷ See Press Release, Commission fines Google €1.49 billion for abusive practices in online advertising, (March 20, 2019), https://ec.europa.eu/commission/presscorner/detail/en/IP_19_1770.

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.*

advertisements from competitors in 2006; (ii) later in 2009, replacing the exclusivity clauses with “Premium Placement” clauses reserving the most profitable space and a minimum amount of Google ads; and (iii) in 2009 requiring written approval from Google prior to any changes in the way rival ads are displayed.⁶¹ The Commission argued these practices covered over half of the market (by turnover) and that Google’s rivals were not able to compete on the merits.⁶² The Commission further proposed that, since other competitors in online search advertising, such as Microsoft and Yahoo, cannot sell advertising space in Google, third party websites represent an important entry point for these companies to grow and compete with Google.⁶³ The Commission’s theory seems to imply that these contractual measures are able to foreclose Microsoft and Yahoo, without providing much evidence of the likelihood of that happening. In brief, the Commission argues that:

Google’s rivals [Microsoft and Yahoo] were unable to grow and offer alternative online search advertising *intermediation services* to those of Google. As a result, owners of websites had limited options for monetizing space on these websites and were forced to rely almost solely on Google.⁶⁴

While the decision seems focused on classic theories of exclusion, it is likely the full text includes “essential facilities” reasoning based on the relevance of Google as an “intermediary” of these services. Because the Commission seems interested in defending a wider availability of advertisements, the question of whether this results in more benefits to consumers arises, as well as how to determine and measure harm.

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.* (emphasis added).

The precautionary approach also shifts the burden of proof in antitrust analysis. The digital reports epitomize several proposals where the defendants (or the merging entity) would bear the burden of proving the harmlessness of their business conducts.⁶⁵

The Commission has continued to deepen its concern for the role of digital platforms as “intermediaries” and to observe self-preferencing or self-favoring conduct with suspicion. In July 2019, it opened an investigation into Amazon based chiefly on the company’s role as both a seller of products on its platform, and as the provider of a marketplace where other companies, including competitors, sell their products to consumers (Amazon Investigation).⁶⁶ This alleged “conflict of interest” between Amazon-as-platform and Amazon-as-retailer inverts the burden of proof onto Amazon to demonstrate the absence of anticompetitive consequences of its dual role. Specifically, the Commission is concerned Amazon may use competitively sensitive information about other sellers, their products, and transactions to gain a competitive advantage.⁶⁷ The investigation will look into: (i) standard agreements between Amazon and marketplace sellers that allegedly allow Amazon to analyze and use third party seller data and how that may affect competition; and (ii) the role of data in the selection of the winners of the “Buy Box” and the impact of Amazon’s potential use of competitively sensitive marketplace seller information on that selection.⁶⁸

The Amazon investigation, therefore, seems to echo and reaffirm the concerns of the Google Shopping Decision: that the platform itself constitutes a relevant market, making the company a monopoly by default, and that the “dominant” platform must grant equal treatment within its proprietary technology to clients and competitors.

⁶⁵ See *infra* Section II on digital reports.

⁶⁶ See Press Release, Commission opens investigation into possible anti-competitive conduct of Amazon, (July 17, 2019), https://ec.europa.eu/commission/presscorner/detail/en/IP_19_4291.

⁶⁷ *Id.*

⁶⁸ *Id.*

Additionally, this proposition is directly at odds with Commissioner Vestager's remarks that European consumers have benefited from online shopping because "*E-commerce has boosted retail competition and brought more choice and better prices.*"⁶⁹ The Commission, therefore, states that online commerce competes and disciplines physical retail shopping, while at the same time proposing that one online distribution channel, *i.e.* sales through Amazon, constitute a separate relevant market.

Finally, the seeds of precautionary antitrust can be illustrated by European enforcement of interim measures. There is no precautionary principle without the ability to legitimately regulate before harm arises, based on hypothetical risks. In what is perhaps the clearest showing of precautionary antitrust enforcement, the Commission imposed interim measures for the first time in 20 years, and for the first time under Regulation 1/2003, on the U.S. company Broadcom.⁷⁰ A lack of evidenced harm or market failures does not prevent either regulatory or enforcement interventions. Broadcom was deemed *prima facie* dominant in certain chipset markets, and the Commission ordered it to stop its conduct, pending a final decision on the merits (Broadcom Decision).⁷¹

The Commission found Broadcom dominant in the worldwide markets for Systems-on-a-Chip (SoCs) for Front End Chips and Wi-Fi Chips for inclusion in: (i) TV set-top boxes (STBs); (ii) DSL residential gateways (RGs) and; (iii) and fiber RGs.⁷² The alleged anticompetitive conduct concerned six "exclusivity inducing" provisions

⁶⁹ *Id.*

⁷⁰ Precautionary interventions via antitrust interim measures had been explicitly envisaged by Commissioner Vestager in her response to a Member of the European Parliament. *See* EUR. PARLIAMENT, QUESTION FOR WRITTEN ANSWER E-004559-17 (2017), https://www.europarl.europa.eu/doceo/document/E-8-2017-004559_EN.pdf, (stating the Commission applies precautionary measures when deciding antitrust cases); EUR. COMM'N, ANSWER BY MS. VESTAGER ON BEHALF OF THE COMMISSION, E-004559/2017(ASW) (2017), https://www.europarl.europa.eu/doceo/document/E-8-2017-004559-ASW_EN.pdf.

⁷¹ Imposed pursuant to Article 8 of Regulation (EC) No 1/2003. *See* Press Release, Commission imposes interim measures on Broadcom in tv and modem chipset markets, (October 16, 2019), https://ec.europa.eu/commission/presscorner/detail/en/IP_19_6109.

⁷² *Id.* at 5.

contained in agreements with original equipment manufacturers (OEMs) regarding SoCs for STBs and/or RGs. These provisions included so called “exclusivity or quasi-exclusivity agreements” and others deemed by the Commission as “leveraging Broadcom’s market power to other markets or products.”⁷³ The justification for the interim measures was the likelihood that Broadcom’s competitors would be increasingly marginalized or forced to exit the market before the Commission came to a final decision.⁷⁴ However, for the Broadcom Decision to stand under Article 8 or Regulation 1/2003, the Commission must meet the burden of showing: (i) risk of serious and irreparable damage to competition; (ii) on the basis of a *prima facie finding of an infringement*. The decision does not meet these standards and directly contravenes ECJ precedents such as *Intel*.⁷⁵

Assuming *arguendo* that the Commission’s market definitions are true to market dynamics, and that Broadcom is dominant within those markets, the alleged conduct (*i.e.* exclusivity and loyalty rebates) is conduct analyzed according to its effects. As such, a *prima facie* finding of illegality changes the legal standard and the burden shifting regime under which this conduct is analyzed, turning them into restrictions *by object* and placing the burden on the defendant to show procompetitive efficiencies that outweigh the identified risks.

However, the effects of the interim measures extend far beyond an inversion of the burden of proof and legal standard, they operate as *de facto* condemnation. This is because the defendant will logically prefer to offer commitments rather than wait for a final decision which, likely, will restate the Commission’s interim findings. This was

⁷³ *Id.* at 6.

⁷⁴ *Id.* at 7.

⁷⁵ See C-413/14 P *Intel Corp v Commission* ECLI:EU:C:2017:632 overturning T-286/09, *Intel v Commission*, 2014 ECLI:EU:T:2014:547.

exactly the case here where Broadcom offered extensive commitments aimed at remedying the Commission's preliminary findings of harm.⁷⁶

While European decisional practice features the essential elements of the precautionary principle, thereby abandoning effects-based analysis in favor of a more deontological approach that relies on structural presumptions, the judiciary and especially the ECJ, have provided the necessary safeguards to ensure adherence to the rule of law and sound economic reasoning. This is exemplified by the 2017 Intel judgment⁷⁷ where the ECJ set aside a judgement of the General Court on the basis that the court failed to assess Intel's effects arguments. The ECJ held the General Court failed to consider Intel's arguments against the 'as efficient competitor' test in the Commission's decision which fined Intel for having abused its dominant position via rebate schemes.⁷⁸ The ECJ held that economic arguments must be thoroughly reviewed by the General Court rather than assumed true as stated in the Commission's decisions. This decision represents a strong blow to the Commission's precautionary approach, which relies on mere hypothetical risks of effects. Indeed, rightly perceived as a revitalization of the "effects-based approach" in competition law⁷⁹ and more generally of the importance of economics in antitrust enforcement, the 2017 Intel judgement illustrates the recent direction adopted by the Court: more economic-based and aligned with traditional

⁷⁶ See AT.40608, Broadcom Commitments under Article 9 of Regulation 1/2003, 2020 C 142/03 (Broadcom Decision) https://ec.europa.eu/competition/antitrust/cases/dec_docs/40608/40608_2511_10.pdf.

⁷⁷ *Id.* at fn. 64.

⁷⁸ Laurence Idot, *Regards sur l'arrêt Intel. Confirmations ou evolution?*, Droit de l'Union Européenne, 3 REVUE DE SCIENCE CRIMINELLE ET DE DROIT PÉNAL COMPARE, 639, 654 (2014); Damien Geradin, *Loyalty Rebates after Intel: Time for the European Court of Justice to Overrule Hoffman-La Roche* (2015) 11 J. COMPETITION L. & ECON. 579, 615; Lucas Peepkorn, *Conditional pricing: Why the General Court is wrong in Intel and what the Court of Justice can do to rebalance the assessment of rebates*, 1 CONCURRENCES REV. 43, 63 (2015); Nicolas Petit, *The Advocate General's Opinion in Intel v Commission: Eight points of common sense for consideration by the CJEU*, CONCURRENCES REV. (2016).

⁷⁹ Linklaters, *The ECJ Intel judgement: an important step towards a more effects-based approach in abuse of dominance cases* (2017).

economic principles,⁸⁰ the Court clearly expresses its desire to judge by the facts and the economic evidence provided. This commonsensical judicial stance clashes with the less economic and more precautionary approach recently advocated by the Commission. Reversed burdens of proof rather than traditional evidentiary rules, new theories of harm rather than legally predictable infringements of competition laws, emphasis on hypothetical risks to the structure of competition rather than a requirement to evidence actual harm to consumers are contradictory stances between the Commission's and the Court's recent directions. Indeed, the ECJ's requirement of actual effects removes the foundations of precautionary interventions since the economic approach (and evidence) are reinstated as essential to antitrust analysis. Economic intuitions cannot be accepted, the Intel judgment implied.⁸¹ This limitation put a hold on what precautionary enforcers would like antitrust to become, when hypothetical risks of abuses of dominance are invoked without further economic evidence.⁸² Consequently, it appears expectable that

⁸⁰ Pascale Déchamps and Gunnar Niels, *The One Billion Euro Question for Intel: Moore's Law or Murphy's Law?* 9 *Journal of European Competition Law and Practice*, 2, 124 (2018) who demonstrate that the use of the as-efficient competitor test by the Court may "decrease the risk of over-enforcement" which is the opposite concern of the Commission who remains worried about risks of under-enforcement as illustrated by the Cremer Report and the subsequent "new competition tools" proposed. See below.

⁸¹ The *Intel* judgement endorsed Advocate General Wahl's Opinion according to which anticompetitive foreclosure effects must be evidenced "*in all likelihood*" : ". . . likelihood must be considerably more than a mere possibility that certain behaviour may restrict competition. Contrariwise, the fact that an exclusionary effect appears more likely than not is simply not enough" (para.117). AG Wahl further make clear that theoretical risks of exclusionary effects cannot be accepted despite the Commission's tendency to do so: "*the threshold for the application of the prohibition of abuse laid down in Article 102 TFEU [cannot] be lowered to such an extent as to become virtually non-existent. That would be the case if the degree of likelihood required for ascertaining that the impugned conduct amounts to an abuse of a dominant position was nothing more than the mere theoretical possibility of an exclusionary effect, as seems to be suggested by the Commission. If such a low level of likelihood were accepted, one would have to accept that EU competition law sanctions form, not anticompetitive effects*" (para.118). Consequently, the Court prevents the Commission to adopt precautionary measures towards firm conducts which can hypothetically be anticompetitive, otherwise the "*cost of error of such an approach would be unacceptably high due to over-inclusion*" (para.119). See Opinion of Advocate General Wahl, delivered on 20 October 2016, C-413/14 P *Intel Corporation Inc. European Commission*, ECLI:EU:C:2016:788.

⁸² See generally, José Luis da Cruz Vilaca, *The intensity of judicial review in complex economic matters – recent competition law judgments of the Court of Justice of the EU*, 6(2) J. ANTITRUST ENFORCEMENT 173, 188 (2018).

the ECJ will act in the near future as safeguarding economic principles (e.g. procedural and evidentiary rules, legal predictability, the importance of an economic approach over a structural approach) against the novel precautionary antitrust approach embraced by the European Commission and approved by the General Court.

In brief, the Commission's enforcement matches the core elements of the precautionary principle. This position is at odds with an uncertain digital world where firms essentially compete *for the market* rather than *in the market*. In practice, big digital platforms seem to lack "the quiet life" of monopolies, they invest massively in research and innovation. Nevertheless, the perceived reduction of consumer choice and the winner-takes-all structure attributed to network effects is perceived by the Commission as a threat of irreversible competitive risk. The precautionary principle has therefore already taken significant strides into European competition enforcement. It is foreseeable that this unfortunate trend will continue to strengthen as the proposals contained in digital reports are implemented.

II. DIGITAL REPORTS' PROPOSALS: THE BLOSSOMING OF PRECAUTIONARY ANTITRUST

The application of competition rules to digital markets and "multisided platforms" presents challenges for antitrust authorities because their business models depart from the traditional, one-sided markets prevalent when competition rules were designed. While there is consensus that competition rules are flexible enough to be enforced in the context of the digital economy,⁸³ calls to reform and reshape antitrust have

⁸³ See G7, COMMON UNDERSTANDING OF G7 COMPETITION AUTHORITIES ON COMPETITION AND THE DIGITAL ECONOMY, (2019), https://www.ftc.gov/system/files/attachments/press-releases/ftc-chairman-supports-common-understanding-g7-competition-authorities-competition-digital-economy/g7_common_understanding_7-5-19.pdf ("Competition law is flexible—it can and should adapt to the challenges posed by the digital economy without wholesale changes to its guiding principles and goals"); See also KATHRYN MCMAHON, COMPETITION LAW AND DEVELOPING ECONOMIES: BETWEEN 'INFORMED DIVERGENCE AND INTERNATIONAL CONVERGENCE' 236 (Ariel Ezrachi ed. Res. Handbook on Int'l Competition L. Oxford Univ. Press 2012) (noting "the open-textured nature of competition legislation" and its "malleability"); Andrea Nazzini, *The Foundations of European Union Competition Law: The Objective and*

*Portuese – European Competition Enforcement and the Digital Economy: The Birthplace of
Precautionary Antitrust*

emerged among competition agencies, think tanks, and politicians worldwide. The underlying premise for reform is that antitrust and competition policy has been unable to identify and remedy anticompetitive conduct in digital markets, and an alleged under-enforcement is the driving force supporting these calls for reform. The reflection by antitrust authorities of their role in digital markets started in 2018 and 2019 and materialized in a flurry of digital reports written or commissioned by the authorities.⁸⁴

Principles of Article 102, 1 OXFORD UNIV. PRESS (2011) (discussing “the open-textured concept of abuse” in Article 102 TFEU); Laura Philipps Sawyer, U.S. Antitrust Law and Policy in Historical Perspective, 1 (Harvard Business School Working Paper), 19, 110 (2019) (noting that “the key pieces of antitrust legislation in the United States—the Sherman Antitrust Act of 1890 and the Clayton Act of 1914—contain broad language that has afforded the courts wide latitude in interpreting and enforcing the law”).

⁸⁴ JOINT MEMORANDUM OF THE BELGIAN, DUTCH AND LUXEMBOURG COMPETITION AUTHORITIES ON CHALLENGES FACED BY COMPETITION AUTHORITIES IN A DIGITAL WORLD (2019), https://www.belgiancompetition.be/sites/default/files/content/download/files/bma_acm_cdld.joint_memorandum_191002.pdf; JAPAN FAIR TRADE COMM’N., REPORT REGARDING TRADE PRACTICES ON DIGITAL PLATFORMS (2019), <https://www.jftc.go.jp/en/pressreleases/yearly-2019/October/191031.html>; MEXICAN COMPETITION AUTHORITY (COFECE), RETHINKING COMPETITION IN THE DIGITAL ECONOMY (2018), https://www.cofece.mx/wp-content/uploads/2018/03/EC-EconomiaDigital_web_ENG_letter.pdf; IT. COMPETITION AUTHORITY (AGCM), BIG DATA INTERIM REPORT IN THE CONTEXT OF THE JOINT INQUIRY ON ‘BIG DATA’ (2018), <https://www.agcom.it/documents/10179/10875949/Allegato+4-9-2018/f9befcb1-4706-4daa-ad38-c0d767add5fd?version=1.0>; STIGLER COMM. ON DIG PLATFORMS STIGLER CTR., FINAL REPORT (2019), <https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf>; AUSTL. COMPETITION & CONSUMER COMM’N, DIGITAL PLATFORMS INQUIRY FINAL REPORT (2019), <https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>; BRICS COMPETITION LAW AND POLICY CENTRE, DIGITAL ERA COMPETITION: A BRICS VIEW, (2019), <http://bricscompetition.org/upload/iblock/6a1/brics%20book%20full.pdf>; COMPETITION AUTHORITIES WORKING GROUP ON DIG. ECON., BRICS IN THE DIGITAL ECONOMY: COMPETITION POLICY IN PRACTICE 1ST REPORT (2019), http://www.cade.gov.br/acesso-a-informacao/publicacoes-institucionais/brics_report.pdf; COMPETITION BUREAU CAN., BIG DATA AND INNOVATION: KEY THEMES FOR COMPETITION POLICY IN CANADA, (2018), [https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/vwapj/CB-Report-BigData-Eng.pdf/\\$file/CB-Report-BigData-Eng.pdf](https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/vwapj/CB-Report-BigData-Eng.pdf/$file/CB-Report-BigData-Eng.pdf); AUTORITE DE LA CONCURRENCE AND BUNDESKARTELLAMT, ALGORITHMS AND COMPETITION, (2019), https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Berichte/Algorithms_and_Competition_Working-Paper.pdf?__blob=publicationFile&v=5; OECD, RETHINKING ANTITRUST TOOLS FOR MULTI-SIDED PLATFORMS (2018), <https://www.oecd.org/daf/competition/rethinking-antitrust-tools-for-multi-sided-platforms.htm>; DIG. COMPETITION EXPERT PANEL, UNLOCKING DIGITAL COMPETITION, UK (2019), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf [hereinafter FURMAN REPORT]; COMPETITION & MARKETS AUTHORITY, ONLINE PLATFORMS AND DIGITAL ADVERTISING, MARKET STUDY INTERIM REPORT (2019), https://assets.publishing.service.gov.uk/media/5dfa0580ed915d0933009761/Interim_report.pdf; BUNDESKARTELLAMT, MARKET POWER OF PLATFORMS AND NETWORKS, (2016), <https://www.>

The reports purport to give a better understanding of digital markets, identify market failures, and propose *ex-ante* regulatory or *ex-post* market interventions to address those market failures. This section analyzes the main proposals contained in the European digital reports, their presumptions, and underlying philosophy. What results is that the proposals epitomize a precautionary approach to antitrust enforcement in digital markets.

A. DG-Comp Report

The report commissioned by the European Commission's Directorate General for Competition (DG-Comp Report):⁸⁵ (i) exhibits a hazardous inversion of the burden of proof, and a lowering of the standard of proof for conduct by large digital platforms; (ii) suggests the expansion of competition rules beyond consumer welfare objectives to encompass other public policy considerations; and (iii) calls for *ex-ante* market interventions through regulation. We find the DG-Comp Report calls for more vigorous antitrust enforcement and regulation, expressly recommends inverting the traditional error cost framework, and unduly embraces a precautionary approach.

The DG-Comp Report opens by announcing that strong economies of scope due

bundeskartellamt.de/SharedDocs/Publikation/EN/Berichte/Think-Tank-Bericht-Langfassung.pdf?__blob=publicationFile&v=2; GER. MINISTRY OF ECON. AFFAIRS, DIG. PLATFORMS, DIGITAL REGULATORY POLICY FOR GROWTH, INNOVATION, COMPETITION AND PARTICIPATION, (2017), https://www.bmwi.de/Redaktion/EN/Publikationen/white-paper.pdf?__blob=publicationFile&v=2; GER. MINISTRY OF ECON. AFFAIRS, COMM'N COMPETITION LAW 4.0', A NEW COMPETITION FRAMEWORK FOR THE DIGITAL ECONOMY (2019), https://www.bmwi.de/Redaktion/EN/Publikationen/Wirtschaft/a-new-competition-framework-for-the-digital-economy.pdf?__blob=publicationFile&v=3; GER. MINISTRY OF ECON. AFFAIRS, MODERNISING THE LAW ON ABUSE OF MARKET POWER, (2018), https://www.bmwi.de/Redaktion/DE/Downloads/Studien/modernisierung-der-missbrauchsaufsicht-fuer-marktmaechtige-unternehmen-zusammenfassung-englisch.pdf?__blob=publicationFile&v=3; UNCTAD, THE UNCTAD, 'NEW' DIGITAL ECONOMY AND DEVELOPMENT, 8 TECHNICAL NOTES ON ICT FOR DEVELOPMENT (2017), https://unctad.org/en/PublicationsLibrary/tn_unctad_ict4d08_en.pdf.

⁸⁵ DIRECTORATE-GENERAL FOR COMPETITION, EUR.COMM 'N, COMPETITION POLICY FOR THE DIGITAL ERA (2019), <https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf> [hereinafter DG-COMP REPORT].

to “extreme returns to scale”, “network externalities,” and the “role of big data” give large incumbents in digital markets a competitive advantage making them difficult to dislodge.⁸⁶ This conclusion is followed by a recognition that there is “*little empirical evidence of the efficiency cost*” produced by the difficulty of dislodging incumbents.⁸⁷ Despite this lack of evidence, the authors vouch for a “*vigorous competition policy enforcement*” by adjusting key aspects of EU competition rules.⁸⁸ The report concludes that there is no need to rethink the goals of competition policy, while proposing changes, that if adopted, would shift competition enforcement away from the consumer welfare standard and towards other social, political, and protectionist goals.

1. A Precautionary Shift of the Burden of Proof

In the DG-Comp Report, the consumer welfare standard is disregarded to the point that normal commercial practices employed by big platforms are forbidden despite the absence of consumer harm.⁸⁹ Big digital platforms are assumed “dominant” and may be found guilty unless they are able to prove their behavior creates efficiencies. This precautionary inversion of presumptions and the burden of proof weakens the rule of law as a matter of principle.⁹⁰ It also weakens the rule of law as matter of practice because the disparate treatment between allegedly dominant digital platforms and other dominant companies is arbitrary.⁹¹

⁸⁶ *Id.* at 3.

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ DG-COMP REPORT, *supra* note 85, at 40 *et seq.*

⁹⁰ *Id.* at 42.

⁹¹ Furthermore, this suggestion has little chance to be compliant with general principles of EU law as it runs counter the settled case law of the Court of Justice as recently confirmed on the 28th of November 2019 in C-593/18 P, ABB Ltd and ABB AB v. European Commission, EU:C:2019:1027, where the Court partially annulled a Commission Decision of April 2, 2014 and set aside a judgement of the General Court upholding the Commission Decision because the General Court “relied on an unsubstantiated presumption in that regard, while leaving it to the appellants to rebut that presumption in respect of those accessories. In those circumstances, it must be held that the General Court failed to have regard to the evidential requirements .

Even more ambitiously, the DG-Comp Report recommends a radical change to the traditional and well accepted error cost framework⁹² according to which false positives (i.e. wrongful convictions) are more costly than false negatives (i.e. wrongful absolutions) because self-correction mechanisms mitigate only false negatives⁹³ Not only is the burden of proof inverted (*i.e.* guilty until proven innocent), but the standard of proof is lowered (*i.e.* guilty for previously minimal or unproven harm).⁹⁴ This two-pronged relaxation of

. . . necessary to prove the competition infringement; *see also* C-413/14 P (2017) Intel Corporation Inc. v European Commission, ECLI:EU:C:2017:632, where the Court has also set aside a General Court's judgement because the Court clarified that when an "undertaking has not produced alleged foreclosure effects . . . the Commission is not only required to analyse, first, the extent of the undertaking's dominant position on the relevant market and, secondly, the share of the market covered by the challenged practice, as well as the conditions and arrangements for granting the rebates in question, their duration and their amount; it is also required to assess the possible existence of a strategy aiming to exclude competitors that are at least as efficient as the dominant undertaking from the market . . ." But in the present case, "the General Court was required to examine all of Intel's arguments concerning that test." *Id.* at 138-39, 146.

⁹² DG-COMP REPORT, *supra* note 85, at 50- 51.

⁹³ *See, e.g.*, RICHARD A. POSNER, ANTITRUST LAW, (2nd ed. 2001); C. Frederick Beckner III & Steven C. Salop, *Decision Theory and Antitrust Rules*, 67 ANTITRUST L.J. 41 (1999); Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1 (1984); David S. Evans & A. Jorge Padilla, *Designing Antitrust Rules for Assessing Unilateral Practices: A Neo-Chicago Approach*, 72 U. CHI. L. REV. 73 (2005); Luke Froeb et al., *Vertical antitrust policy as a problem of inference*, 23 INT'L J. INDUS. ORG. 639 (2005); Keith N. Hylton & Michael Salinger, *Tying Law and Policy: A Decision-Theoretic Approach*, 69 ANTITRUST L.J. 469 (2001); Geoffrey A. Manne & Joshua D. Wright, *Innovation and the Limits of Antitrust*, 6 J. COMPETITION L. & ECON. 153 (2010). On the distinction but interrelatedness between burden of proof and standard of proof *see* Opinion of Advocate General Kokott in C-8/08, T-Mobile, EU:C:2009:110, at 60 ("the standard of proof determines the requirements which must be satisfied for facts to be regarded as proven. It must be distinguished from the burden of proof. The burden of proof determines, first, which party must put forward the facts and, where necessary, adduce the related evidence (. . . also known as the evidential burden); second, the allocation of that burden determines which party bears the risk of facts remaining unresolved or allegations unproven . . ."). *Id.*

⁹⁴ Lowering the standard of proof and shifting the burden of proof to the defendant are highly "questionable" both as a matter of principle and given the absence of economic consensus with respect to the net competitive effects of digital platforms' specific behaviors. Indeed, Kalintiri rightly asserts that "reducing the Commission's legal burden to an obligation to merely establish the anticompetitive nature or effects of the conduct in question is prone to pave the way for an expansive construction of the scope of Article 101(1) TFEU and increase the risk of over-enforcement. This risk will not be as high where there is broad consensus in economic theory that the conduct at hand rarely generates efficiencies, such as is, for instance, the case with cartels. Nevertheless, the danger of over-enforcement will be more than present in the case of agreements or concerted practices with a good deal of both anticompetitive and procompetitive aspects. Vertical agreements are such an example . . . If consideration of Article 101(3) TFEU is necessary in this case, placing the burden of proof thereof on the defendant undertakings becomes at least questionable."

the traditional theory of harm reflects a bias towards false positives in digital markets despite the abundant evidence of the negative impacts of false positives.⁹⁵

By placing the burden of proof on the allegedly dominant firm to justify normal commercial practices, the recommended measures protect competitors rather than competition.⁹⁶ The recommendations include mandating data portability and interoperability to allow for multihoming, switching, and the provision of complementary services within the platform.⁹⁷ The authors state that if the platform meets the “essential facilities” threshold, platforms must not engage in self-preferencing.⁹⁸ Further, even below this threshold, the authors suggest that self-preferencing by “dominant” platforms should be anticompetitive in the absence of a procompetitive justification.⁹⁹ Finally, self-preferencing, seems to be reprehensible only when done by platforms, disregarding that it is a normal commercial practice by vertically integrated firms.

Importantly, the authors label large platforms as ‘regulators’ of the interactions¹⁰⁰

See Andriani Kalintiri, *The Allocation of the Legal Burden of Proof in Article 101 TFEU Cases: A ‘Clear’ Rule with Not-So-Clear Implications* 34(1) 1 YEARBOOK EUR. L. 232, 241-42 (2015).

⁹⁵ See e.g. Easterbrook, *supra* note 93; see also Geoffrey Manne, *Error Costs in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁹⁶ Contrary to this proposition, traditionally the party who bears the burden of proof also bears the burden of producing the evidence. See e.g. C-185/95 P *Baustahlgewebe v Commission*, 1998 ECR I-8417 58; T-141/08, *E.ON Energie AG v Commission*, 2010 ECR II-5761 48. Thus, following the authors’ suggestion, an absence of, or limited, data portability will suffice to demonstrate an abuse without the need to produce evidence of harm to end-consumers.

⁹⁷ DG-COMP REPORT, *supra* note 85, at 57 *et seq.*

⁹⁸ *Id.* at 66.

⁹⁹ *Id.* at 66- 67 (“In cases of vertically integrated dominant digital platforms in markets with particularly high barriers to entry, and where the platform serves as an intermediation infrastructure of particular relevance, we propose that, to the extent that the platform performs a regulatory function as described above, it should bear the burden of proving that self-preferencing has no long-run exclusionary effects on product markets. The dominant platform would then need to prove either the absence of adverse effects on competition or an overriding efficiency rationale.”).

¹⁰⁰ DG-COMP REPORT, *supra* note 85, at 60 *et seq.*

that occur in their platforms when the platforms have adopted ‘pervasive rules’ regarding: (i) design; (ii) their relation with consumers; and (iii) interactions between users.¹⁰¹ The authors consider that given this “rule-setting” element, platforms should be scrutinized with no lesser a standard than the one developed under Article 101 TFEU, thereby applying the “by object” standard of collusive practices to potential abuses of dominance which are analyzed according to their “effects”.¹⁰²

Finally, the authors suggest revisiting substantive theories of harm for mergers to address concerns stemming from the acquisition by a dominant company of a “target with low turnover but a larger and/or fast-growing user base and high future market potential”.¹⁰³ The report frames its concerns in what they describe as a “*circumscribed set of circumstances*” in a market with a “high degree of concentration and high barriers to entry, resulting, inter alia, from strong positive network effects, possibly reinforced by data-driven feedback loops.”¹⁰⁴ For such cases, the acquisition of a startup may “reduce the prospect of independent decentralized innovation.”¹⁰⁵ While the report expressly states tech acquisitions are not “killer acquisitions,”¹⁰⁶ it implicitly attributes the mentioned set of circumstances by default to any large digital platform.¹⁰⁷ The report invites suspicion towards virtually any acquisition by a digital platform, regardless of the financial benefit conferred to the sellers of the startup (and its effect on innovation) or the increase in consumer welfare, under the premise that they impede entry.¹⁰⁸ This presumption ignores both the possible procompetitive effects of mergers as well as

¹⁰¹ *Id.* at 61.

¹⁰² *Id.* at 63.

¹⁰³ *Id.* at 116 *et seq.*

¹⁰⁴ *Id.* at 112.

¹⁰⁵ *Id.* at 113.

¹⁰⁶ *Id.* at 117.

¹⁰⁷ *Id.* at 110 *et seq.*

¹⁰⁸ *Id.* at 117 *et seq.*

competition between platforms. The explicit goal of scrutinizing and/or blocking these transactions and analyzing them under this presumption is to “minimize ‘false negatives.’”¹⁰⁹ With a suggestion to alter the theory of consumer harm, the burden would then fall on the notifying parties to provide evidence of offsetting merger-specific efficiencies for the acquired “nascent” technology which, by definition, has yet to deliver market efficiencies.

2. Widening the Scope of Competition Rules

The DG-Comp Report calls for giving less weight to market definition, in lieu of anticompetitive effects and theories of harm.¹¹⁰ At the same time, the authors propose the adoption of “*ecosystem-specific aftermarkets*”¹¹¹ where the platform’s proprietary ecosystem is considered to be the relevant market. This automatically makes firms a monopoly of their proprietary services.¹¹² Replacing market definition with the proposed “ecosystem” definition implicitly suggests that market definitions should be drawn to fit newer theories of (undocumented) harm.

The report recommends market power be assessed in the context of behavioral economics and within the tailor-made concept of “*unavoidable trading partner*” or “*intermediation power*” seemingly applicable only to digital companies.¹¹³ This proposal directly invites confusion between competition and consumer protection policy.¹¹⁴ While

¹⁰⁹ *Id.* at 124. This suggestion also ignores ¶ 29 of the 2004 Merger Regulation which explicitly refers to the need “to take account of any substantiated and likely efficiencies.” See Council Regulation (EC) N°139/2004, On the control of concentrations between undertakings 2004 L24/1.

¹¹⁰ *Id.* at 11, 42 *et seq.*

¹¹¹ *Id.*

¹¹² See Google Android Decision, *supra* note 48. The Commission found that Google’s app store (Google Play Store) accounted for more than 90% of apps downloaded on Google Android. Thus, Google’s app store, as a proprietary service owned by Google, was considered evidence of the high market shares in the market of Google Android, separated from the wider market of operating systems including Apple’s iOS.

¹¹³ *Id.* at 4, 48 *et seq.*

¹¹⁴ See Mark Armstong, *Interactions between Competition and Consumer Policy*, 4(1) COMPETITION POL’Y INT’L. (2008), <https://discovery.ucl.ac.uk/id/eprint/7634/1/7634.pdf> (explaining the differences and need for a clear

consumer protection is aimed at preventing deception, unfairness, and consumer choice in individual transactions; competition laws promote economic efficiency and long-term consumer welfare.¹¹⁵

Further, the report posits the mere possession of data, unavailable to other competitors, is evidence of dominance, and the refusal to grant access or supply such data to competitors an abuse of the alleged dominance. This reveals a practice of prematurely condemning potentially procompetitive or competitively neutral practices¹¹⁶ as well as a shift from an evidence based standard.¹¹⁷ Importing consumer protection goals into antitrust analysis risks weakening competition policy by introducing public policy considerations and tradeoffs that depart from the consumer welfare standard and make it subject to the uncertainties of political decision-making. Both scholars and national competition courts have stressed that antitrust liability should not be extended to privacy violations, nor should an abuse of dominance be presumed merely because an allegedly dominant company infringes a privacy rule.¹¹⁸

The authors propose that data access and data interoperability *can and should* be mandated under Article 102 TFEU and applied to ‘competitively essential’ data, leaving

distinction between consumer protection and competition policy).

¹¹⁵ See OECD, ROUNDTABLE, THE INTERFACE BETWEEN COMPETITION AND CONSUMER POLICIES, 9 (2008), <http://www.oecd.org/regreform/sectors/40898016.pdf>.

¹¹⁶ See Alexander Krzepicki, Joshua D. Wright & John M. Yun, *The Impulse to Condemn the Strange: Assessing Big Data in Antitrust*, COMPETITION POL’Y INT’L. (2020), <https://www.competitionpolicyinternational.com/the-impulse-to-condemn-the-strange-assessing-big-data-in-antitrust-2/>.

¹¹⁷ Joshua D. Wright & Douglas H. Ginsburg, *The Goals of Antitrust: Welfare Trumps Choice*, 81 FORDHAM L. REV. 2405 (2013), <https://ir.lawnet.fordham.edu/flr/vol81/iss5/9>.

¹¹⁸ See Maureen K. Ohlhausen & Alexander P. Okuliar, *Competition, Consumer Protection, and the Right [Approach] to Privacy*, 80 ANTITRUST L.J. 121, at 155 (2015); https://www.ftc.gov/system/files/documents/public_statements/686541/ohlhausenokuliaralj.pdf; See OLG Düsseldorf, VI-Kart 1/19 (V) (August 26, 2019); See Giuseppe Colangelo, *Facebook and the Bundeskartellamt’s Winter of Discontent*, COMPETITION POL’Y INT’L (Sept. 23, 2019), <https://www.competitionpolicyinternational.com/facebook-and-bundeskartellamts-winter-of-discontent/> (discussing both the FCO and the decision by the Higher Regional Court of Düsseldorf).

the complex technical questions of what data meets this requirement for competition authorities to determine.¹¹⁹ The authors further announce that because “ensuring a frictionless data interoperability on an ongoing basis” may surpass the capacity of competition authorities, sectoral regulation mandating data access and interoperability should be introduced.¹²⁰ By expressly proposing measures that are, by definition, regulatory (i.e. requiring technical expertise pertaining to sectoral regulators) under Article 102 TFEU, the authors advocate for a shift to *ex-ante* precautionary interventions in competition enforcement.¹²¹

The authors propose that competition law (as *ex-post* liability) must be seen as a “*complement*” to the regulatory framework, so that *ex-ante* regulations of the digital economy appear necessary to tackle the perceived market failures embodied by network effects.¹²² The precautionary recommendations to intervene *ex-ante* overlook the positive effects of network externalities focusing only on negative outcomes.¹²³ Indeed, this recommendation assumes that network effects are market failures instead of market features, and thus they should be addressed through *ex-ante* interventions.¹²⁴

Finally, the authors take a static approach and consider it equally important to

¹¹⁹ DG-COMP REPORT, *supra* note 85, at 74 (“Again, we propose to be careful here: it is necessary to distinguish between different forms of data, levels of data access, and use cases. In several settings, data access will not be indispensable to compete, and public authorities should then refrain from intervention. In other settings, however, duties to ensure data access—and possibly “data interoperability”—may have to be imposed.”).

¹²⁰ *Id.* at 73.

¹²¹ *Id.*

¹²² *Id.* at 52 *et seq.*

¹²³ See Michael L. Katz and Carl Shapiro, *Network Effects, Competition, and Compatibility*, 75 AM ECON. REV. 424, 424 (1985); see also Stan J. Liebowitz & Stephen E. Margolis, *Network Externalities: An Uncommon Tragedy*, J. ECON. PERSP. 133, 135 (1994) (making the distinction between “network effects” and network “externalities” and stating a market may have network effects without necessarily presenting a market failure or network externality).

¹²⁴ For a detailed discussion See John M. Yun, *Does Antitrust Have Digital Blind Spots?* 20(1) GEO. MASON L. & ECON. (2020), <https://ssrn.com/abstract=3593467>.

protect competition *on the market* as competition *for the market*.¹²⁵ The authors argue “any practice aimed at protecting investment by a dominant platform should be limited and well-targeted.”¹²⁶ This unwarranted proposition justifies banning “wide” (i.e. no price differentiation between platforms) and “narrow” (i.e. no lower prices on sellers’ websites) most-favored nation (“pricing parity provisions” or “MFN”) clauses when platform competition is deemed “weak.”¹²⁷ This proposition seems to widely ignore that innovation markets are better understood under Schumpeterian dynamic efficiency where value is introduced by new products and processes.¹²⁸ This approach also discards *prima facie* the possibility that other sales channels may constitute substitutes to platform sales.¹²⁹ This approach also has the effect of inverting the traditional presumption, and treating vertical restraints as restrictions by object or, at least, as inherently suspect conduct.

Overall, the DG-Comp Report epitomizes underlying heightened suspicions towards digital platforms, especially those deemed “dominant” or which constitute an “unavoidable trading partner.” Most recommendations stem from the unfounded assertion that network effects in platforms result in monopolies or dominant companies benefiting from high barriers to entry due to switching costs.¹³⁰ This in turn invites the conclusion that “dominant” platforms have incentives to engage in anticompetitive behavior. To

¹²⁵ DG-COMP REPORT, *supra* note 85, at 54 *et seq.*

¹²⁶ *Id.* However, the very appropriability of the investments are crucial to generate and incentivize innovation. See David J. Teece, *Profiting from Innovation in the Digital Economy: Standards, Complementary Assets, and Business Models in the Wireless World*, 47(8) RES. POL’Y, 1367, 1383 (noting that “policy makers and the courts need to be keenly aware of the appropriability challenges faced by the developers of enabling technology. Otherwise, society will deny itself the benefits of critical inventions and innovations”).

¹²⁷ DG-COMP REPORT, *supra* note 85, at 54 *et seq.*

¹²⁸ See J. Gregory Sidak & David J. Teece, *Dynamic Competition in Antitrust Law*, 5 J.C.I. & E. 4, 582 (2009); David J. Teece, *Dynamic Capabilities: Routines Versus Entrepreneurial Action*, 49(8) J. MGMT. STUD. 1395, 1401 (2012); Constance E. Helfat & Ruth S. Raubitschek, *Dynamic and Integrative Capabilities for Profiting From Innovation in Digital Platform-Based Ecosystems*, 47(8) RES. POL’Y 1391, 1399 (2018).

¹²⁹ See Pinar Akman & Daniel Sokol, *Online RPM and MFN Under Antitrust Law and Economics*, 50 REV. IND. ORG. 50, 133, 151 (2017), <https://doi.org/10.1007>.

¹³⁰ See Daniel L. Rubinfeld & Michal S. Gal, *Access Barrier to Big Data*, 59 ARIZ. L. REV. 339 (2017).

tackle these issues, the authors recommend a revolutionary U-turn from traditional legal and economic analysis of competition law: the law should be twisted so that the burden of proof is inverted¹³¹ and the standard of proof is lowered.¹³² This inversion and lowering of legal standards alter not only the procedural aspects of competition law, but more dramatically, substantive competition law.¹³³ Furthermore, it expands competition policy and enforcement to encompass the subject matter of sectoral regulations, such as *e.g.* data access, interoperability and portability, which are portrayed as a new form of abuse under Article 102 TFEU.

Importantly, the report calls for severely questioning the well accepted consumer welfare standard and principles of antitrust economics in the context of digital markets. Not only is evidence of consumer harm no longer required (or “*documented*”) to sanction business conduct,¹³⁴ but the implicit requirement of protecting competitors’ entry would

¹³¹ The legal maxim *ei incumbit probatio qui dicit non qui negat* according to which “he or she who asserts a fact must prove it” remains a fundamental legal principle associated with the general presumption of innocence. See Andriani Kalintiri, *The Allocation of the Legal Burden of Proof in Article 101 TFEU Cases: A ‘Clear’ Rule with Not-So-Clear Implications*, 34(1) YEARBOOK EUR. L., 232, 256 (2015) (questioning the compatibility of legal burden on the defendant undertakings “with the evidential prescriptions of the presumption of innocence that according to settled case law applies to infringement competition proceedings”); Sibony & Barbier de la Serre, *Charge de La Preuve et Theorie du Controle en Droit Communautaire de la Concurrence: Pour un Changement de Perspective*, 43 REVUE TRIMESTRIELLE DE DROIT EUROPEEN, 205, 217–18 (2007); David Bailey, *Presumptions in EU Competition Law* (2010) 31 EUR. COMPETITION L. REV., 362, 362 (2010).

¹³² On the illegitimacy of the hazardous shift the burden of proof in law see generally Jacques Kokott, *The Burden of Proof in Comparative and International Human Rights Law: Civil and Common Law*, KLUWER INT’L L. (1998); Douglas Walton, *Is there a Burden of Questioning?* 11 ARTIFICIAL INTELLIGENCE & L., 1, 43 (2003); Frans Van Eemeren & Peter Houtlosser, *A Pragmatic View of the Burden of Proof*, 8 ARGUMENTATION LIBRARY (Springer, Dordrecht Eds. 2003), https://doi.org/10.1007/978-94-007-1078-8_10; Christina Volpin *The Ball is in Your Court: Evidential Burden of Proof and the Proof-Proximity in EU Competition Law*, 51 COMMON MKT. L. REV. 1159 (2014).

¹³³ See C-411/15 P, *Timab Industrie and CFPR v Commission*, 2017 EU:C:2017:11, 58; Joined Cases C-239/11 P, C-489/11 P, and C-498/11 P, *Siemens AG, Mitsubishi Electric Corp and Toshiba Corp v Commission*, 2013 130; Joined Cases C-403/ 04 P and C-405/04 P, *Sumitomo Metal Industries v Commission*, 2007 ECR I-729, 39, 40. On the modification of the burden of proof as a matter of substance, see LAURA KHOURY, *UNCERTAIN CAUSATION IN MEDICAL LIABILITY* 13 (Hart Publishing Eds. 2006) (noticing that “the incidence of the burden of proof is a question of substantive law.”).

¹³⁴ This amounts to the maxim *probatio diabolica* providing that parties should not be forced to prove “something that cannot be proved or something which can be proved only with the utmost difficulty.” The

de facto apply essential facilities doctrine to key platforms or important ecosystems. Both legal and economic suggestions reveal an inept cautionary tale calling for precautionary *ex-ante* and *ex-post* interventions tailor-made for digital markets. The Commission has embraced this concerning view in its subsequent thinking and practice.¹³⁵

B. The UK Furman Report

The report Commissioned by the UK Chancellor the Exchequer and Secretary of State for Business, Energy and Industrial Strategy (the Furman Report)¹³⁶ is the work of an expert panel tasked with considering potential competition opportunities and challenges brought by the digital economy and potentially recommending necessary changes.¹³⁷ Specifically, the report considers (i) the emergence of a small number of large players in digital markets (such as social media, e-commerce, search, and advertisement); (ii) the appropriate approach to merger control and conduct investigations; (iii) opportunities to enhance competition, increase business innovation and expand consumer choice; and (iv) how to assess the consumer impact of “zero priced” services.”¹³⁸

The Furman Report starts with the general assertion that competition for the market cannot be counted on, by itself, to solve the problems associated with “tipping

principle of proportionality applied to the burden of proof imposes the obligation on defendants to provide evidence against undocumented harm. *See generally* Tridimas, *The General Principles of EU Law* 2nd Edition, OXFORD UNIV. PRESS 136 (2006); Andriani Kalintiri, *The Allocation of the Legal Burden of Proof in Article 101 TFEU Cases: A ‘Clear’ Rule with Not-So-Clear Implications*, 34(1) YEARBOOK OF EUR. L. 232, 235 (2015).

¹³⁵ See Emily Craig, *Vestager considers shifting burden of proof for big tech*, GLOBAL COMPETITION REV. (2019), <https://globalcompetitionreview.com/article/1210348/vestager-considers-shifting-burden-of-proof-for-big-tech>; COMPETITION POL’Y INT’L, EU: Vestager considers toughening ‘burden of proof’ for Big Tech., (Oct. 30, 2019), <https://www.competitionpolicyinternational.com/eu-vestager-considers-toughening-burden-of-proof-for-big-tech/>;

¹³⁶ FURMAN REPORT, *supra* note 84.

¹³⁷ *Id.* at 3.

¹³⁸ *Id.*

markets” and “winner-takes-most” effects allegedly inherent in digital markets.¹³⁹ It also asserts that “potential dynamic costs of concentration outweigh any static benefits.”¹⁴⁰ These premises, for which no empirical evidence is presented, underline the report’s conclusions and recommendations.

The analysis of zero priced products/services is presented within different public policy objectives ranging from consumer protection to democracy.¹⁴¹ While the authors acknowledge that competition happens in different sides of the market, some facing consumers, others facing advertisers, when identifying risks they pare them down to consumer protection issues such as data privacy. As such, the report lacks any analysis, whether theoretical or empirical, of the potential risks and efficiencies associated with zero priced services. The authors point out that “with more competition consumers would have given up less in terms of privacy or might even have been paid for their data.”¹⁴² While it is fairly obvious that “zero priced” services do entail some form of consideration, whether it is consumer attention or data or any other,¹⁴³ that fact in and of itself does not inform whether that consideration is anticompetitive, i.e. exclusionary or, in very narrow circumstances, exploitative.¹⁴⁴ Moreover, the use of such hypothetical

¹³⁹ *Id.* at 4.

¹⁴⁰ *Id.* at 4.

¹⁴¹ *Id.* at 112 -17.

¹⁴² *Id.* at 4.

¹⁴³ See Gurkaynak, Gonenc and Uçtu, Esra & Acar, Anıl, *Applying the Dynamic Competition Approach to Zero-Priced Markets*, I DOUGLAS H. GINSBURG, AN ANTITRUST PROFESSOR ON THE BENCH - LIBER AMICORUM, 307, 310 (Charbit, Carolina Malhado & Yang Eds.) (2018), <https://ssrn.com/abstract=3149317>; see also the discussion of attention markets in John M. Yun, *Overview of Network Effects & Platforms in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

¹⁴⁴ While it is clear that Article 102(2)(a) TFEU, provide as an example of abuse the imposition of an unfair purchase or selling price or unfair conditions, and is capable of targeting exploitative conduct, there is a general consensus that competition enforcement should only be concerned with exclusionary conduct. As a general proposition, competition authorities should not establish themselves as price regulators. Even if a competition authority wishes to intervene to control prices, it is not clear how it would decide when a price is excessive or exploitative or that it would have the necessary expertise and resources to engage in that task. For this reason, these cases are seldom brought in the EU.

counterfactuals leads to uncertain alternative conclusions regarding an ideal market structure. The ideal counterfactual is even more stretched under the highly debated proposition that digital markets are highly concentrated, which in turn stems from the proposition that the proprietary ecosystem of the platform is the market, i.e. that they are monopolies by default. What results are proposals for tailor made prohibitions and regulations applicable only to Facebook, Google, Apple, Amazon, and Microsoft as dominant in the markets for social media, search services, mobile app downloads, and e-commerce respectively (with Microsoft providing some competition).¹⁴⁵

The most emphatic proposal in the Furman Report is the creation of a “*Digital Markets Unit*.”¹⁴⁶ Following this recommendation, and the 2018-2019 Competition and Markets Authority’s (CMA) Annual Report,¹⁴⁷ the “*Data, Technology and Analytics Unit*” (DaTA) unit was launched in 2019. DaTA is dedicated to support the CMA’s understanding of data and algorithms, materializing the authors’ *Strategic Recommendation D*, to monitor potential anticompetitive conduct in machine learning and in artificial intelligence.¹⁴⁸

Interestingly, the Furman Report recommends establishing a “*code of competitive conduct*” applicable to only certain companies.¹⁴⁹ Seemingly a soft law instrument, this conduct code would create an unlevelled playing field by apparently applying only to one industry or sector, i.e. digital companies, and regulating only “*particularly powerful*

¹⁴⁵ *Id.* at 31.

¹⁴⁶ See JOE KENNEDY ‘WHY INTERNET PLATFORMS DON’T NEED SPECIAL REGULATION’, INFORMATION TECHNOLOGY AND INNOVATION, FOUNDATION (ITIF) REPORT, 8 (analyzing the relevance of dedicated regulator for platforms).

¹⁴⁷ COMPETITION AND MARKETS AUTHORITY, 2018-2019 ANNUAL REPORT, <https://www.gov.uk/government/publications/cma-annual-report-and-accounts-2018-to-2019>.

¹⁴⁸ See COMPETITION AND MARKETS AUTHORITY, THE CMA’S DIGITAL MARKETS STRATEGY, 9 (2019), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/814709/cma_digital_strategy_2019.pdf.

¹⁴⁹ FURMAN REPORT, *supra* note 84, at 59, 64.

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Precautionary Antitrust*

companies.”¹⁵⁰ The targeted regulatory intervention would be aimed at addressing companies with “*strategic market status*.” This notion, which resembles the DG-Comp Report’s notion of “*unavoidable trading partner*”¹⁵¹ suggests a novel and highly controversial standard of dominance based on the role of platforms as intermediaries or “gatekeepers” in the market.¹⁵²

On other aspects, the Furman Report calls for greater data mobility and systems with open standards to increase competition, consumer choice, and data openness. At the same time, it highlights the “*Data Transfer Project*” (DTP) initiated by Apple, Facebook, Google, Microsoft and Twitter who “*believe portability and interoperability are central to innovation*.”¹⁵³

More perplexing is the emphasis on consumer choice rather than overall consumer

¹⁵⁰ *Id.* at 5 (noting that the unit will develop a code of conduct. The code will be applicable only to particularly powerful companies, this is, those deemed to have ‘strategic market status’, to avoid burdening smaller firms).

¹⁵¹ DG-COMP REPORT, *supra* note 85, at 48 *et seq.*

¹⁵² European Competition Commissioner Margrethe Vestager noted “the importance of monitoring data monopolies and internet gatekeepers that can choke off data access to rivals.” See Aoife White & Lenka Ponikelska, *Germany’s Facebook Order Will Be Studied by EU, Vestager Says*, BLOOMBERG NEWS (Feb. 8, 2019). Term coined by Karine Barzilai-Nahon, *Toward a theory of network gatekeeping: A framework for exploring information control* 59(9) J. AM. SOC’Y FOR INFO. SCI. & TECH. 1493 (2008); See Eleanox Fox, *Platforms, Power, and the Antitrust Challenge: A Modest Proposal to Narrow the U.S. – Europe Divide*, 98 NEB. L. REV., 297, 317 (2019) (Drawing a link between the perceived issue of gatekeepers and the need for platform neutrality when she argues that “in the case of a dominant platform that also hosts its own services on the platform, the gatekeeper has a conflict of interest. The FTC should seriously consider establishing a duty of dominant platforms to treat all firms that are rivals on the platform (including its own) neutrally.”); see also Emily Laidlaw, *A framework for identifying Internet information gatekeepers*, (2010) 24(3) INT’L REV. OF L., COMPUTERS & TECH. 263, 265; Natali Helberger, Katharina Kleinen-von Königslöw & Rob van der Noll, *Regulating the new information intermediaries as gatekeepers of information diversity*, (17)(6) Info 50 (2015); Schulz, W., Held, T. & Laudien, A., *Search engines as gatekeepers of public communication: analysis of the German framework applicable to internet search engines including media law and antitrust law*, 6(10) GERMAN L. J., 1419, 1433 (2005); Orla Lynskey, *Regulating ‘Platform Power’* (LSE Working Papers) 1/2017(2017); Laidlaw, E.B., *A framework for identifying Internet information gatekeepers*, 24(3) INT’L REV. OF L., COMPUTERS & TECH., 263, 276 (2010) (criticizing the “one-way approach of traditional gatekeeping theory” and noting that “a Web 2.0 world the gated are not static, but rather dynamic players in creating and managing the Internet environment.”).

¹⁵³ See DTP at <https://datatransferproject.dev/> ; see also, WHITE PAPER ON DATA TRANSFER PROJECT OVERVIEW AND FUNDAMENTALS (2018), <https://datatransferproject.dev/dtp-overview.pdf> .

welfare, despite declaring an adherence to the consumer welfare standard from which “there is no need to shift away (. . .).”¹⁵⁴ However, consumer choice is largely associated with the behavioral economics of consumer protection which are not in line and further contradict the consumer welfare standard.¹⁵⁵ In attempting to tackle both objectives, the Furman Report, like the DG-Comp Report, confuses and comingles competition policy (exclusively aimed at enhancing consumer welfare) with consumer protection policy (for which consumer choice can be an objective).

On merger review, the Furman Report recommends inverting the error cost framework in merger review not to err in favor of false negatives. This recommendation is based on the simple premise that “to date there have been no false positives in mergers involving major digital platforms because all of them have been permitted” while “it is likely some false negatives have occurred during this time.”¹⁵⁶ This is to say that simply because the CMA did not find any merger involving Amazon, Apple, Facebook, Google, and Microsoft, explicitly listed in the report to substantially lessen competition, the system necessarily is broken and must be fixed.¹⁵⁷ The proposed remedy includes both a shift in agency enforcement priorities as well as a legal amendment.¹⁵⁸

The CMA would further prioritize the scrutiny of mergers in digital markets and closely consider harm to innovation and impacts on potential competition in its case selection and assessment. Digital companies deemed to have a “strategic market status”

¹⁵⁴ FURMAN REPORT, *supra* note 84, at 12; *see also id.* at 88 (concluding that “the Panel therefore considers that UK competition policy should remain rooted in the consumer welfare standard as properly conceived, giving sufficient focus to non-price elements of competition, and to innovation in particular. Respondents to the call for evidence, in particular academics, generally agreed with this position.”).

¹⁵⁵ *See* Wright & Ginsburg, *supra* note 117. *A contrario*, *see* Neil W. Averitt and Robert H. Lande *Consumer Choice: The Practical Reason for Both Antitrust and Consumer Protection Law*, 10 LOY. CONSUMER L. REV. 44 (1997); *see* CMA LETTER ON DIGITAL COMPETITION, 19, 22 (2019) (highlighting consumer choice as one of the objectives of UK consumer protection policy).

¹⁵⁶ FURMAN REPORT, *supra* note 84, at 91.

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

would be required to notify the CMA of all intended acquisitions. This default notification system applicable solely to the five mentioned companies would *de facto* enforce a presumption of illegality for any acquisition, regardless of their entity and/or structure (*i.e.* vertical, horizontal, or conglomerate). This proposal not only creates an uneven playing field with other firms not deemed to enjoy a “*strategic market status*,” but it advocates for a turn back to largely abandoned structural presumptions¹⁵⁹ and to depart from the economics-based approach embraced by the Commission after the 2004 modernization reform.¹⁶⁰

The Furman Report states the merger control system should be amended. Although the authors openly claim that “*the goal of the policy changes is not more or less*

¹⁵⁹ In the EU, structural presumptions for merger control started with Case 6/72 Europemballage Corporation and Continental Can Company Inc v Commission 1973 ECR 215 (considering whether Article 102 TFEU prohibits acquisitions of firms by a dominant company); Council Regulation (EC) No4064/89 on the control of concentrations between undertakings 1989 O.J. L395/1; Council Regulation (EC) No1310/97 amending Regulation 4064/89 1997 O.J. L180/1; See Council Regulation (EC) No139/2004 on the control of concentration between undertakings 2004 O.J. L24/1, at Recital 32 (stating a merger may be presumed to be compatible with the internal market where the market share of the merging parties does not exceed 25 per cent); Guidelines on the assessment of horizontal mergers 2004 O.J. C31/5, 14 (stating “market shares and concentration levels provide useful first indications of the market structure and of the competitive importance of both the merging parties and their competitors”); Guidelines on the assessment of non-horizontal mergers 2008 O.J. C265/7 27 (stating “the Commission will use the above market share and HHI thresholds as an initial indicator of the absence of competition concerns. However, these thresholds do not give rise to a legal presumption”. . . .); CARLES E. MOSSO, INNOVATION IN EU MERGER CONTROL, REMARKS AT THE 66TH ABA SECTION OF ANTITRUST LAW SPRING MEETING (Apr. 12, 2018) (stating that “[...] economic principles do not establish an economic (nor legal) presumption that mergers necessarily reduce innovation and harm future competition in the absence of efficiencies.”). In the U.S., the use of the structural presumptions originates in *United States v. Philadelphia Nat. Bank*, where the Supreme Court held that any merger producing a firm that controls an “undue percentage share” of the market and that “results in a significant increase in the concentration of firms in that market” is “inherently likely to lessen competition substantially.” 374 U.S. 321, 362–63 (1963); see also *United States v. Von’s Grocery Co.*, 384 U.S. 270, 277–78 (1966); see also *F.T.C. v. Procter & Gamble Co.*, 386 U.S. 568, 577 (1967); United States Department of Justice Merger Guidelines (1968) which started a process of less reliance on structural presumptions; *United States v. Baker Hughes Inc.*, 908 F.2d 981, 984 (D.C. Cir. 1990) (stating that “evidence of market concentration simply provides a convenient starting point for a broader inquiry into future competitiveness”); U.S. Dep’t of Justice & Fed. Trade Comm’n, *Horizontal Merger Guidelines* (Aug. 19, 2010) (confining structural presumptions to a minimal role). See Michael G. Cowie & Paul T. Denis, *The Fall of Structural Evidence in FTC and DOJ Merger Review*, THE ANTITRUST SOURCE, 1-12 (2013).

¹⁶⁰ See Regulation 1/2003, O.J. 2003 L 1/1.

*enforcement but better enforcement,”*¹⁶¹ they paradoxically propose “*there has been underenforcement of digital mergers, both in the UK and globally. Remedying this underenforcement is not just a matter of greater focus by the enforcer, as it will also need to be assisted by legislative change.*”¹⁶²

On a precautionary approach similar to the DG-Comp Report but even more pervasive, the Furman Report invites a greater use of interim measures as appropriate *ex-ante* regulatory tools for antitrust enforcement.¹⁶³ Justified on the grounds of risks of underenforcement and the risks of irreversible harm to competition, interim measures would be adequate when “*antitrust cases may take years to resolve.*”¹⁶⁴ In a surprising departure from principles of due process, procedural fairness, and the rule of law, the Furman Report identifies an “undue delay” inherent in appeals processes as well as risks of underenforcement as reasons for “focusing appeals” on limited grounds for judicial review.¹⁶⁵ Even ignoring the blatant departure from procedural fairness principles, the argument regarding the risks of underenforcement is circular, because judicial proceedings are precisely aimed at ensuring enforcement is appropriate. As such, the argument contained in *Recommended action 12* proposing that judicial review should be limited to prevent underenforcement is, at a minimum, unconvincing.¹⁶⁶ The rule of law

¹⁶¹ FURMAN REPORT, *supra* note 84, at 84.

¹⁶² *Id.* at 91 (under the heading “Underenforcement in digital markets”). *See also Id.* at 95 (“There have also been increasing concerns about underenforcement of digital mergers during this period”); *Id.* at 97 (“The CMA’s Merger Assessment Guidelines should be updated to reflect the features and dynamics of modern digital markets, to improve effectiveness and address underenforcement in the sector”); *Id.* at 100 (“a clear basis to address the underenforcement in digital markets to date”); *Id.* at 107 (“to address any underenforcement of antitrust law by the CMA”).

¹⁶³ *Id.* at 104-05.

¹⁶⁴ *Id.* at 14.

¹⁶⁵ *Id.* at 14.

¹⁶⁶ For a wider judicial review once advocated by one of the authors of the FURMAN, *see* Marsden *Checks and balances: EU Competition law and the rule of law*, COMPETITION L. INT’L (2009), [https://www.biicl.org/files/4080_checks_and_balances_\(marsden\).pdf](https://www.biicl.org/files/4080_checks_and_balances_(marsden).pdf) (arguing that “[t]he limited standard of review is of course a deferential bow to the relevant agency’s expertise, the technical and

and the breadth of judicial review can hardly be questioned for the sake of facilitating a greater use of interim measures and a hastening of enforcement.¹⁶⁷

*C. Franco-German Working Paper on Algorithms and Competition*¹⁶⁸

The joint study by the Autorité de la concurrence and the Bundeskartellamt (FR-DE Algorithm Study)¹⁶⁹ addresses the specific phenomenon of algorithm-driven companies and the impact of their business strategies for antitrust enforcement. While

economic issues at hand, and its discretion. But it is not a full appeal; nor even judicial review . . . [i]t can be argued that in very complex economic cases, the CFI's limited standard of review leads it to rely too heavily on the findings of the Commission. There is also the problem that in the legal tradition of Continental Europe—which predominates at the EU Courts—'opinions' and agency findings can often end up being treated as if they are 'facts' . . . More could be opened up, and thereby provide greater oversight (..) [t]he reliance on more economics, and balancing tests like the rule of reason may be what allow EU competition law to better accord with the rule of law. This can only happen though if judges are themselves able and willing to undertake more rigorous evaluation, rather than rely on precedents that were never informed by economic analysis"). Equally, the OECD rightly noted that "the judiciary has two important functions in the implementation of competition policy: ensuring that procedural due process is observed and applying the underlying substantive principles of the competition law in a correct and consistent manner. Thus, courts bring economic policy under the rule of law." See OECD JUDICIAL ENFORCEMENT OF COMPETITION LAW. POLICY ROUNDTABLES. OECD/GD(97)200, at 10 (1996) <https://www.oecd.org/daf/competition/prosecutionandlawenforcement/1919985.pdf>. Therefore, complexity of economics cannot be used to justify limited judicial scrutiny, but rather it justifies extended judicial review of the economic reasoning with respect to the rule of law. See generally, Anne-Lise Sibony, *Le juge et le raisonnement économique en droit de la concurrence*, L.G.D.J. (2009); Aurelien Portuese, *Le principe d'efficience économique dans la jurisprudence européenne*, (PhD Thesis) Université Paris II Pantheon-Assas (2012), [https://docassas.u-paris2.fr/nuxeo/site/esupversions/c51d2b4b-4981-4c62-8531-285d0804dc05?](https://docassas.u-paris2.fr/nuxeo/site/esupversions/c51d2b4b-4981-4c62-8531-285d0804dc05?inline)
inline.

¹⁶⁷ See, Anne MacGregor & Bogdan Gecic, *Due Process in EU Competition Cases Following the Introduction of the New Best Practices Guidelines on Antitrust Proceedings*, 3(5) J. OF EUR. COMPETITION L. & PRACTICE, 425, 438 (explaining the importance to ensure due process and judicial review in competition cases); Ian S. Forrester, *A Challenge for Europe's Judges: The Review of Fines in Competition Cases*, 2 EUR. L. REV., 185, 207 (2011); Damien Gerard, *EU Antitrust Enforcement in 2025: Why wait? Full Appellate Jurisdiction, Now*, COMPETITION POL'Y INT'L ANTITRUST J. (2010); Koen Lenaerts, *Some Thoughts on Evidence and Procedure in European Community Competition Law*, 30(5), FORDHAM INT'L L.J. (2007); CLAUS-DIETER EHLERMANN & MEL MARQUIS, *THE EVALUATION OF EVIDENCE AND ITS JUDICIAL REVIEW IN COMPETITION CASES*, (Eur. Univ. Institute Hart Publishing, Oxford & Portland Eds. 2011).

¹⁶⁸ AUTORITÉ DE LA CONCURRENCE AND BUNDESKARTELLAMT, *ALGORITHMS AND COMPETITION*, (2019) (FR-DE ALGORITHM STUDY), https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Berichte/Algorithms_and_Competition_Working-Paper.pdf?__blob=publicationFile&v=5.

¹⁶⁹ *Id.* at 75.

taking due note that algorithmic collusion has yet to materialize,¹⁷⁰ this joint study recommends reconsidering the current exclusion of parallel behavior from the scope of Art. 101 TFEU to catch algorithmic parallel behavior.¹⁷¹ Responding to the precautionary request by Commissioner Vestager to ensure “antitrust compliance by design”¹⁷² (i.e. meaning “pricing algorithms need to be built in a way that doesn’t allow them to collude”),¹⁷³ the joint study states “competition authorities want to encourage companies to take precautions” since “companies need to think about how they could ensure antitrust compliance when they use pricing algorithms.”¹⁷⁴

This *ex-ante* approach creates incentives for companies to detrimentally err on the side of too much precaution. First, the use of algorithms is perceived as an element of market power. The study references the *Google Shopping* case restating that “the establishment of a fully-fledged general search engine requires significant investments in terms of time and resources,” in particular with regard to the “initial costs associated with the development of algorithms.” The degree of market power will depend on the scale/scope and on the availability of data deemed necessary for rivals to compete with the company owning the algorithm.¹⁷⁵ Second, the study suggests data ownership, in a context of a presumed lack of rivalry (understood in a static efficiency context, i.e. competition within the technology) increases entry barriers. Third, the study posits that the refusal to supply information relating to proprietary algorithms can be tantamount to an exclusionary

¹⁷⁰ *Id.* at 50-51.

¹⁷¹ *Id.* at 56, 60.

¹⁷² MARGARETHE VESTAGER, SPEECH AT THE BUNDESKARTELLAMT 18TH CONFERENCE ON COMPETITION, (Mar, 17, 2017), https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/bundeskartellamt-18th-conference-competition-berlin-16-march2017_en.

¹⁷³ *Id.*

¹⁷⁴ THE FRENCH AUTORITÉ DE LA CONCURRENCE AND THE GERMAN BUNDESKARTELLAMT, ALGORITHMS AND COMPETITION, at 59, https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Berichte/Algorithms_and_Competition_Working-Paper.pdf?__blob=publicationFile&v=5.

¹⁷⁵ *Id.* at 22.

abuse¹⁷⁶ under what is a *de facto* transposition of the essential facilities doctrine to the strategic use of algorithms.

*D. The OECD Report on Multi-Sided Platforms*¹⁷⁷

With a sharp set of proposals grounded on a rigorous economic analysis of antitrust framework applied to multi-sided platforms, the OECD Report achieves both the objective of addressing wide-ranging issues whilst being accessible, but also of drawing sensible normative conclusions as a path forward for a more robust antitrust framework applied to multi-sided platforms.

The key message on exclusionary conduct is that it should not be assumed to be harmless simply on the basis that it is exercised in a two-sided market. If anything, platform markets may provide particularly fertile ground for exclusionary behavior and merit greater scrutiny.¹⁷⁸ The inquiry must explore the impact on rivals' costs and the intensity of competition. Price cost tests should not be used in multi-sided markets and recoupment tests should be interpreted with care since recoupment may happen simultaneously.

On multi-sided platforms' efficiencies, where cross-platform network effects are strong, mergers of multi-sided platforms might be expected to generate efficiencies if they combine separate user bases and increase interoperability. Agencies should consider the scope for efficiency defenses in multi-sided markets. Focusing analysis on the magnitude and merger specificity of such effects, rather than their existence may therefore provide better analytical value for agencies. Operationally there may be advantages to running

¹⁷⁶ *Id.* at 23.

¹⁷⁷ OECD, RETHINKING ANTITRUST TOOLS FOR MULTI-SIDED PLATFORMS (2018), <https://www.oecd.org/daf/competition/rethinking-antitrust-tools-for-multi-sided-platforms.htm>.

For related sources, see OECD, DIGITAL ECONOMY, INNOVATION AND COMPETITION, <https://www.oecd.org/competition/digital-economy-innovation-and-competition.htm>.

¹⁷⁸ *Id.* at 5.

the competitive effects and efficiencies assessments as a single effects' assessment in those cases where the multi-sided nature of the market is undisputed.

The complexity of vertical restraints calls for specific attention by antitrust authorities because agreements in multi-sided markets may require more scrutiny from agencies than similar agreements in one-sided markets. When free riding poses a threat to the viability of the platform, there may be a significant scope for vertical restraints to generate efficiencies, although this may not be the case for other investments that might be viable as a result of the restraint. Noticeably, the report explicitly considers "*the strong cross-platform network effects*" by emphasizing that "*users are likely to switch away from platforms if sellers choose to delist*" from platforms imposing vertical restraints.¹⁷⁹ The Report wisely concludes advising agencies engage in empirical, evidenced-based antitrust analysis rather than rely on presumptions and theoretical frameworks to support *ex-ante* interventions.¹⁸⁰

E. Proposal to Amend the German Competition Law

The Federal Ministry of Economic Affairs and Energy (BMWi) presented a proposal to amend German competition law, the GWB Digitalization Act.¹⁸¹ Among its primary objectives are implementing the recommendations of two reports, Modernizing the Law on Abuse of Market Power¹⁸² and Competition Law 4.0. The proposal includes the addition of the concept of "intermediary power" to the list of considerations relevant to the assessment of dominance;¹⁸³ an amendment of the definition of abuse of dominance

¹⁷⁹ *Id.* at 28-29.

¹⁸⁰ *Id.* at 227.

¹⁸¹ See Draft Proposal for the 10th Amendment of *Gesetz gegen Wettbewerbsbeschränkungen* ("GWB"), German Competition Act (Oct. 7, 2019), https://www.bmwi.de/Redaktion/DE/Downloads/G/gwb-digitalisierung-sgesetz-referentenentwurf.pdf?__blob=publicationFile&v=10.

¹⁸² Heike Schweitzer et al., *Modernising the Law on Abuse of Market Power: Report for the Federal Ministry for Economic Affairs and Energy (Germany)* (Sep. 17, 2018), <https://ssrn.com/abstract=3250742>.

¹⁸³ See Draft Proposal, *supra* note 181, at § 18.3(b) ("When assessing the market position of a company that

to relax the requisite element of causality between a finding of abuse of dominance and alleged anticompetitive conduct; the addition of a section to account for companies “*with outstanding cross-market importance for competition*”;¹⁸⁴ provisions that categorize refusal to grant access to data, networks or other infrastructure as an abuse of dominance (reinvigorating the essential facilities doctrine);¹⁸⁵ and provisions that facilitate interventions to prevent markets from “tipping”, *i.e.*, the emergence of a dominant firm due to strong network effects.¹⁸⁶

This draft bill obviously constitutes the boldest move towards a return to strong structural and formalistic presumptions, and the creation of a heightened tailor-made legal standard. This proposal represents a strong move towards more *ex-ante*, sector-specific antitrust interventions.

*F. The G7 Common Understanding*¹⁸⁷

This very general document outlines the benefits of the digital economy on innovation and growth, proposes that the existing competition law frameworks are

acts as an intermediary in multi-sided markets; the importance of the intermediary services that this company provides regarding access to procurement- and output-markets is of particular relevance.”).

¹⁸⁴ See *id.* (“§ 19a Abusive behavior of companies with outstanding cross-market importance for competition: (1) The Bundeskartellamt can determine that a company, which to a significant extent operates in markets within the meaning of § 18 Paragraph 3a, is of outstanding cross-market importance for competition. . . . (2) The Bundeskartellamt in the case of a determination under paragraph 1 may prohibit the company from: 1. treating their own offers differently from those of competitors when mediating access to procurement- and output markets . . .”).

¹⁸⁵ See *id.* (“§ 19 is amended as follows: . . . b) Paragraph 2 number 4 is worded as follows: [(2) It is an abuse if a company with a dominant market position as a producer or a consumer of a specific good or commercial service:] 4. refuses to provide another company with this good or commercial service for a reasonable fee, including access to data, networks or other infrastructure facilities, and the provision is objectively necessary to operate in an upstream or downstream market, and the refusal threatens to eliminate effective competition in this market; unless the refusal is objectively justified.”).

¹⁸⁶ See *id.* at § 20 (3a) (“An unreasonable restriction within the meaning of paragraph 3 sentence 1 also exists if a company with superior market power in a market within the meaning of section 18 paragraph 3a hinders the independent achievement of positive network effects by competitors and, as a result, this gives rise to a serious concern that competition will be restricted to a not insignificant degree.”).

¹⁸⁷ G7, *supra* note 83.

flexible enough, and highlights the importance of competition advocacy and impact assessment, and the need for international cooperation.

Because of its flexible analytical framework, fact-based analysis, cross-sector application and technology-neutral nature, competition law can effectively apply to digital markets and to harmful anticompetitive behaviors emerging in the digital economy.¹⁸⁸ Concerns have been raised about whether the accumulation of large amounts of data by platforms can create barriers to entry or market power, especially when data is difficult to replicate. A case-by case, evidence-based approach is essential to properly address the most challenging elements of competition analysis in digital markets. The G7 leaders classically consider that the:

aggregation of data, in some circumstances, may create barriers to entry or enhance market power, but it does not necessarily have such a tendency, and in some instances can be procompetitive. Competition enforcers can evaluate data concerns based on the individual facts of a case to assess whether a firm's use of data benefits consumers or harms competition.¹⁸⁹

Calling for both competition impact assessment of policies and for greater international cooperation in that area, the G7 leaders fail to provide specific guidelines and to outline general proposals given the breadth of antitrust divergences across the G7 competition authorities with respect to their analysis of the digital economy.

G. Belgian, Dutch, and Luxembourg Joint Memorandum

This memorandum summarizes the findings of several digital platform reports including those of the UK and EU.¹⁹⁰ It recommends that DG Comp commission an economic study on merger control in the digital sector that builds on previous studies and analyzes past merger decisions and transactions that were not caught by the thresholds. They would also study which type of mergers are caught under the

¹⁸⁸ *Id.* at 5.

¹⁸⁹ *Id.* at 6.

¹⁹⁰ JOINT MEMORANDUM OF THE BELGIAN, DUTCH AND LUXEMBOURG COMPETITION AUTHORITIES, *supra* note 84.

jurisdictional thresholds that are not based on turnover, such as transaction-value based thresholds. For the acquisitions that were not subject to review by competition authorities (e.g, because the turnover threshold was not exceeded), whether plausible theories of harm, such as the ones proposed by the DG Comp Report, or efficiencies have developed. For the acquisitions reviewed by competition authorities, they would determine if competition authorities had access to sufficient information to investigate the relevant theories of harm and efficiencies. Based on their analysis, the authors would discuss policy options designed to address an alleged under enforcement of competition rules in the digital sector.

Further, the memorandum recommends competition authorities develop the ability and willingness to offer *ex-ante* guidance on specific issues. Competition authorities need to develop a case-by-case approach that would allow DG Comp and NCAs to have a less formal fast track commitment procedure as a development of the practice under Regulation 1/2003 or in line with the Notice on informal guidance. This constitutes an unattractive return to the system existing prior Regulation 1/2003, which was abandoned with the modernization of EU competition law.

Aligned with the Cremer and the Furman reports, the memorandum suggests introducing and reinvigorating *ex-ante* tools to prevent competition issues.¹⁹¹ These tools would facilitate the imposition of remedies by DG Comp and NCAs on dominant companies to prevent potential competition issues, instead of relying on *ex-post* enforcement. This overtly precautionary approach seems unpreoccupied with erring on overenforcement even if it comes at the expense of deterring innovation.

H. Italian Regulatory Authorities Report

On 30 May 2017, the Italian Competition Authority (AGCM), the Communications

¹⁹¹ *Id.* at 5.

Authority (AGCom), and the Data Protection Authority launched a joint inquiry to develop an understanding of the impact of Big Data on personal data protection, market regulation, consumer protection, and antitrust law.¹⁹² In July 2019, AGCM, AGCom, and the Data Protection Authority reached a common view on how to tackle these issues. This common view is developed through guidelines and 11 policy recommendations.

The final document that will gather the three Authorities' final reports is forthcoming. However, this preliminary inquiry already proposes the adoption of a new legal framework to address effective and transparent use of personal data. It identifies the emergence of new privacy and competition risks. Among these risks is the threat that the concentration of power—as a result of the commercial exploitation of data and algorithmic profiling—poses not only to the economy, but also to fundamental rights, competition, pluralism, and democracy.¹⁹³ By comingling competition and consumer protection policies, this assessment frames an unlimited number of public policy and political goals under antitrust, abandoning the consumer welfare standard and disregarding its importance.¹⁹⁴

The Report recommends strengthening international cooperation for the governance of Big Data. The AGCM has been part of several joint working groups and cooperation initiatives with respect to a better understanding of digital markets.¹⁹⁵ The Report advocates for a reduction of information asymmetries between digital corporations (platforms) and their users (consumers and firms).¹⁹⁶ The authorities deem

¹⁹² AGCM, AGCOM, DATA PROTECTION AUTHORITY, BIG DATA JOINT SURVEY, GUIDELINES AND POLICY RECOMMENDATIONS (2019), https://en.agcm.it/dotcmsdoc/pressrelease/Big%20Data_Guidelines%20and%20policy%20recommendations.pdf

¹⁹³ *Id.* at 2.

¹⁹⁴ *Id.* at 5.

¹⁹⁵ *Id.* at 2-3.

¹⁹⁶ *Id.* at 3-4.

it necessary to identify the nature and ownership of the data prior to its processing.¹⁹⁷ In line with the GDPR, this measure aims to strengthen the level of data protection while remaining consistent with national cybersecurity strategies.

The authorities further consider that merger control regulation should be reformed to increase intervention.¹⁹⁸ This Regulation must grant authorities powers to examine mergers below notifying thresholds to address “killer acquisitions.” For that purpose, the report recommends the amendment of Article 6(1) of Law n. 287/90 to introduce an evaluation standard grounded on the SIEC criteria “substantial impediment to effective competition.”¹⁹⁹ Finally, the report outlines the need to facilitate data portability and data mobility between platforms through the adoption of open and interoperable standards through competition law enforcement.²⁰⁰ This requirement potentially subjects digital platforms to compulsory data sharing regardless of their ability to affect output in a relevant market. Thus, a firm that poses no identifiable threat to competition could be forced to direct valuable resources to assisting less-efficient rivals.

I. Precautionary Antitrust in the Reports: A Summary

Competition enforcement towards digital markets reveals a precautionary approach by enforcers in the European Union. This trend is all the more exacerbated by the recent Digital Reports reviewed above. Some illustrations of how the elements of the precautionary principle have entered into antitrust proposals are sketched out in the table below. This table only partially portrays the precautionary perspective common to these reports. The most fundamental element may lay in the sceptical and mostly

¹⁹⁷ *Id.* at 4.

¹⁹⁸ *Id.* at 5.

¹⁹⁹ *Id.*

²⁰⁰ *Id.* at 5-6.

interventionist tone to be found in these reports. These reports all identify, more or less explicitly, a problem of under-enforcement which they use to justify the precautionary measures recommended in each of these reports. Consequently, these reports partake in the blossoming of precautionary antitrust in Europe, as made visible from the table below:

Portuese – European Competition Enforcement and the Digital Economy: The Birthplace of Precautionary Antitrust

Elements of Precautionary Antitrust						
Reports	Uncertainties Not Preventing Actions	Ex-ante interventions (regulatory tools, interim measures)	Reversed burden of proof	Lower standard of proof	Choice over Welfare	PRECAUTIONARY ANTITRUST INDEX
Cremer Report	Under uncertainty, preference for erring on the side of false positives (pp.50-51); <i>"In a digital world, where the future is more uncertain and less understood, there will be underenforcement if we insist that the harm be identified with a high degree of probability"</i> (p.42).	Interim measures outside the scope of the Report (p.17). "Smart" amendments to EUMR potentially "justified" (p.124).	Propose to impose burden of proof on incumbents (p.51). firms restricting multi-homing and/or performing regulatory functions should bear the burden of proof (pp.6-7); "allocation of the burden of proof and the definition of the standard of proof, may be called for" (p.51).	"allocation of the burden of proof and the definition of the standard of proof, may be called for" (p.51); "In a fast-changing world, we need to rethink both the timeframe and the standard of proof in the light of likely error costs" (p.3).	Presumption in favour of interoperability and of access of data (pp.51-52); Presumption in favour of interoperability and of access of data (pp.51-52); <i>"even if the consumer harm cannot be precisely measured, strategies employed by dominant platforms aimed at reducing the competitive pressure they face should be forbidden in the absence of clearly documented consumer welfare gains"</i> (p.42); <i>"'Potentiality' or the 'tendency' [of excluding rivals] should be evaluated with the same rigour as loss of consumer welfare is computed in traditional competition enforcement"</i> (p.42).	Strongly precautionary
UK Furman Report	Decisions required in the face of uncertainty (p.83).	Preference <i>"for a regulatory function with ongoing engagement with the market than it is for an approach solely based on conventional one-off competition enforcement – but it will still require decisions in the face of uncertainty, and a preparedness to learn and develop how its tools are applied."</i> (p.83); <i>"an approach that focuses regulation on the largest firms while involving companies of all scales in setting rules would mitigate this risk"</i> (p.83); <i>"we are recommending changes that would enable more use of interim measures to prevent damage to competition [...]"</i> (p.6); <i>"Where antitrust cases may take years to resolve, the CMA can impose interim measures to restrain a suspected anti-competitive practice, if those affected by it would otherwise be significantly harmed"</i> (p.14); <i>"The review applied by the Competition Appeal Tribunal to antitrust cases, including interim measures, should be changed to more limited standards and grounds"</i> (p.14).	When there is <i>"a significant probability of serious harm arising, for example through the removal of a potential competitor, authorities should consider whether preserving competition may offer the greatest consumer benefit over the longer term"</i> (p.120-121).	Balance of harms approach <i>"should be applicable in the UK [...]"</i> This would give authorities the option of acting, for example, where there was a 20% chance of serious harm to consumers arising from a proposed merger, set against an 80% chance of relatively small benefits occurring" (p.120).	<i>"[...] correctly applying consumer welfare would also result in more enforcement, addressing what it perceives to be underenforcement in the past"</i> (p.84); Need to consider <i>"some use of structural presumptions. More could be done to develop this area, in particular in light of the digital economy, and appropriate enhancements would remain fully consistent with the use of a customer welfare standard"</i> (p.87).	Strongly precautionary

The GAI Report on the Digital Economy

Elements of Precautionary Antitrust						
Reports	Uncertainties Not Preventing Actions	Ex-ante interventions (regulatory tools, interim measures)	Reversed burden of proof	Lower standard of proof	Choice over Welfare	PRECAUTIONARY ANTITRUST INDEX
<i>Franco-German Working Paper</i>	<i>"In light of the uncertainties concerning potential shapes of "algorithmic communication", the paper points out that it seems to be too early to clearly delineate which potential types of interaction constitute illegal behaviour" (p.IV).</i>	<i>"some have suggested regulating algorithms ex ante to ascertain individually whether they exhibit a tendency to collude. This could be done either through an examination of the algorithm's or through a test of the algorithm" (p.75).</i>	<i>"Concerning the burden and standard of proof, cases involving algorithms do not raise novel issues per se" (p.61).</i>	<i>"Concerning the burden and standard of proof, cases involving algorithms do not raise novel issues per se" (p.61).</i>	No specifications	<i>Slightly precautionary</i>
<i>OECD Report</i>	<i>"The incentives for introducing a variety of restrictions in an online, multi-sided environment are amplified by the presence of uncertainties on the online business model, 5 in which case it is natural for the brand to want to preserve more residual control rights over decisions about how to retail the product – as well as the authority to deal ex post with any issues that might arise" (p.217).</i>	No specification	No specification	No specification	No specification	<i>Not precautionary</i>
<i>Proposal to amend German competition law</i>	No specification	<i>"The amendment contains a moderate lowering of the conditions for the use of interim measures in order to enable the cartel authorities to intervene more quickly (in particular in the digital economy)" (p.84 of Government's explanatory memo); "The competition authority may order interim measures ex officio if an infringement within the meaning of section 32(1) appears predominantly probable and the order is necessary for the protection of competition or because of an imminent threat of serious harm to another undertaking" (Draft Section 32a).</i>	Creation of Section 19a with the concept of <i>"Abusive conduct of undertakings with paramount significance for competition across markets"</i> where the said companies are subjects to new categories of abusive conducts. These companies bear the burden of proof of evidencing that these conducts are <i>"objectively justified"</i> (Section 19a(4)).	Companies with <i>"relative or superior market power"</i> can be held liable because of the economic <i>"dependency"</i> exerted by <i>"intermediaries"</i> in digital markets towards their trading partners (Section 20(1)); liability engaged for impediments to attain <i>"positive network effects"</i> by rivals (Section 20(3a)).	Refusal to give access to <i>"data, networks or other infrastructure"</i> as new abusive conduct (Section 19(4)); New category of firms created: the undertaking with <i>"paramount significance for competition across markets"</i> (Section 19a); the competition authority can prohibit companies to <i>"directly or indirectly impede competitors on a market in which the respective undertaking can rapidly expand its position even without being dominant, provided that the impediment is capable of significantly impeding the competitive process"</i> (Section 19(2.2)).	<i>Strongly precautionary</i>
<i>G7 Common Understanding</i>	<i>"For effective enforcement and policy engagement, it is important that competition authorities have the tools and means to deepen their knowledge of new business models and their impact on competition, for example, through market studies or sector inquiries and by adding in-house capabilities to keep current with issues raised by the digital economy" (p.6); "Considering the need for continuous improvement, G7 competition authorities are further refining their expertise in the field, enhancing their in-house skills, tailoring their own institutional designs to address and keeping up-to-date with digital economy trends, and such efforts should be strengthened" (p.6); "governments should welcome and encourage such experience and knowledge-sharing with their competition authority experts and carefully consider the impact that regulations in the digital economy have on competition" (p.7).</i>	<i>"Other challenges include [...] how to pursue sound enforcement intervention against anticompetitive conduct in a meaningful timeframe" (p.5).</i>	No specification	No specification	<i>"the fast-moving nature of the digital economy, multi-sided markets and zero-priced offers can make market definition, market power assessment, and competitive effects analysis more difficult, requiring closer analysis of non-price aspects of competition such as quality, innovation, and consumer choice" (p.4); "These analytical tools are not limited to examining effects on prices and quantity, but also include the effects on quality, consumer choice and innovation" (p.5).</i>	<i>Not precautionary</i>

Portuese – European Competition Enforcement and the Digital Economy: The Birthplace of Precautionary Antitrust

Elements of Precautionary Antitrust						
Reports	Uncertainties Not Preventing Actions	Ex-ante interventions (regulatory tools, interim measures)	Reversed burden of proof	Lower standard of proof	Choice over Welfare	PRECAUTIONARY ANTITRUST INDEX
Belgian, Dutch and Luxembourg Joint Memorandum	No specification	Need for “an early identification and case allocation and fast track cooperation in related cases as envisaged in the ECN ‘early warning’ procedure, complemented by enhanced up-front information exchange within the ECN at the earliest possible stage concerning investigations that may lead to broader media attention, a further optimization of accelerated procedures such as single or multiple Member State competition authority settlements and commitments, an optimization of interim measures procedures” (p.4); Need to introduce ex ante instruments and to ensure that “this new ex-ante tool differs from the powers granted to the Commission on the basis of Article 7, Regulation 1/2003, as it is not required to establish an infringement” (pp.5-6).	“A second, related question, is whether in these specific circumstances, the burden of proof should be reverted [...] Therefore, and in view of the doubt or the issues left open or raised in the available studies, it would be most useful for the DG COMP to commission an economic study on merger control in the digital sector [...] Based on their analysis, the authors would discuss policy options designed to address an alleged under enforcement of competition rules in the digital sector, such as: [...] whether the burden of proof could be reversed, under which circumstances, and whether it would have led to a more competitive outcome” (pp.2-3).	No specification	“The risk, however, is that, once a company becomes dominant, its incentives may shift to protecting its market position by foreclosing actual and potential competitors or deliberately raising switching costs. The ex-ante tool therefore should be designed to prevent this [...]” (p.6).	<i>Slightly precautionary</i>
Italian Regulatory Authorities Reports	“The Privacy Authority concludes by emphasising the need for more in-depth knowledge of Big Data, for a dialogue with other institutional bodies and for an increasing use of data scientists by regulators” (p.10 Report Summary); “there are a number of obstacles to the effective development of data portability [...] and the still uncertain boundaries of data portability, which includes only part of the data collected and processed by businesses” (p.10).	“After more than two years of working closely together, it became clear that the positions held by the three Authorities were not so different after all: [...] appropriate regulatory measures to mitigate the market power of major digital platforms should not overshadow the risks of ex ante intervention in innovative markets” (p.10); “the challenges presented by the digital economy and by Big Data require existing synergies between ex ante and ex post tools to be exploited fully [...]” (p.10).	No specification	No specification	“The three Authorities, with their different goals, characteristics and, above all, levels of perception, strived to analyse Big Data issues in a comprehensive and effective way that combined privacy and consumer protection, competition and pluralism” (p.11); “The fact that operators, given the amount of information they hold, can direct the profiled user towards personalised content, can raise critical issues, both in terms of protecting the consumer [...] and in terms of protecting pluralism [...]” (p.10).	<i>Slightly precautionary</i>

CONCLUSION: THE WITHERING OF PRECAUTIONARY ANTITRUST

Precautionary antitrust, like the precautionary principle, has emerged in Europe out of a fear of irreversible damage by hypothetical risks, commanding urgent regulatory interventions. Precautionary antitrust begets regulation at the expense of innovation, it fosters the preservation of the status quo and deters new business models, disruptive strategies, and creative destruction. Precautionary measures in European antitrust are suggested, and both coincide with (and prove to be inspiration for) the U.S. Neo-Brandeisian perspective. These measures and reflections intend to paradigmatically alter the face of antitrust, from an *ex-post* antitrust liability, to part of a broader *ex-ante* regulatory framework that interacts with, and often overlaps with or confuses,²⁰¹ sectoral regulations.²⁰² The competitive process of innovation, dependent on the appropriability of the research being developed by platforms, is harmed in order to benefit smaller competitors. These smaller competitors get short term benefits through mandated measures that replace market competition (e.g. better ranking in search results, removal of vertical restraints imposed in exchange of freely provided services, data access without collection, interoperability without efforts to minimize switching costs, neutrality

²⁰¹ Such confusion is illustrated by the temporary injunction granted by the Higher Regional Court of Düsseldorf (Germany) in August 2019 which suspended the German Federal Cartel Office's 2019 decision which concluded that Facebook abused its dominant position through its data collection practices. The Düsseldorf court considered that data collection practices may fall within the ambit of data regulations rather than within the ambit of competition law. However, on 23 June 2020, the German Federal Supreme Court confirmed the initial decision by the Federal Cartel Office, thereby conflating data regulation obligations with competition law, and laying down a major blow on Facebook and other platforms' business models. See Press Release, The Federal Court of Justice provisionally confirms the allegation of abuse of a dominant position by Facebook (Aug. 23, 2020), <https://www.bundesgerichtshof.de/SharedDocs/Pressemitteilungen/DE/2020/2020080.html?nn=10690868>; See Case VI-Kart 1/19 Facebook v. Bundeskartellamt, Higher Regional Court of Düsseldorf (Oberlandesgericht Düsseldorf) in interim proceedings (2019), <https://www.d-kart.de/wp-content/uploads/2019/08/OLG-D%C3%BCsseldorf-Facebook-2019-English.pdf>

²⁰² For instance, in the US, Neo-Brandeisians propose these *ex-ante* regulations be materialized in regulation. See Lina Khan & Rohit Chopra, *The Case for Unfair Methods of Competition Rulemaking*, 87 U. CHI. L. REV. 357, 379 (2020).

irrespectively of merits, etc.).

More importantly, the new competition tools proposed by the European Commission²⁰³ strongly advocate for a shift from *ex-post* antitrust liability balancing pro and anti-competitive effects, towards *ex-ante* regulatory obligations akin to sectoral regulations. Should these types of initiatives materialize in Europe and abroad, the precautionary shift will radically change competition enforcement and the antitrust discipline as we understand it. Competition and antitrust are sound areas of the law precisely because their enforcement considers *ex-post* liability, is adjudicative, and is based in evidence and economics. Finally, the European shift towards precautionary antitrust will increase the innovation gap the European continent faces compared to the U.S.

²⁰³ See Press Release, Antitrust: Commission consults stakeholders on a possible new competition tool (June 2, 2020), https://ec.europa.eu/commission/presscorner/detail/en/ip_20_977.

Potential Competition, Nascent Competitors, and Killer Acquisitions

John M. Yun*

INTRODUCTION

Assessing the competitive impact of acquisitions is an integral part of antitrust enforcement. In fact, there is probably no other area of antitrust enforcement that is as well-developed and formalized as the review of mergers and acquisitions.¹ Recently, however, there has been a great deal of attention given to a certain category of acquisitions—namely, the acquisition of potential competitors and nascent competitive threats.² Relatedly, there is a concern that, post-acquisition, the acquiring firm will

* This chapter is based, in part, on written testimony provided on September 24, 2019, before the Subcommittee on Antitrust, Competition Policy, and Consumer Rights of the U.S. Senate Committee on the Judiciary for a hearing entitled, *Competition in Digital Technology Markets: Examining Acquisitions of Nascent or Potential Competitors by Digital Platforms*. The testimony was reprinted as *Potential Competition and Nascent Competitors*, 4 CRITERION J. ON INNOVATION 625 (2019). I thank Joshua Wright for providing valuable comments and Scalia Law student Rachel Burke for excellent research assistance.

¹ See, for example, U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES (2010), <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010> [hereinafter Horizontal Merger Guidelines], which is based on a strong legacy of prior merger guidelines including major revisions in 1982 and 1992.

² See, e.g., AUSTL. COMPETITION & CONSUMER COMM'N, DIGITAL PLATFORMS INQUIRY FINAL REPORT 10 (2019), <https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf> [hereinafter ACCC Report] (“... a range of factors contributed to each of Google’s and Facebook’s dominant positions in their respective markets. The acquisition of potential competitors by the dominant firms and economies of scope created via control of data sets are two such factors.”); DIRECTORATE-GENERAL FOR COMPETITION, EUR. COMM'N, COMPETITION POLICY FOR THE DIGITAL ERA 111 (2019) [hereinafter Cr mer Report], <https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf> (“Concerns may, however, arise notably when such acquisitions result in a strengthening of dominance and thereby a significant impediment of effective competition, e.g. by eliminating a competitive threat and/or by raising barriers to entry for other (potential) competitors, thus further reducing the risk of attacks on a strongly entrenched market position from the fringe.”); DIGITAL COMPETITION EXPERT PANEL, UNLOCKING DIGITAL COMPETITION (2019) [hereinafter Furman Report], https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf (“... digital mergers are also more likely to involve theories of harm which relate to elimination of potential competitors or harming innovation.”); STIGLER CTR., STIGLER COMM. ON DIGITAL PLATFORMS, FINAL REPORT 111 (2019) [hereinafter Stigler Report], <https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf> (“The behavior that may be of greatest concern to the many policymakers studying powerful digital businesses is their

terminate the competing, or potentially competing, acquired product, in what is labeled a “killer acquisition.”³ Notably, the term “killer acquisition” is also used to refer, more generally, to the suppression of potential competition—whether the acquired product is discontinued or not.⁴

These concerns have raised questions about whether anticompetitive acquisitions are occurring in areas outside the view of “standard” merger analysis—that is, in markets where an upstart has developed, or will soon develop, a competitive innovation and product that will challenge the incumbent’s primacy. Yet, there is also a recognition that there is a great deal of uncertainty associated with this theory of harm, which can result in higher overall error costs. Recently, various policy proposals have been offered to specifically address this theory that powerful incumbents are acquiring potential and nascent competitors. These proposals range from developing new evidentiary standards under Section 7 of the Clayton Act to imposing *ex ante* regulatory prohibitions against certain types of acquisitions.⁵

In this chapter, we address a number of critical questions. Is there a problem with large technology firms, or platforms, purchasing nascent competitors and suppressing competition before they can mature into vibrant competitors? Further, if there is a

acquisition of potential competitors.”).

³ See, e.g., ACCC Report, *supra* note 2, at 75 (“The acquisition by an incumbent firm of smaller innovative companies (often active in closely connected markets), discontinuing the target’s innovative projects and eliminating potential future rivals has been referred to as part of a so-called ‘killer acquisition strategy’.”).

⁴ See David Pérez de Lamo, *Assessing “Killer Acquisitions”: An Assets and Capabilities-Based View of the Start-Up*, CPI ANTITRUST CHRON., May 2020, at 50, 51 (“Subsequent conferences employed the term in a general way to include all acquisitions of promising companies by incumbent firms with the objective of suppressing potential competition, regardless of whether the target company and its innovative project were terminated post-transaction.”).

⁵ See *infra* Section III for a fuller discussion of various proposals. In one prominent proposal, Senator Amy Klobuchar (D-MN) introduced a bill that would ban significant acquisitions by any company with a market capitalization higher than \$100 billion unless the acquirer could demonstrate that the transaction would not lessen competition by more than a *de minimis* amount. See Consolidation Prevention and Competition Promotion Act of 2017, S. 1812, 115th Cong. § 3(3)(B)(ii) (2017).

problem, are the current antitrust laws and the enforcement of those laws sufficient to combat the problem? If not, is there a legislative solution? In addressing these questions, we offer a clear delineation and classification scheme to differentiate potential competition, nascent competitors, and killer acquisitions. Ultimately, while classification schemes are helpful, the assessment of all horizontal acquisitions, whether the rivalry is currently happening or will happen in the future, comes down to the core analytical considerations involving competitive effects, entry, and efficiencies.

I. CLASSIFICATION

Who are “nascent” and “potential competitors”? While these two terms are often, and increasingly, used synonymously, they have traditionally referred to two different concepts. The term “potential competitor” has a longer history and is typically defined as a firm that is likely to have a product that will compete at some point in the future or could easily enter if current market conditions change (such as a non-cost based increase in price).⁶ Potential competition can describe a number of similar but slightly different scenarios. First, the acquiring firm could be a current market participant and the acquired firm could be a potential market participant. Second, the acquiring firm could be a potential market participant while the acquired firm is a current market participant. There is also a distinction between “perceived potential competition” and “actual potential competition.”⁷ Perceived potential competition refers to a reduction in current competition due to the acquisition of a competitor, who is not an active producer, but the

⁶ The potential competition doctrine first emerged in *United States v. El Paso Natural Gas Co.*, 376 U.S. 651 (1964). See generally William E. Dorigan, *The Potential Competition Doctrine: The Justice Department’s Antitrust Weapon Under Section 7 of the Clayton Act*, 8 J. MARSHALL J. PRAC. & PROC. 415, 418 (1975) (citing, *inter alia*, *El Paso Natural Gas* in an exposition of the potential competition doctrine).

⁷ See, e.g., Gregory J. Werden & Kristen C. Limarzi, *Forward-Looking Merger Analysis and the Superfluous Potential Competition Doctrine*, 77 ANTITRUST L.J. 109, 111 (2010). Werden & Limarzi find little value in the use of these labels. *Id.* at 112 (“What follows describes horizontal merger analysis in detail with little use of the labels ‘actual’ or ‘potential’ and no use of the labels ‘actual potential’ or ‘perceived potential’ competition.”).

threat of entry disciplines the current market. In contrast, an actual potential competitor is a firm that impacts future competition from future entry.

“Nascent competitor,” however, is term that is relatively new in antitrust jurisprudence and was largely developed in the late 1990s with the Department of Justice’s (DOJ’s) *Microsoft* case.⁸ It is a term that typically refers to a supplier with an existing product or technology, whether inside or outside some relevant product market, that could, at some point, be considered a significant competitor, or be developed into a significant competitor.⁹

Generally speaking, we can consider potential competition as a product that does not yet compete within a specific relevant market but is predicted to compete or could compete very quickly; thus, the potential competition theory is really a forecast about pending entry or the threat of entry.¹⁰ Whereas, nascent competition describes rivalry or potential rivalry with a product or technology—particularly one associated with a great deal of innovation—that exists but has not yet matured into a significant competitor whether within or outside the same relevant market. Like potential competition, nascent competition can be a forecast of entry, but it involves a number of other aspects. In particular, it also involves a forecast of future differentiation or development of a product or technology and its level of market success.

⁸ In *United States v. Microsoft Corp.*, the U.S. Court of Appeals for the District of Columbia Circuit stated: “We may infer causation when exclusionary conduct is aimed at producers of nascent competitive technologies as well as when it is aimed at producers of established substitutes. Admittedly, in the former case there is added uncertainty, inasmuch as nascent threats are merely potential substitutes.” 253 F.3d 34, 79 (D.C. Cir. 2001). For an overview of the court’s treatment of nascent competition in *Microsoft*, see Douglas H. Ginsburg & Koren W. Wong-Ervin, *Challenging Consummated Mergers Under Section 2*, CPI NORTH AMERICA COLUMN, May 2020, at 2–4.

⁹ “Relevant product markets” are defined as the smallest group of products that would allow a hypothetical monopolist to raise price a small, but significant, and nontransitory amount (that is, the SSNIP test or the hypothetical monopolist test). See Horizontal Merger Guidelines § 4.

¹⁰ An example would be an out-of-state producer of an established product who is poised to enter the state market but is acquired by an established in-state producer. In other words, potential competition naturally fits scenarios involving geographic market entry.

Finally, a related concept is a “killer acquisition,” which is the idea that a firm acquires another firm to “eliminate potentially promising, yet likely competing, innovation.”¹¹ It is a term that is effectively capturing the idea of an anticompetitive acquisition of a potential or nascent competitor where the primary intent is to stop a product’s development without an offsetting efficiency rationale.¹² The term, however, is also used, more generically, to refer to the suppression of future competition—regardless of whether the product is actually “killed.”¹³

Whenever a firm, big or small, acquires another firm or set of assets, there are an infinite number of possible post-merger outcomes, but we can broadly categorize them as: (1) those that are good for consumers, (2) those that have no real impact on consumers, and (3) those that are bad for consumers. How do we measure “good” or “bad” in the realm of antitrust? We base it on the consumer welfare standard.¹⁴ As a consequence, we do not base antitrust assessments of “good” or “bad” acquisitions on how well competitors are predicted to perform post-merger. Moreover, we do not base welfare considerations on exactly who is providing the surplus. For instance, whether four equally sized firms or two leading firms with a handful of smaller rivals are providing the surplus, we assess the performance of the market from the perspective of consumers.¹⁵

¹¹ Colleen Cunningham et al., *Killer Acquisitions* 1 (Apr. 19, 2020) (unpublished manuscript), <https://ssrn.com/abstract=3241707>.

¹² See, e.g., Benoit D’Udekem et al., *Remember Stacker? Another Look at “Killer” Acquisitions in the Digital Economy*, CPI ANTITRUST CHRON., May 2020, at 38, 39 (offering an example of a killer acquisition: a hard drive manufacturer’s purchase of a software product that doubled the capacity of hard drives with the sole purpose of preventing its availability on the market).

¹³ See Pérez de Lamo, *supra* note 4.

¹⁴ For a full description of the consumer welfare standard, see, for example, Gregory J. Werden, *Cross-Market Balancing of Competitive Effects: What Is the Law, and What Should It Be?*, 43 J. CORP. L. 119, 139 (2017); Joshua D. Wright et al., *Requiem for a Paradox: The Dubious Rise and Inevitable Fall of Hipster Antitrust*, 51 ARIZ. ST. L.J. 293, 296 (2019).

¹⁵ See, e.g., Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 2 (1984) (“Does it matter whether there are two oil companies or twenty? 200 stations or 20,000? Is a Herfindahl-Hirschman Index of concentration in titanium dioxide of 3000 too high? Too low? Just right? If the court tries to move the

II. IS THERE A SYSTEMATIC PROBLEM WITH LARGE TECHNOLOGY FIRMS PURCHASING
POTENTIAL AND NASCENT COMPETITORS AND SUPPRESSING COMPETITION BEFORE THEY CAN
MATURE INTO VIBRANT COMPETITORS?

In order to address this question, we must assess the counterfactual. What if these large technology firms did not acquire smaller firms such as YouTube or Instagram?¹⁶ What would these respective markets look like? Further, would consumers be better off? Given the nature of the exercise, there will always be some degree of uncertainty as we can never actually observe the counterfactual (whether it is allowing or blocking a merger). This fundamental reality clearly makes predictive exercises inherently difficult and, perhaps, gives some license to make unfounded claims that are outside the bounds of likely outcomes. More importantly, the relevant policy question is not whether the antitrust agencies got a particular merger right or wrong, but whether or not the agencies are systematically biased in approving anticompetitive mergers (that is, a Type II error or a false negative) or blocking procompetitive mergers (that is, a Type I error or a false positive).¹⁷

The recognition that there are error costs to antitrust enforcement is a recognition that there are limits to an agency and court's ability to assess and weigh certain market practices. Even for well-examined business practices, such as resale price maintenance (RPM) and exclusivity, there are still debates among practitioners and economists as to their relative merits. The legality of practices such as RPM and exclusivity ultimately boils down to the particular facts in a given case as both are assessed under a rule of reason

economy in the direction of the textbook model of atomistic auctions, it is sure to be wrong a great deal of the time.”).

¹⁶ Google acquired YouTube in 2006; Facebook acquired Instagram in 2012.

¹⁷ The relevance and need to assess the error costs in antitrust enforcement was brought to the forefront with Easterbrook, *supra* note 15, at 4 (“Antitrust is costly. The judges act with imperfect information about the effects of the practices at stake. The costs of action and information are the limits of antitrust.”).

analysis, which involves weighing the evidence of anticompetitive harm with that of the procompetitive benefits. This exercise is greatly facilitated by the availability of actual market evidence, both qualitative and quantitative, as to how the specific manifestation of these practices impacted reliable measures of market performance such as price, quantity, quality, and innovation. While identification and establishing causation can require some degree of skill and effort, the answer is out there. This is not the case for nascent and potential competition. What evidence can we observe? The entire basis of the theory of harm involving the loss of a nascent or potential competitor is that traditional metrics and measures of competition are not fully formed and indicative of the level of competition that will emerge at some future date.

This is also what differentiates this theory of harm from “standard” horizontal mergers involving actual competitors; if the merger is anticompetitive, there should be market evidence of the fruits of their prior competition, which will now be lost with the proposed acquisition. Again, this type of evidence will be absent for markets involving nascent and potential competitors—as the harm is an unobservable, conjectured loss of future competition. What hope do agencies and courts have in evaluating this theory of harm? Are there some guidance that could be offered or, even, policy changes that are needed? In light of these questions, there have recently been a number of proposals to address this inherent uncertainty. We discuss these proposals in *infra* Section III.

To illustrate the difficulty in predicting market outcomes for potential competition, in 1967, the FTC successfully litigated the divestiture of the Clorox Company, and its liquid bleach assets, from Procter & Gamble (P&G), which had purchased Clorox in 1957, based, in part, on the belief that “the merger would seriously diminish potential competition by eliminating Procter as a potential entrant into the industry.”¹⁸ In the nearly half-century since that decision, P&G has yet to sell liquid

¹⁸ FTC v. Procter & Gamble Co., 386 U.S. 568, 575 (1967).

bleach in the United States.¹⁹

More relevant to the digital economy, Facebook's acquisition of Instagram in 2012 is likely the most cited example to illustrate the claims that strategic acquisitions have entrenched market power and competition authorities are systematically missing anticompetitive acquisitions.²⁰ A review of the evidence, however, suggests this is a complex issue.²¹ At the time of the purchase, Instagram had zero revenue and a handful of employees.²² Since Facebook's acquisition, Instagram has grown from 30 million users to well over one billion.²³ During the same period, Facebook grew from approximately 900 million users to over two billion users.²⁴ This substantial expansion in users and output is the complete opposite of what we typically consider an anticompetitive outcome. Of course, one could argue that, but for the acquisition, Instagram would have been just as successful, if not more so, and would have remained an independent competitor. While this is a possibility, without more, it is an insufficient basis upon which retrospectively to condemn an acquisition.²⁵ Recently, there have been a number of

¹⁹ However, it is not necessarily the case that entry has to actually occur to discipline a given market—so the mere fact that P&G has never sold liquid bleach does not prove that the case was improperly decided.

²⁰ See, e.g., Nicholas Thompson, *Tim Wu Explains Why He Thinks Facebook Should Be Broken Up*, WIRED, July 5, 2019, <https://www.wired.com/story/tim-wu-explains-why-facebook-broken-up> (quoting Professor Tim Wu: "Instagram was the most dangerous company for Facebook. Facebook had already destroyed a company like it, MySpace, earlier.").

²¹ See, e.g., Furman Report, *supra* note 2, at 98 ("The scope for Instagram to grow into a rival to Facebook as a social network was uncertain, and the authority may have struggled to demonstrate that this outcome was more likely than not to occur.").

²² See Kurt Wagner, *Here's Why Facebook's \$1 Billion Instagram Acquisition Was Such a Great Deal*, VOX RECODE (Apr. 9, 2017), <https://www.vox.com/2017/4/9/15235940/facebook-instagram-acquisition-anniversary>; Evelyn M. Rusli, *Facebook Buys Instagram for \$1 Billion*, N.Y. TIMES DEALBOOK (Apr. 9, 2012), <https://dealbook.nytimes.com/2012/04/09/facebook-buys-instagram-for-1-billion>.

²³ See Wagner, *supra* note 22; Ashley Carman, *Instagram Now Has 1 Billion Users Worldwide*, VERGE (June 20, 2018), <https://www.theverge.com/2018/6/20/17484420/instagram-users-one-billion-count>.

²⁴ See *Number of Monthly Active Facebook Users Worldwide 2018 as of 2nd Quarter 2020 (in Millions)*, STATISTA (AUG. 10, 2020), <https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide>.

²⁵ Further, there is evidence that Facebook significantly improved the quality and features of Instagram.

reports regarding internal Facebook documents that reveal that Facebook considered Instagram to be a competitive threat.²⁶ These type of documents are certainly relevant to an investigation and should be seriously considered, but there are also other types of evidence that agencies weigh—so the identification of these types of documents does not, in and of itself, suggest the FTC improperly failed to bring a case.

Importantly, if one believes that the post-merger performance of Facebook and Instagram is an example of an anticompetitive outcome, what outcome(s) would be considered procompetitive? Suppose that Facebook discontinued Instagram after a year or so. Would we conclude that Instagram was a poor product, and thus the acquisition was benign, or would we conclude that Facebook engaged in a “killer acquisition” in order to snuff out a promising rival? Similarly, suppose that Instagram grew but lagged behind its prior growth projections. Would we conclude that Instagram was only an average product, and thus the acquisition was benign, or would we conclude that Facebook did not invest enough in the product? In other words, what are we “expecting” to happen for us to conclude that an acquisition was either anticompetitive or procompetitive? Without a firm answer, we cannot reasonably conclude that agencies and courts are making systematic errors.

The reality is that the answer depends on the particular situation and a comparison of various counterfactuals. For instance, an acquisition that results in a discontinued product is not per se evidence of either consumer harm or benefit.²⁷ The answer involves

See, e.g., Elena Argentesi et al., *Merger Policy in Digital Markets: An Ex-Post Assessment* 22 (CESinfo Working Paper No. 7985, 2019), <https://ssrn.com/abstract=3507256> (“After the acquisition by Facebook, Instagram rapidly evolved into a different product, one that offers fully-fledged social network functionalities, such as direct messaging, photo tagging, and allows advertisers to place their ads on the platform. Facebook contributed to Instagram’s growth by providing improved physical infrastructures as well as its expertise in social networks and advertising markets.”).

²⁶ *See, e.g.,* Casey Newton & Nilay Patel, ‘Instagram Can Hurt Us’: Mark Zuckerberg Emails Outline Plan to Neutralize Competitors, *VERGE* (Jul. 29, 2020), <https://www.theverge.com/2020/7/29/21345723/facebook-instagram-documents-emails-mark-zuckerberg-kevin-systrom-hearing>.

²⁷ *See, e.g.,* Crémer Report, *supra* note 2, at 117–18 (“There may indeed be cases in the digital realm where a

comparing the counterfactual world without the acquisition with the world with the acquisition. The comparison includes potential efficiencies that were gained from the acquisition, including integration of intellectual property, the reduction of transaction costs, economies of scope, and better allocation of skilled labor. However, what seems fairly clear is that an acquisition that results in tremendous growth for both the acquiring and acquired product strongly suggests a procompetitive outcome.

Notably, the success of big tech platforms in various markets is not guaranteed. Take for instance Google+, which was launched on June 28, 2011.²⁸ At the time, Google proclaimed: “We’re transforming Google itself into a social destination at a level and scale that we’ve never attempted—orders of magnitude more investment, in terms of people, than any previous project.”²⁹ According to MIT economist, Professor Catherine Tucker, Google+ was primed for success.³⁰ Instead, Google+ ceased to operate as a consumer product on April 2, 2019.³¹ Google acknowledged the stunning failure of Google+.³² Put

dominant acquirer buys up innovative targets but later shuts down the relevant innovation. This is, however, not the typical scenario. Frequently, the project of the bought up start-up is integrated into the ‘ecosystem’ of the acquirer or into one of their existing products. Such acquisitions are different from killer acquisitions as the integration of innovative complementary services often has a plausible efficiency rationale.”).

²⁸ See Vic Gundotra, *Introducing the Google+ Project: Real-Life Sharing, Rethought for the Web*, GOOGLE BLOG (June 28, 2011), <https://googleblog.blogspot.com/2011/06/introducing-google-project-real-life.html>.

²⁹ See Steven Levy, *Inside Google+—How the Search Giant Plans to Go Social*, WIRED (June 28, 2011), <https://www.wired.com/2011/06/inside-google-plus-social>.

³⁰ See Catherine Tucker, *What Have We Learned in the Last Decade? Network Effects and Market Power*, 32 ANTITRUST, Spring 2018, at 77, 78 (“Google Plus enjoyed the support of over 1,000 employees (including top engineers), as well as CEO support. In theory, Google Plus should have had network effects and consequent critical mass on its side. This is because it was able to ‘seed’ its initial social network with 90 million users through the integration of other Google services, such as YouTube, in its signup process.”).

³¹ See *Shutting Down Google+ for Consumer (Personal) Accounts on April 2, 2019*, GOOGLE+ HELP (Jan. 30, 2019), https://support.google.com/plus/answer/9195133?hl=en&ref_topic=9259565.

³² See Bob Smith, *Project Strobe: Protecting Your Data, Improving Our Third-Party APIs, and Sunsetting Consumer Google+*, GOOGLE BLOG (Oct. 8, 2018), <https://www.blog.google/technology/safety-security/project-strobe> (Google+ “. . . has not achieved broad consumer or developer adoption, and has seen limited user interaction with apps. The consumer version of Google+ currently has low usage and engagement: 90 percent of Google+ user sessions are less than five seconds.”).

simply, despite the appeal of its online search service, consumers voted with their eyeballs and directed their attention to other products. The Google+ episode further illustrates the difficulty in making predictions about market success and projecting future competitive effects.

Clearly, the acquisition of a potential or nascent competitor can result in an outcome that is harmful to consumers and innovation, yet it can also result in an outcome that unlocks a great deal of consumer value. Beyond the standard efficiencies, a merger that occurs early in the life of a product could significantly increase the probability that a product or technology develops and/or increases the speed at which the product or technology will arrive to the market. Presumptively declaring that all, or most, acquisitions from large technology firms are harmful to consumers, without sufficient evidence to support the claim, can result in significantly lower levels of innovation and consumer welfare.³³ This is not to say that all research indicates that the loss of potential competition is not a problem.

Cunningham et al. examine the impact of killer acquisitions in the pharmaceutical industry.³⁴ While their research is limited to the development of pharmaceutical drugs, where product development milestones are readily observable,³⁵ unlike in digital markets, it is certainly the type of research that is needed to help inform policy decisions.

³³ Additionally, there are likely unintended consequences from such policy proposals. See, e.g., J. Daniel Kim, *The Paradox of Startup Acquisitions: Eliminating Competition and Creating New Competitors* 1, 2, 6 (Mar. 30 2020), <https://ssrn.com/abstract=3568153> (“startup acquisitions may unintentionally increase future competition by catalyzing the acquired employees to leave and pursue their own competitor ventures . . . these results provide important managerial implications for established firms seeking to acquire high-tech startups. While startup acquisitions reduce the degree of competition in the short-term, they can generate greater levels of competition in the long-run.”).

³⁴ See Cunningham et al., *supra* note 11, at 1.

³⁵ The study of substitutability in the pharmaceutical industry is relatively straightforward because there are set categories of pharmaceutical substitutability including the therapeutic class and the mechanism of action. Thus, we can more reliably use functional substitutability to proxy for market-based substitutability—that is, how consumers actually behave. For other differentiated products, including almost all the products from large technology platforms, this assessment is not as straightforward.

The study's main result is that "projects acquired by an incumbent with an overlapping drug are 23.4 percent less likely to have continued development activity compared to drugs acquired by non-overlapping incumbents."³⁶ In total, they label between 5.3 percent to 7.4 percent of all pharmaceutical acquisitions in their sample as killer acquisitions.³⁷

Yet even with this result, they conclude that "the overall effect on social welfare is ambiguous because these acquisitions may also increase ex-ante incentives for the creation of new drug projects."³⁸ In other words, new drug development is endogenous to the potential returns from being bought before actual completion of the project.³⁹ Thus, if the expected payoff from innovation decreases, for example, by a prohibition hindering acquisitions by large pharmaceutical companies, then this will likely decrease the rate of innovation.⁴⁰

Given these ex ante uncertainties and the need to make forecasts and predictions about entry, product differentiation, and efficiencies beyond what is typical for merger analysis, we are left with questions regarding whether or not agencies and courts are able

³⁶ See Cunningham et al., *supra* note 11, at 3.

³⁷ *Id.* at 6.

³⁸ *Id.*

³⁹ See also *Competition in Digital Technology Markets: Examining Acquisitions of Nascent or Potential Competitors by Digital Platforms: Hearing Before the Subcomm. on Antitrust, Competition Policy, & Consumer Rights of the S. Comm. on the Judiciary*, 116th Cong. 4–5 (Sept. 24, 2019) (Written Testimony of Patricia Nakache, General Partner, Trinity Ventures), <https://www.judiciary.senate.gov/imo/media/doc/Nakache%20Testimony.pdf> ("... many young companies cannot realistically achieve the scale necessary to become standalone public companies, which means that often M&A is the most viable pathway for a startup.").

⁴⁰ See, e.g., D. Daniel Sokol, *Vertical Mergers and Entrepreneurial Exit*, 70 FLA. L. REV. 1357, 1357 (2018) (arguing that "[v]ertical merger policy that would unduly restrict large tech firms from undertaking acquisitions . . . would hurt incentives for innovation in the economy by chilling business formation in start-ups."). In contrast, Lemley & McCreary have recently argued that the current paradigm of venture capital funding and subsequent buyouts are distorting incentives and are actually causing more harm than good. This has fueled their proposal to presumptively ban large tech companies from making acquisitions unless they can prove strong efficiencies. See Mark A. Lemley & Andrew McCreary, *Exit Strategy* (Stanford Law and Economics Olin Working Paper #542, 2019), <https://ssrn.com/abstract=3506919>. We address this argument and policy proposal in *infra* Section III.

to assess acquisitions that involve nascent or potential competitors. Importantly, is a different approach needed to assess this particular theory of harm? We turn to that question next.

III. RECENT PROPOSALS TO ADDRESS THE ALLEGED PROBLEMS OF NASCENT, POTENTIAL, AND KILLER ACQUISITIONS

Given the additional uncertainty and challenges required to assess acquisitions involving nascent and potential competitors (including those that could turn out to be a killer acquisition), a number of proposals have recently been made. Below, we detail three proposals and offer some commentary.⁴¹

A. Furman Report's "Balance of Harms" Standard

The Furman Report proposes a "balance of harms" approach in dealing with mergers involving nascent competitors in the United Kingdom.⁴² The idea is to explicitly calculate the expected value of a merger's impact, which would involve assigning probabilities to various states of the world and the welfare gains or losses from those various states. For example, if there is a 20 percent chance that an acquisition would result in \$250 million in anticompetitive harm and an 80 percent chance that the acquisition will result in net efficiencies of \$50 million, then the deal should be blocked because the expected value would be negative (-\$10 million).

The proposal is a certainly a serious and thoughtful attempt to move economic

⁴¹ Another recent proposal is that the liability standard used in Section 2 cases, such as *Microsoft*, can be used in lieu of Section 7 standards for acquisitions involving nascent competitors by incumbents with monopoly power. See C. Scott Hemphill & Tim Wu, *Nascent Competitors*, U. PA. L. REV. (forthcoming 2020) (manuscript at 20–26), <https://ssrn.com/abstract=3624058>. For arguments against this approach, see Ginsburg & Wong-Ervin, *supra* note 8. We do not address the specifics of this proposal because it is focused primarily on the legal question of lowering the burden of production on plaintiffs to build a prima facie case. Nonetheless, we do address the larger question of whether there is sufficient evidence to change our presumptions regarding acquisitions involving larger digital platforms.

⁴² Furman Report, *supra* note 2, at 99.

analysis and welfare estimates to the forefront of merger assessments. Calculating the expected value is appealing because it incorporates the inherent uncertainty in making predictions about the effects of a merger. If possible, it can be part of a larger merger review process that puts weight on various pieces of evidence.

On the other hand, there are some concerns with shifting merger policy to focus more on low probability outcomes with large harms and benefits. For example, suppose that there is a 5 percent chance that an acquisition will result in net efficiencies equal to \$300 million a year while having a 35 percent chance of having net efficiencies equal to \$45 million a year. Further, if the remaining 60 percent of outcomes results in a net harm of \$50 million a year, the merger would be considered procompetitive since the expected value is \$0.75 million. While there are benefits to using an objective basis to make merger decisions, it assumes agencies have good estimates of these various probabilities and welfare outcomes. This is unlikely to be the case for most investigations, and it would make assessments highly sensitive to small changes in probability estimates.⁴³

B. Cr mer Report’s “Significant Impact on Effective Competition (SIEC)” Test

The Cr mer Report proposes that regulators should be particularly wary of nascent acquisitions involving dominant platforms with strong positive network effects and where the acquired firm has a fast-growing user base with “high future market potential.”⁴⁴ The report labels this as the “significant impact on effective competition (SIEC)” test.⁴⁵ The idea is to identify acquisitions where the principal motivation is to protect the dominant platform’s core product or ecosystem. Thus, agencies should focus

⁴³ See, e.g., Jeffrey M. Wilder, Acting Deputy Assistant Att’y Gen., United States Dep’t of Justice, Remarks at the Hal White Antitrust Conference: Potential Competition in Platform Markets (June 10, 2019), <https://www.justice.gov/opa/speech/acting-deputy-assistant-attorney-general-jeffrey-m-wilder-delivers-remarks-hal-white>.

⁴⁴ Cr mer Report, *supra* note 2, at 116.

⁴⁵ *Id.* at 117.

more on whether the two firms operate in the same “technological” or “user” space rather than on strict product market overlaps.⁴⁶

Broadly, the SIEC test shares a great deal in common with current U.S. merger review practices. There is no presumption of illegality.⁴⁷ Potential efficiencies should be considered and given their proper weight.⁴⁸ Additionally, the recommendation to look beyond the core product market overlap is in-line with the nascent competition theory of harm used in *Microsoft*. Thus, there are attractive elements to the SIEC test. One caveat, however, is that regulators must first firmly establish that the network effects are indeed of the type that limit entry and confer strong barriers to entry—as network effects are not all uniform and may have different characteristics and strengths depending on the particular market.⁴⁹

What prior mergers would have potentially fallen under the SIEC test criteria? At first blush, it would seem Facebook’s acquisition of Instagram would be a candidate. The prevailing view is that Facebook is a monopolist—although, a monopolist over what relevant market? A “social media” market could include services such as YouTube, Twitter, Pinterest, Reddit, and LinkedIn—and, more recently, Snapchat and TikTok.⁵⁰ Further, was Instagram a unique nascent competitor that was readily identifiable as a threat to Facebook’s monopoly? Certainly, it is a relevant question and something

⁴⁶ *Id.* at 117.

⁴⁷ *Id.* at 124.

⁴⁸ *Id.* at 123.

⁴⁹ See, e.g., Tucker, *supra* note 30, at 77 (“network effects are not the guarantor of market dominance that antitrust analysts had initially feared”); Daniel F. Spulber, *Unlocking Technology: Antitrust and Innovation*, 4 J. COMPETITION L. & ECON. 915, 917 (2008) (“Despite being rarely observed, technology lock-in remains influential in competition policy.”). See also John M. Yun, *Does Antitrust Have Digital Blind Spots?*, S.C. L. REV. (forthcoming 2020), <https://ssrn.com/abstract=3593467>.

⁵⁰ In terms of daily active users, TikTok’s 800 million users is approaching half of Facebook’s 1.7 billion users. See Mike Vohaus, *ByteDance, Chinese Digital Giant and Owner of TikTok, Reported to Have Revenues of \$17 Billion*, FORBES (May 27, 2020), <https://www.forbes.com/sites/mikevorhaus/2020/05/27/bytedance-chinese-digital-giant-and-owner-of-tiktok-reported-to-have-revenues-of-17-billion>.

agencies should consider; although, in the case of Instagram, it is not entirely clear that it fit this profile.⁵¹ On the other hand, there is little doubt that Instagram was enjoying tremendous early growth as a photo sharing app.⁵² Yet, purchasing a fast-growing company in an adjacent or distant market also means that the firm is buying what is likely a high quality product and set of assets, and, thus, it raises the potential for strong efficiencies—particularly if the product is highly differentiated from the acquiring firm’s product. Again, there are no easy answers to an ex ante assessment of mergers involving the future growth and differentiation of an emerging product and technology.

C. Presumption of Illegality for Acquisitions by Dominant Platforms

Some politicians have proposed a legislative solution to the perceived problem of large platforms purchasing potential and nascent competitors through an outright ban on acquisitions that meet certain criteria.⁵³ A weaker form of this proposal is a strong presumption of illegality that can be rebutted within a narrow category of defenses. While there are variations of this burden-shifting proposal, it effectively comes down to blocking acquisitions by big tech companies unless they can prove strong efficiencies.⁵⁴

⁵¹ See, e.g., MG Siegler, *Distilled from Burbn, Instagram Makes Quick Beautiful Photos Social*, TECHCRUNCH (Sep. 20, 2010), <https://techcrunch.com/2010/09/20/instagram/> (“Beyond Hipstamatic and CameraBag, Instagram faces a ton of competition from photo sharing apps such as Picplz and Treehouse. Systrom thinks a number of them are good, but feels their approach is different enough to separate from the pack.”).

⁵² See, e.g., Kelly Lux, *What is Instagram and Why is It So Popular?*, SYRACUSE U. SCH. OF INFO. STUD. (Dec. 15, 2011), <https://ischool.syr.edu/infospace/2011/12/15/what-is-instagram-and-why-is-it-so-popular/> (“#1 in the App Store within 24 hours of launch . . . Holds the record as quickest to reach 1 million downloads, occurring on December 21, 2010.”); Martin Bryant, *Instagram Appears to Have Passed 25 Million Users, Adding Up to 3000 More Per Hour*, TNW (Mar. 2, 2012), <https://thenextweb.com/socialmedia/2012/03/02/instagram-appears-to-have-passed-25-million-users-adding-up-to-3000-more-per-hour/> (“With estimates that the number of photos shared on Instagram are growing at twice the rate of Flickr. . .”).

⁵³ See, e.g., S. Consolidation Prevention and Competition Promotion Act of 2017, S. 1812, 115th Cong. § 3 (2017).

⁵⁴ See, e.g., Lemley & McCreary, *supra* note 40, at 85–86 (“We think the antitrust agencies should presumptively block acquisitions of directly competitive startups by dominant firms. . . . That presumption should be rebuttable if (1) the startup would not be viable as a freestanding entity and (2) there are no other plausible acquirers.”); ACCC Report, *supra* note 2, at 109 (“The ACCC considers it may be worthwhile to consider whether a rebuttable presumption should also apply, in some form . . . absent clear and convincing

However, in order for there to be a presumption of anticompetitive harm from large digital platforms purchasing firms, there needs to be strong evidence that these acquisitions are actually anticompetitive and are systematically being underenforced through the current legal approach.⁵⁵ We are unaware of a study that demonstrates this.⁵⁶ Three recent studies, however, do attempt to examine prior platform acquisitions, which we detail below. Overall, they do not find systematic evidence that big tech acquisitions fit the killer acquisition narrative.⁵⁷ Although, they also conclude that it is still an open question whether some of the acquisitions could be construed as anticompetitive. At best, the evidence is mixed. Even reports that are otherwise critical of the current level of antitrust enforcement do not recommend such a drastic policy change.⁵⁸

In the first study, Latham et al. examine acquisitions by Google, Amazon, Facebook, and Apple (GAFA) between 2009 and 2020. They find that “only a small proportion of transactions could begin to fit the ‘killer’ narrative.”⁵⁹ Instead, “the vast

evidence put by the merger parties, the starting point for the court is that the acquisition will substantially lessen competition”); Stigler Report, *supra* note 2, at 111 (“These specific merger regulations should require merging firms to demonstrate that the combination will affirmatively promote competition. This shifting of the burden of proof from the government (to prove harm) to the parties (to prove benefit) will assist the DA [Digital Authority] by placing the job of demonstrating efficiencies on the parties, who have a greater ability to know what they are.”).

⁵⁵ See, e.g., *Cal. Dental Ass’n v. FTC*, 526 U.S. 756, 781 (1999) (“The object is to see whether the experience of the market has been so clear, or necessarily will be, that a confident conclusion about the principal tendency of a restriction will follow from a quick (or at least quicker) look, in place of a more sedulous one.”).

⁵⁶ The Cunningham et al. study is in regard to killer acquisitions in the pharmaceutical industry, which has limited parallels to digital markets. See discussion *supra* Section II.

⁵⁷ Again, the label “killer acquisition” is not reserved for just those cases where the potentially competitive product was discontinued.

⁵⁸ See, e.g., Furman Report, *supra* note 2, at 101 (“the majority of acquisitions by large digital companies are likely to be either benign or beneficial for consumers, though a minority may not be. Being acquired is also an important exit strategy for technology start-ups, providing significant incentive for investors to provide funding to risky projects and support market entry.”).

⁵⁹ See Oliver Latham et al., *Beyond Killer Acquisitions: Are There More Common Potential Competition Issues in Tech Deals and How Can These Be Assessed?*, CPI ANTITRUST CHRON., May 2020, at 26, 27. The authors define “killer acquisition” more broadly than instances where the acquired product was discontinued—but rather focus on the narrative that big tech acquisitions are motivated by a concern that the target firms could evolve

majority have been about GAFA acquiring new capabilities and positioning themselves to enter new markets.”⁶⁰ In examining the 409 acquisitions in their data set, they find only 33 of them, or 8 percent, fit what they labeled a “core business” filter. This filter looks for either a direct horizontal overlap or a scenario where the acquisition involved a target that was “vertically-related to that core business and could plausibly grow into a competitive threat.”⁶¹ Importantly, of these 33 acquisitions, the authors emphasize that they “are not saying that the transactions surviving these filters *were* killer acquisitions.”⁶²

The study does, however, mention a concern about “reverse killer acquisitions,” which involves the incumbent eliminating its internal development of a product and using the acquired product instead.⁶³ While it is a reasonable inquiry to make, it does not necessarily follow that a reverse killer acquisition will occur, and, even if it does, whether it is detrimental to innovation. For instance, combining the best of two development processes in order to bring a more innovative product to market faster could involve discontinuing one of the pre-merger products.⁶⁴ Similarly, there are questions whether, even as independent companies, internal development would have continued or would have occurred at the same degree of efficiency.⁶⁵

into a challenger to their core monopoly.

⁶⁰ *Id.* at 34.

⁶¹ *Id.* at 31.

⁶² *Id.* (emphasis in original).

⁶³ The phrase “reverse killer acquisition” prominently appears in Caffarra et al., “*How Tech Rolls*”: *Potential Competition and “Reverse” Killer Acquisitions*, CPI ANTITRUST CHRON., May 2020, at 13.

⁶⁴ See Horizontal Merger Guidelines § 10 (“When evaluating the effects of a merger on innovation, the Agencies consider the ability of the merged firm to conduct research or development more effectively. Such efficiencies may spur innovation but not affect short-term pricing.”).

⁶⁵ On this question, a beneficial study would be to examine the failure rate of various products and product developments at large platforms. There is certainly no shortage of large profile product flops. See, e.g., Eric Griffith, *The Biggest Tech Product Flops of the 2010s*, PCMAG (Dec. 2, 2019), <https://www.pcmag.com/news/the-biggest-tech-product-flops-of-the-2010s> (citing, for example, Amazon Fire Phone, Facebook Home, Facebook Deals, Facebook Email, Facebook Places, Facebook Gifts, Google Glass, Google Nexus Q, Google TV, Microsoft Kinect).

Gautier & Lamesch also examine acquisitions from big tech platforms and conclude “that many GAFAM [Google, Amazon, Facebook, Apple, and Microsoft] acquisitions are driven by the desire to purchase valuable R&D inputs, such as the technology, IP rights and/or people of the target firms.”⁶⁶ Of the 175 deals they examined over the period from 2015 to 2017, they “find no evidence in our sample that killer mergers are widespread, but just one potential case that would have deserved closer investigation by competition watchdogs.”⁶⁷ The case they identify is Facebook’s 2016 acquisition of the photo filter app Masquerade.⁶⁸ Additionally, similar to Latham et al., Gautier & Lamesch raise the possibility that some of the acquisitions were reverse killer acquisitions where the goal was not to realize synergies but to protect its dominance by obtaining a valuable asset on the market and discontinuing its own development and product. Ultimately, they conclude “[t]he answer to this question is far from obvious and would need a case by case analysis.”⁶⁹

Finally, Argentesi et al. examine mergers involving Google, Facebook, and Amazon between 2008 and 2018.⁷⁰ They find “there are considerable difficulties in understanding the competitive implications of acquiring a young firm as, at that stage in their life cycle, their evolution is still uncertain and, thus, it is very difficult to determine

⁶⁶ See Axel Gautier & Joe Lamesch, *Mergers in the Digital Economy* 27 (CESifo Working Paper No. 8056, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3529012.

⁶⁷ *Id.* at 4. The authors, again, use a broader definition for killer acquisition. *See id.* at 2 (“This type of merger is now referred to as a killer merger: the firm acquires a target which develops a technology that can be used to compete with its own products in the future and the acquisition kills the competitive threat.”).

⁶⁸ *Id.* Notably, Facebook has recently shut down the app. *See* Taylor Lyles, *Facebook is Shutting Down MSQRD, the AR Selfie App it Acquired in 2016*, VERGE (Mar. 13, 2020), <https://www.theverge.com/2020/3/13/21178982/msqrd-ar-selfie-app-shutting-down-mobile-app-april-facebook>. It is not clear whether the lack of commercial success for Masquerade further supports the possibility that this was a killer acquisition or proves that it was never a real competitive threat in the first place.

⁶⁹ *Id.* at 27.

⁷⁰ *See* Argentesi et al., *supra* note 25, at 1.

if the target will grow to become a significant competitive force.”⁷¹ With this statement, Argentesi et al. really summarize the difficulties that face competition agencies and authorities. The authors also do a thoughtful review of the United Kingdom’s Competition and Markets Authority’s (CMA) decisions to clear both the Facebook-Instagram and Google-Waze acquisitions.⁷² While they make compelling arguments on both sides of the debate, they do not reach a firm conclusion.⁷³

Overall, these recent examinations into prior acquisitions of big tech do not reach definitive conclusions. There is a clear recognition that forecasting product and technological developments in dynamic and highly innovative markets is an inherently difficult exercise. One take-away, which is relevant for our policy discussion, is that the evidence is not at the level to suggest that agencies are fundamentally missing anticompetitive potential and nascent acquisitions and, consequently, a change in presumption is required.

IV. ARE THE CURRENT ANTITRUST LAWS AND THE ENFORCEMENT OF THOSE LAWS SUFFICIENT TO COMBAT THE PROBLEM?

Based on the current evidence and scholarship, we believe the U.S. federal antitrust laws and the enforcement of those laws are sufficient and effective in preventing anticompetitive acquisitions of potential and nascent competitors. In particular, the doctrine of potential competition is well-developed and has a long history in antitrust

⁷¹ *Id.* at 19.

⁷² At the time of those acquisitions, the competition authority in the UK was the Office of Fair Trading (OFT).

⁷³ Regarding Facebook-Instagram, the authors conclude: “[W]hether the decision has ultimately harmed consumers also depends on the benefits accrued through the merger, which may have countervailed anti-competitive effects . . . These efficiencies seem also to be merger-specific, and it is difficult to assume that they would have arisen in a counterfactual scenario where Instagram was not acquired by Facebook or another social network.” *Id.* at 27–28. Regarding Google-Waze, the authors conclude: “While there appear to be some gaps in the analysis undertaken by the Authorities, it is hard to say whether the clearance of the merger has led to a detrimental outcome for consumers.” *Id.* at 32.

jurisprudence and agency practice.⁷⁴ The phrase potential competition is used in the very first sentence of the U.S. DOJ and FTC's Horizontal Merger Guidelines.⁷⁵ This acknowledgement of the importance of future competition is not a surprise given that the current antitrust doctrines of potential competition (*El Paso Natural Gas*) and nascent competition (*Microsoft*) were originally developed by the U.S. antitrust agencies.

Even if the doctrines are well-developed, are the antitrust agencies sufficiently diligent in monitoring and, if needed, in bringing enforcement actions? We believe the evidence is in the affirmative based, in part, on active enforcement in this area. For example, when Nielsen proposed to purchase Arbitron in 2013,⁷⁶ the FTC brought a "potential-potential competition" case. This novel theory of harm involved an allegation of future harm based on a product that did not exist; a market that did not exist (that is, "national syndicated cross-platform audience measurement service"⁷⁷); and a lack of commitment from either party that it would enter in the near future. Yet, in 2014, the FTC concluded that Nielsen and Arbitron were the two firms most likely to be potential-potential competitors in this future market. Whatever the merits of the case,⁷⁸ it represents the agencies on the frontier of the potential competition doctrine.

Similarly, in 2013, the FTC brought a number of potential competition cases: *Actavis-Warner Chilcott*, *Mylan-Agila*, and *Polypore-Microporous*. Both the *Actavis* and *Mylan* cases involved the protection of competition in a number of future generic drug

⁷⁴ See Dorigan, *supra* note 6, at 418.

⁷⁵ Horizontal Merger Guidelines § 1 ("These Guidelines outline the principal analytical techniques, practices, and the enforcement policy of the Department of Justice and the Federal Trade Commission . . . with respect to mergers and acquisitions involving actual or potential competitors . . .").

⁷⁶ See Press Release, Nielsen Holdings N.V. and Arbitron Inc., Nielsen Acquires Arbitron (Sept. 30, 2013), <https://www.nielsen.com/us/en/press-releases/2013/nielsen-acquires-arbitron>.

⁷⁷ See Complaint, Nielsen Holdings N.V., Dkt. No. C-4439, 2014 WL 869523, at *2 (FTC Feb. 24, 2014).

⁷⁸ See Dissenting Statement of Commissioner Joshua D. Wright, Nielsen Holdings, N.V. and Arbitron Inc., Dkt. No. C-4439, 2013 WL 5348551, at *20 (FTC Sept. 20, 2013), https://www.ftc.gov/sites/default/files/documents/public_statements/dissenting-statement-commissioner-joshua-d.wright/130920nielsenarbitron-jdwstmt.pdf.

markets.⁷⁹ *Polypore* was a consummated acquisition that was unwound when the Commission concluded, *inter alia*, that, “[a]lthough Microporous was not producing automotive separators at the time of the acquisition, it was preparing to compete actively in this market and was already marketing and testing its products with customers.”⁸⁰ In 2014, the FTC brought a case involving pharmaceutical companies Endo Health Sciences and Boca Life Science Holdings, where “the FTC’s settlement preserves future competition for three generic drugs where the proposed acquisition would eliminate one likely future entrant from a very limited pool of future entrants.”⁸¹

In 2015, the FTC challenged Steris Corporation’s acquisition of Synergy Health.⁸² Specifically, the Commission alleged that the acquisition “would violate the antitrust laws by significantly reducing future competition in regional markets for sterilization of products using radiation, particularly gamma or x-ray radiation.”⁸³ An Ohio district court, however, ultimately disagreed with the FTC and held that the agency had failed to show that Synergy would have entered “but for” the merger.⁸⁴

In 2017, the FTC, along with several states, brought a nascent competition case against Mallinckrodt ARD, formerly known as Questcor Pharmaceuticals, alleging that “Questcor illegally acquired the U.S. rights to develop a competing drug, Synacthen Depot. The acquisition stifled competition by preventing any other company from using

⁷⁹ See Complaint, Actavis, Inc. and Warner Chilcott PLC, Dkt. No. C-4414, 2013 WL 5498011 (FTC Sept. 27, 2013); Complaint, Mylan Inc. et al., Dkt. No. C-4413, 2013 WL 5498010 (FTC Sept. 26, 2013).

⁸⁰ See Complaint, Polypore Int’l, Inc., Dkt. No. 9327, 2008 WL 4184837, at *4 (FTC Sept. 9, 2008), <https://www.ftc.gov/sites/default/files/documents/cases/2008/09/091008cmp9327.pdf>.

⁸¹ See *In the Matter of Endo Health Solutions Inc., Boca Life Science Holdings LLC, and Boca Pharmacal, LLC*, Dkt. No. C-4430, FED. TRADE COMM’N (Mar. 21, 2014), <https://www.ftc.gov/enforcement/cases-proceedings/131-0225/endo-health-solutions-inc-boca-life-science-holdings-llc-boca>.

⁸² See *In the Matter of Steris/Synergy Health*, Dkt. No. 9365, FED. TRADE COMM’N (Oct. 7, 2015), <https://www.ftc.gov/enforcement/cases-proceedings/151-0032/sterissynergy-health-matter>.

⁸³ *Id.*

⁸⁴ See *FTC v. Steris Corp.*, 133 F. Supp. 3d 962 (N.D. Ohio 2015).

the Synacthen assets to develop a synthetic ACTH drug, preserving Questcor's monopoly and allowing it to maintain extremely high prices for Acthar."⁸⁵ Also in 2017, the FTC blocked the combination of CDK-Auto Mate based, in part, on a theory involving nascent competition: "The complaint alleged harm to current competition, but focused even more sharply on harm to future, or nascent competition. That harm arose from the smaller competitor's substantial efforts to remake itself into a greater competitive threat going forward."⁸⁶

Even in cases where the agencies do not bring action, theories of harm involving potential and nascent competitors are actively investigated. For example, in 2019, in a 5-0 decision, the FTC closed its investigation into Roche Holding's proposed acquisition of Spark Therapeutics.⁸⁷ Noting that the "FTC strives to closely scrutinize incumbents' acquisitions of current, potential, and nascent competitors," the agency engaged in a 10 month investigation where a "key question in the investigation was whether Roche would have the incentive to delay or discontinue Spark's developmental gene therapy for hemophilia A."⁸⁸ The commission ultimately concluded the acquisition was procompetitive given that "[a]s the other companies endeavor to bring their gene therapies to market, Roche would have the incentive to accelerate, rather than decelerate

⁸⁵ See Press Release, Fed. Trade Comm'n, Mallinckrodt Will Pay \$100 Million to Settle FTC, State Charges It Illegally Maintained its Monopoly of Specialty Drug Used to Treat Infants (Jan. 18, 2017), <https://www.ftc.gov/enforcement/cases-proceedings/1310172/mallinckrodt-ard-inc-questcor-pharmaceuticals>.

⁸⁶ D. Bruce Hoffman, Dir., Bureau of Competition, Fed. Trade Comm'n, Remarks at GCR Live Antitrust in the Digital Economy: Antitrust in the Digital Economy: A Snapshot of FTC Issues 6 (May 22, 2019), https://www.ftc.gov/system/files/documents/public_statements/1522327/hoffman_-_gcr_live_san_francisco_2019_speech_5-22-19.pdf.

⁸⁷ See Press Release, Fed. Trade Comm'n, Federal Trade Commission Closes Investigation of Roche Holding AG's Proposed Acquisition of Spark Therapeutics, Inc. (Dec. 16, 2019), <https://www.ftc.gov/news-events/press-releases/2019/12/federal-trade-commission-closes-investigation-roche-holding-ag>.

⁸⁸ Statement of the FTC, In the Matter of Roche Holding/Spark Therapeutics, Comm'n File No. 1910086 (December 16, 2019), https://www.ftc.gov/system/files/documents/public_statements/1558049/1910086_roche-spark_commission_statement_12-16-19.pdf.

the development of Spark’s gene therapy in order to compete for gene therapy patients.”⁸⁹

These recent investigations and enforcement actions suggest that the agencies are not only active in this area but are also willing to push the bounds of the current potential and nascent competition doctrines. Seeing active enforcement should not come as a surprise given that these cases turn on an assessment of the likelihood of entry. Entry analysis is a part of every agency merger review—whether horizontal or vertical, and the agencies have developed a great deal of expertise in this area.⁹⁰ These are fact-intensive inquiries that should not rely on set presumptions (unless those presumptions are well-founded with experience and evidence) regarding the impact of entry on consumer welfare and innovation.⁹¹

Do the antitrust agencies always make the right decision? Almost certainly not. There will be some level of error. Again, the question is not whether the agencies have false positives or negatives but rather whether, with active enforcement, there is evidence of a systematic bias in the agencies’ decisions. A success rate of 90 percent still implies that, for every ten decisions, one will be decided incorrectly. An ex post assessment focusing on the one error and ignoring the other nine correct decisions is engaging in hindsight bias. This is not to say that the agencies should not be scrutinized or should not continue to improve in their missions.

V. GUIDANCE IN ASSESSING ACQUISITIONS OF NASCENT AND POTENTIAL COMPETITORS

In this section, we consider a number of points that are worth emphasizing when assessing nascent and potential competition. First, it seems critical whether the

⁸⁹ *Id.*

⁹⁰ See, e.g., Carl Shapiro, *The 2010 Horizontal Merger Guidelines: From Hedgehog to Fox in Forty Years*, 77 ANTITRUST L.J. 49, 54 (2010) (“... the 1992 Guidelines introduced a more detailed and sophisticated analysis of entry.”).

⁹¹ See Statement of the FTC, *supra* note 88 (“Merger investigations are highly fact-specific, and the determination of whether a transaction will result in potential competitive harm requiring an enforcement action is driven by evidence.”).

acquisition is primarily vertical or horizontal in nature. While a vertical merger certainly has the potential to be anticompetitive—primarily through foreclosure or raising rivals’ costs—there is also the potential for significant efficiencies. Vertical mergers are fundamentally different from horizontal ones since they involve a merger of complements along a production process. In contrast, nascent and potential competition cases, when properly formulated, involve current or future competitors. Of course, this distinction will not always be crystal clear. For example, is Instagram a substitute or complement to Facebook? The point is that the more that there is a horizontal overlap, *e.g.*, if Microsoft acquired Netscape, the more scrutiny the acquisition should receive.

Second, does the acquired firm have rivals? Is the startup competing in a fairly crowded competitive space or does it have identifiable unique assets (including branding, distribution, and intellectual property) that sets it apart? The idea is that the more “different” the product is from (perhaps distant) rivals, the more likely the acquisition removes from the market an input or complementary product that rivals to the acquirer could use to bolster their competitive positions. This is similar to the point that the Crémer Report raises regarding acquisitions involving a high growth product.⁹² We certainly agree that this is a useful metric to focus on; although, the scope of the inquiry should go beyond just high growth products as the growth rate is just one potential signal of a unique asset. While identifying assets with a great deal of market potential could be a challenge, there are factors that could help in this determination such as the number and strength of other competing products; the uniqueness of the patents and other intellectual property; and the growth rate of the product compared to similarly situated products.

Similarly, David Pérez de Lamo has proposed an approach focused on the

⁹² Crémer Report, *supra* note 2, at 116.

competition over innovation.⁹³ The idea is to closely examine whether “the target company is both pursuing a discernible innovation objective (namely creating a potentially competing product from an adjacent market), and that it has the ability to carry it through.”⁹⁴ The objective is less about determining whether the competing product would eventually reach the market but more on identifying

an analysis of (i) *essential resources* (e.g. intellectual property rights, data sets, large user bases, specialized and expensive hardware, access to financing, engineering skills, and computation power); (ii) *capabilities* (as a function of the company’s skillset, strategy, governance structure, and past behavior); (iii) *patent overlaps*; (iv) *investment plans of both merging parties* setting innovation targets; and (v) *internal documents of the acquirer* with post-merger divestment plans, should allow the Commission to define the relevant *innovation space* and perform an innovation competition assessment in digital transactions.⁹⁵

Identifying innovation overlaps, rather than just projections regarding future market success, offers agencies and courts some tangible basis to assess whether the acquisition is being pursued to lessen competition or to improve quality and innovation.

In sum, the above guidance is ultimately about assessing whether there is a reasonable basis to be concerned that the acquisition eliminates a projected increase in competition in the incumbent’s core source of market power. Given this, the analysis comes down to the strength and quality of the evidence. We believe that the stronger the evidence that there is a current or near-term horizontal overlap, then the greater need for a strong efficiency rationale. Further, an acquisition should receive greater scrutiny if the acquired assets and product are fairly unique in a given innovative product space. In contrast, we find that poor indicators of anticompetitive harm include whether or not there are other bidders and, for vertical mergers, whether the acquiring firm was looking to develop a similar input or product. While these are just initial conjectures, it seems the number of other bidders is a noisy signal of uniqueness and demand for a product.

⁹³ See Pérez de Lamo, *supra* note 4, at 58.

⁹⁴ *Id.*

⁹⁵ *Id.* (emphasis in original).

Secondly, the “make versus buy” decision is fundamental to the theory of the firm and there are numerous reasons why buying an input is more efficient than developing it in house including realizing integration benefits significantly earlier than through internal development.

CONCLUSION

The agencies should and must continue to vigorously enforce the antitrust laws. As a society, we want technology companies, both large and small, to operate and innovate within the bounds of conduct that is based on the merits rather than based on the ability to control the market, keep competitors out, and lower consumer welfare. This is most certainly true in the area of potential and nascent competition—as there are justifiable concerns that large technology companies are purchasing rivals before they can mature into vigorous competitors. Yet, just as with other areas of antitrust that involve complex considerations of both potential anticompetitive harms and procompetitive benefits, the agencies must investigate these matters based on the particular evidence in front of them rather than on presumptions of anticompetitive harm. We find the agencies’ history of robust enforcement action in this area attests to their willingness and ability to bring these types of cases when needed.

Competition in the Digital Advertising Market

Catherine Tucker*

INTRODUCTION

Digital platforms have attracted unparalleled recent interest from antitrust and competition authorities.¹ Many digital platforms are free to consumers and are supported by advertising. Given this, the question of how advertisers approach and allocate advertising matters for understanding the potential competitive implications of digital platforms. The topic of digital advertising and competition is vast, so in this paper I focus on analyzing a very simple question—what drives advertisers to substitute across advertising venues, and what barriers might exist to an advertiser switching or substituting between advertising venues?

When there are multiple users of a platform, it is important to not approach the question of market definition and substitution simply through the lens of the consumer side of digital platforms. The recent Stigler Report on the economy² for example, stated that “[m]arket definition will vary according to what consumers are substituting between, whether there is competition on the platform between complements, or competition between platforms, or competition between a platform and potential or nascent competitors regarding possible future markets.” By contrast, this paper focuses

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¹ Competition & Markets Authority, *Online Platforms and Digital Advertising: Market Study Final Report* (Jul. 1, 2020), <https://www.gov.uk/cma-cases/online-platforms-and-digital-advertising-market-study> (hereinafter “CMA Report”); Australian Competition & Consumer Commission, *Digital Platforms Inquiry: Final Report* (Jun. 2019), <https://www.accc.gov.au/publications/digital-platforms-inquiry-final-report>.

² STIGLER CENTER, STIGLER COMMITTEE ON DIGITAL PLATFORMS FINAL REPORT (Sept. 2019) (hereinafter “Stigler Report”), available at <https://www.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf>.

on the question of how advertisers themselves approach substituting between different types of advertising.

Prior to the digital revolution, advertising was one of the most problematic parts of a firm's marketing or overall business portfolio. In particular, it was nearly impossible for any firm to take a quantitatively-driven perspective on how successful its advertising investments were. As a result, decisions about how to allocate advertising expenditures were not generally reflective of a quantitative approach or optimized against any metric. However, in this chapter I argue that the digitization of advertising has made it one of the most quantifiable and consequently optimizable parts of spending in a firm's marketing portfolio. This extends arguments I made in earlier work in 2013.³

I. DIGITAL TRANSFORMATION

There are three crucial drivers of the digital transformation of advertising: Measurement, placement, and targeting. However, most policy papers on competition in advertising markets focus only on targeting.⁴

A. Measurement

Before the digital era, firms could not measure the effectiveness of advertising. As a result, it was an unsatisfactory part of any firm's strategy. Firms had little information about what worked and what didn't. When talking about advertising, people love to use the quote, "Half of my advertising is wasted, the trouble is I don't know which half." This quote may understate the issue.⁵ Recent academic research of TV ad campaigns has

³ Catherine Tucker, *The Implications of Improved Attribution and Measurability for Antitrust and Privacy in Online Advertising Markets*, 20. GEO. MASON L. REV. 1025 (2013).

⁴ For example, the Stigler Report only refers to measurement in the context of measuring the value of news. See, Stigler Report, *supra* note 2. On the other hand, targeting is a crucial plank of the Stigler Report's discussion in, "An Economic Perspective on the Digital Market Structure."

⁵ This quote is often ascribed to John Wanamaker, an early pioneer in department stores. However, the historical accuracy of it is not clear and the quote has also been ascribed to many others. See, e.g., *Variations on the "But We Don't Know Which Half" Line*, TERRY GRAY BLOG, available at <https://staff.washington.edu>

suggested that campaigns by over two-thirds of brands have negative or insignificant effects on sales.⁶

B. Placement

Placing ads in the digital era is much cheaper and easier. In the analog era, it required costly human interaction and was a largely manual process. Many firms hired ad agencies because agencies were able to better coordinate and reduce the costs of placing ads on television, the news media, and radio.⁷ By contrast, in the digital era, the existence of ad platforms' application programming interfaces ("APIs") and 'self-service' platforms mean that human intervention is rarely needed. Of course, large firms still employ digital agencies to help them scale and deploy resources. Small firms, who previously perhaps advertised by distributing leaflets door-to-door or putting up notices in coffee shops and diners, are now able to advertise digitally because their small budgets are no longer a barrier to them being able to deploy advertising in a world where there are few 'minimum buys' and anyone can place an ad in minutes via a self-service platform.

C. Targeting

Targeting is important in the digital advertising economy. From an economics perspective it avoids wastage for both advertiser and consumer. Targeting allows advertisers to not waste money showing ads to people who will never be interested in their product or service, and allows consumer to only see ads for products they may be

/gray/misc/which-half.html (last visited on Nov. 22, 2019).

⁶ See Bradley Shapiro, Gunter J. Hitsch, & Anna Tuchman, *Generalizable and Robust TV Advertising Effects* (working paper, Aug. 5, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3273476. Studies of online advertising suggest small effects on purchase intent. See Avi Goldfarb & Catherine E. Tucker, *Online Display Advertising: Targeting and Obtrusiveness*, 30 MKTG. SCI. 389-404 (2011).

⁷ Alvin J. Silk & Ernst R. Berndt, *Scale and Scope Effects on Advertising Agency Costs*, 12 MKTG. SCI. 53-72 (1993).

interested in.

In general, all three parts of the digital revolution in advertising are important to keep in mind when thinking about advertising markets. Advertising markets have become unrecognizable from even a decade ago. This fluidity is a central theme that should be front-and-center when trying to understand any persistent attempt at a market definition.

II. THE MARKETING FUNNEL AS LENS TO HOW ADVERTISERS THINK ABOUT ADVERTISING

When understanding competition, it is useful to understand how a “customer” - in this case an advertiser - approaches advertising allocation decisions. To do that I elaborate on a bedrock concept in marketing theory, which is the marketing funnel.

A. What is the Marketing Funnel?

The marketing funnel, at over a century old, is one of the oldest frameworks in marketing. It describes the way that a firm can deploy marketing to address a variety of hurdles customers face if they are to purchase a new product or service. One of the earliest attempts at describing this process was in 1898, by advertising executive E. St. Elmo Lewis. Lewis described four steps through which a customer engages an advertisement, which he called AIDA: A - Attention, I - Interest of the Customer, D - Desire, and A - Action.⁸ Through AIDA, an advertiser would introduce the product to the consumer, convince the consumer of their need for the product, and, ideally, sell them the product at the end of the exchange.⁹

The central insight of the marketing funnel is that an advertiser can use ads to influence a consumer at each successive stage of that consumer’s path to purchase. The

⁸ Thomas E. Barry & Daniel J. Howard, *A Review and Critique of the Hierarchy of Effects in Advertising*, 9 INT’L J. ADVERT. 121 (1990).

⁹AIDA, OXFORD REFERENCE, available at <https://www.oxfordreference.com/view/10.1093/oi/authority.20110803095432783> (last visited Aug. 7, 2020).

funnel can be broken up broadly into three stages: The upper, middle, and lower funnel.

In the “upper funnel,” the advertiser’s main goal is to increase “Awareness” of the product or brand among potential consumers. Therefore, the advertiser’s focus is on deploying tactics that lead to awareness. The awareness stage may be relevant for new or existing brands. If customers are already aware of a brand, advertising can create the “mere exposure” effect, where repeated exposure to a brand can help prompt brand affinity.

In the “middle funnel,” the advertiser’s main goal is to ensure that customers—who are searching for different options, evaluating them, and deciding which products deserve consideration—end up considering their product in depth. In this stage, a consumer’s role is generally less passive. Consumers gather more information about particular products or services. As their preferences become more refined, consumers may introduce or eliminate products based on price, perceived quality, connection to the product or brand’s mission, or other factors. Consumers in the consideration stage look for differences in the products and may turn to customer reviews, review websites, or other digital information sources. Therefore, the advertiser’s focus is on deploying tactics which lead to “Evaluation” or “Consideration.”

In the “lower funnel,” the advertiser’s main goal is to ensure that customers who are about to purchase a product end up purchasing their product. At this point, a consumer likely has decided which product to buy, and the advertiser’s goal is to make the purchase as easy as possible. Advertisers often include incentives in this stage as well, such as a personalized coupon with a time limit, to increase the likelihood of sale. Therefore, the advertiser’s focus is on deploying tactics which lead to “Conversion.”

The marketing funnel is a canonical enough framework that academics have spent decades trying to understand its nuances. Several papers examine how the framework

can be adapted for the digital age.¹⁰ Recent research suggests that the purchase process tends to be far more iterative than earlier models assumed.¹¹

B. How Did Advertisers Use the Marketing Funnel in the Analog Past?

In the past, due to the lack of data to inform decision making, the organizing principle of the marketing funnel artificially created separation in advertising budgets.

First, advertisers used the marketing funnel as a conceptual framework for determining what types of advertising were needed. In this case, the funnel was used to determine, for a particular customer segment and product, the type of advertising that was likely to be most effective given that segment's natural path to purchase.

Advertisers deployed the marketing funnel as a way of dividing up the purpose and use of a marketing budget. For example, for a traditional brand such as Tide laundry detergent, the funnel provided a framework for distinguishing between 1) the portion of the budget that was devoted to coupons (for example, appearing in a Sunday newspaper insert), which could be thought of as influencing the "Purchase stage," and 2) the portion of the budget that was devoted to TV and radio, which could be thought of as influencing the "Awareness stage."

In the past, advertisers did not know how an ad influenced a consumer at a particular stage in their path to purchase. But as a rule of thumb, advertisers knew that the more engaging and storytelling the format of the ad, the more likely it was to perform well at the top of the funnel, and the more informative the ad was, the more likely the ad was to perform well further down the funnel. Therefore, it made sense to cluster ad budgets by visual appearance into "Attention-getting ad formats" and "Information-

¹⁰ See, e.g., Mark Ritson, *Mark Ritson: If you Think the Sales Funnel is Dead, You've Mistaken Tactics for Strategy*, MKTG. WEEK (Apr. 6, 2018), <https://www.marketingweek.com/mark-ritson-if-you-think-the-sales-funnel-is-dead-youve-mistaken-tactics-for-strategy/>.

¹¹ Demetrios Vakratsas & Tim Ambler, *How Advertising Works: What Do We Really Know?*, 63 J. MKTG. 26 (1999).

giving ad formats,” as that matched the purposes of the ad.

Historically, the difficulty of measurement meant that these budgets used to be relatively static and advertisers did not fluidly shift money between different ad budgets devoted to different types of media because they did not know enough about the contribution of each type of ad budget to overall ad return on ad spend. This may explain why, in the earliest years of the commercialized World Wide Web, marketers initially thought separately about a “Display Ad” budget and a “Search Ad” Budget. “Display” as a budget mapped on to “Awareness” or the upper funnel, and “Search” mapped on to “Evaluation” and “Purchase,” or the middle and lower funnel. Consistent with the early way that advertisers divided up or reported their ad budgets, antitrust authorities determined that there were separate markets for search ads and display ads in cases such as *Google-DoubleClick*.¹² This demarcation reflects that long-gone era. In what follows, I explain why such a market definition is outdated and not relevant for 2020.

III. HOW DOES THE MARKETING FUNNEL WORK IN THE DIGITAL AGE?

A. The Digital Transformation of the Marketing Funnel Explains Why Advertisers Are Ready to Substitute Between More Advertising Venues

The biggest shift in the use of the marketing funnel in the digital era has been in measurability. Rather than the funnel being merely a theoretical way of understanding consumer behavior, advertisers can now measure the relative effectiveness of ads placed at each stage of the funnel and measure the performance of ads along the “full funnel.” As long as an advertiser can track whether a consumer who sees an ad eventually converts, it does not matter where the consumer saw that ad or whether that ad was intended to provoke awareness, consideration, or purchase. What matters is the relative

¹² *Statement of the Federal Trade Commission Concerning Google/DoubleClick*, FTC File No. 071-0170 (Dec. 20, 2017), available at https://www.ftc.gov/system/files/documents/public_statements/418081/071220googlec.-commstmt.pdf.

return on advertising spend of that ad placement: That is, relative to its price, how many profitable conversions did it lead to? Ultimately, an advertiser interested in measuring the return on its ads does not care whether or not its ads are primarily textual or primarily visual in format. Instead, it cares about the implied cost per conversion of a customer. Indeed, advertisers themselves are constantly experimenting with ad formats.

The idea that advertising media could serve multiple parts of the funnel is not new. A TV ad could arguably be directed at the “action stage” if the ad directed consumers to immediately make a call to purchase the product. A TV ad could also be an awareness ad, which simply ensured that a consumer would start to remember the positioning of a certain brand. However, what is new is that advertisers can now measure how an ad performs directly in terms of its effects on actions, rather than assuming it may perform in a certain way.

What is also new is the extent to which multiple platforms are explicitly positioning their advertising offerings as addressing the needs of advertisers throughout the entire funnel.

Figure 1 shows how Google presents the variety of objectives that advertisers can optimize for using its display ads. The range of objectives is very broad, spanning the upper to lower funnel. Figure 2 shows how Twitter also presents a variety of objectives. Again, it is notable both how the objectives reflect the different parts of the traditional funnel, but also the sheer extent to which Twitter positions its advertising product as covering the entire funnel. In each of these figures, several things are clear. First, the ad venue uses the language of the traditional marketing funnel to help advertisers demarcate their goals for launching a campaign on the ad venue. This language shows the continued conceptual relevance of the marketing funnel in today’s digital advertising world. Second, these ad venues allow advertisers to self-select their funnel goal and offer different measurement techniques to help advertisers determine the success of their ads. Third, these ad venues are eager to present their products as spanning the entire funnel,

from upper-funnel aims, such as awareness, to lower-funnel objectives, such as conversions.

Goals for Display campaigns ^		
Goal	When to use it	Types of features
Sales	<ul style="list-style-type: none"> • Drive sales or conversions from customers who are ready to act • Engage with customers who have already contacted you or are very close to making a purchase decision 	Features that start the purchasing or conversion process, such as visually striking ads, automated bidding and targeting, and other features that help you reach people who are actively browsing, researching, or comparing the products and services you sell
Leads	<ul style="list-style-type: none"> • Encourage relevant customers to express interest in your products or services by signing up for a newsletter or providing their contact information 	Features that start the conversion process, such as automated bidding and targeting, visually striking ads, and other features that help you collect email addresses, newsletter signups, or other relevant contact information from people interested in your business
Website traffic	<ul style="list-style-type: none"> • Drive potential customers to visit your website 	Features that help researching customers find potential product options, such as automated bidding, targeting, and ad creation, as well as features that can help you build a list of visitors you can later reconnect with
Product & brand consideration	<ul style="list-style-type: none"> • Encourage potential customers to explore what you offer • Educate people about what makes your products or services unique 	Features that help you inspire people to choose your brand, such as automated bidding, targeting, and ad creation, as well as visually appealing ads that help drive engagement
Brand awareness & reach	<ul style="list-style-type: none"> • Increase awareness of your products or services • Introduce customers to what you offer when releasing a new product or expanding your business into a new area 	Features that help you build brand recognition, such as compelling visual ads, bid strategies that drive views, and other features that help attract new customers and capture their attention

Figure 9: Google Display Ads Can Be Used for a Full Range of Funnel Objectives

Source: <https://support.google.com/google-ads/answer/7450050?hl=en>

Objective

Decide what the goal of your campaign is. Do you want to drive more link clicks? Drive up engagement?

Each of our campaign objectives are specialized to fit specific goals and serve each part of the marketing funnel. You'll only be charged when someone takes that action.

Awareness

- **Reach:** Maximize your ad's reach. Pay for: impressions (cost per 1,000 Tweet impressions)

Consideration

- **Video views:** Get people to watch your video. Pay for: video views (cost per view)
- **Pre-roll views:** Pair your ad with premium content. Pay for: views on your pre-roll (cost per view)
- **App installs:** Get more people to install your app. Pay for: app installs, app clicks, or App Card clicks (cost per app click or cost per install)
- **Website clicks:** Drive traffic to your website. Pay for: link clicks and Website Card clicks (cost per click)
- **Engagements:** Get more people to engage with your Tweet. Pay for: engagements (cost per engagement)
- **Followers:** Build a larger audience for your brand. Pay for: follows (cost per follow)

Conversion

- **App re-engagements:** Get people to take action in your app. Pay for: app clicks or App Card clicks (cost per app click)

Figure 10: Twitter Ads Can Be Used for a Full Range of Funnel Objectives
Source: <https://business.twitter.com/en/help/account-setup/campaigns-101.html>

B. The Digital Transformation of the Marketing Funnel Explains Why Advertisers Are Ready to Substitute Between More Advertising Formats

In the past, advertisers believed that in the upper funnel, because they were competing against clutter, they needed to use storytelling and highly visual formats to gain attention. A focus on engagement is why TV advertising has been historically so successful—it is the best format for engaging users and telling them the story the brand wants them to hear. However, this rule has been replaced by measurement, meaning that advertisers can effectively use any format at any place in the funnel and evaluate whether it is effective for that particular target audience. Ultimately, an advertiser is indifferent between whether it is a video ad, or a static text-laden ad that influences a customer to purchase as long as they can measure how effective that format was relative to its price.

C. Can Analog Advertising Media Compete in this New Digital Era?

One lingering question is whether or not older forms of media should be thought of as part of the market. How could something such as TV or radio compete in this new digital era? Historically, TV primarily catered to upper funnel objectives. Advertisers had limited ways of measuring ad exposure since users did not interact with TV ads and, following ad exposure, there were no methods of directly tracking a user's activity.

However, there is growing connectivity of television devices to the internet which has changed this. For example, a firm like Roku is able to identify who I am via my IP address, or the email address or mobile phone number I used to sign up. Roku can then use this information to evaluate whether I purchased something after being exposed to an ad, and can also use external data to identify whether I am in a target segment and should have purchased the product. Roku is a leader in propelling television advertising to be more data-driven, as shown in Figure 3, but there are growing signs of the spread of digital tools across the board in TV advertising.¹³


The growth of self-service interfaces for TV advertising promises to make TV far more accessible in the future to advertisers regardless of their size or budget.¹⁴

Some data on the broader topic of movements between digital advertising, television, and print may be helpful. First, Figure 4 shows how US ad spend has varied over the last 70 years. Several facts are surprising. In the past 20 years, TV and Radio have stayed surprisingly steady. Expenditure on newspaper and magazine advertising however, fell steeply starting in 2000. Since 2010, there has been a growth in spending on digital advertising, but spending overall on advertising is lower as a proportion of GDP in the last decade than at any point in the last 70 years.

¹³ For an idea of all the firms innovating in this space see *Convergent TV LUMAscape*, LUMA <https://lumapartners.com/content/lumascapes/convergent-tv-lumascape/> (last visited on Aug. 7, 2020).

¹⁴ See, e.g., *Effectv Ad Planner*, COMCAST, <https://adplanner.effectv.com/> (last visited Aug. 7, 2020), (a self-service marketing tool from Comcast).


Of course, spending reflects both price and quantity. In general, since advertising isn't a widget and it is not clear how you would count quantity across different mediums, it is possible to also look at price-index shifts to try and understand the drivers of the change, and understand what quantity shifts must underlie it.




OneView™

The Ad Platform Built for TV Streaming


A single platform for marketers to reach more cord cutters and measure performance. Advertisers can manage their entire campaign – including OTT, desktop, and mobile campaigns – all in one place.



Reach the most cord cutters of any ad platform



Leverage TV identity data from the #1 TV streaming platform in the US to manage advertising



Reach 4 out of 5 homes in America with OneView

Capabilities







 Better Identity Solutions <p>Access more accurate TV audience data powered by Roku's direct consumer relationships</p>	 Deeper Consumer Insights <p>Plan and measure using unique linear TV data from ACR on North America's #1 licensed TV OS</p>
 Proprietary Audiences <p>Activate more than 100 unique segments based on data from the #1 TV streaming platform in the U.S.</p>	 Instant OTT Forecasting <p>Calculate OTT ad inventory availability in seconds to buy advertising sold by both Roku and other publishers across OTT</p>
 In-Flight Attribution Tools <p>Optimize reach, frequency and performance across OTT, linear TV, desktop, and mobile campaigns</p>	 Guaranteed Outcomes <p>Guarantee demo delivery or business outcomes such as website visits or mobile app downloads</p>

Figure 11:
Source: https://info.advertising.roku.com/Oneview_Product_Guide

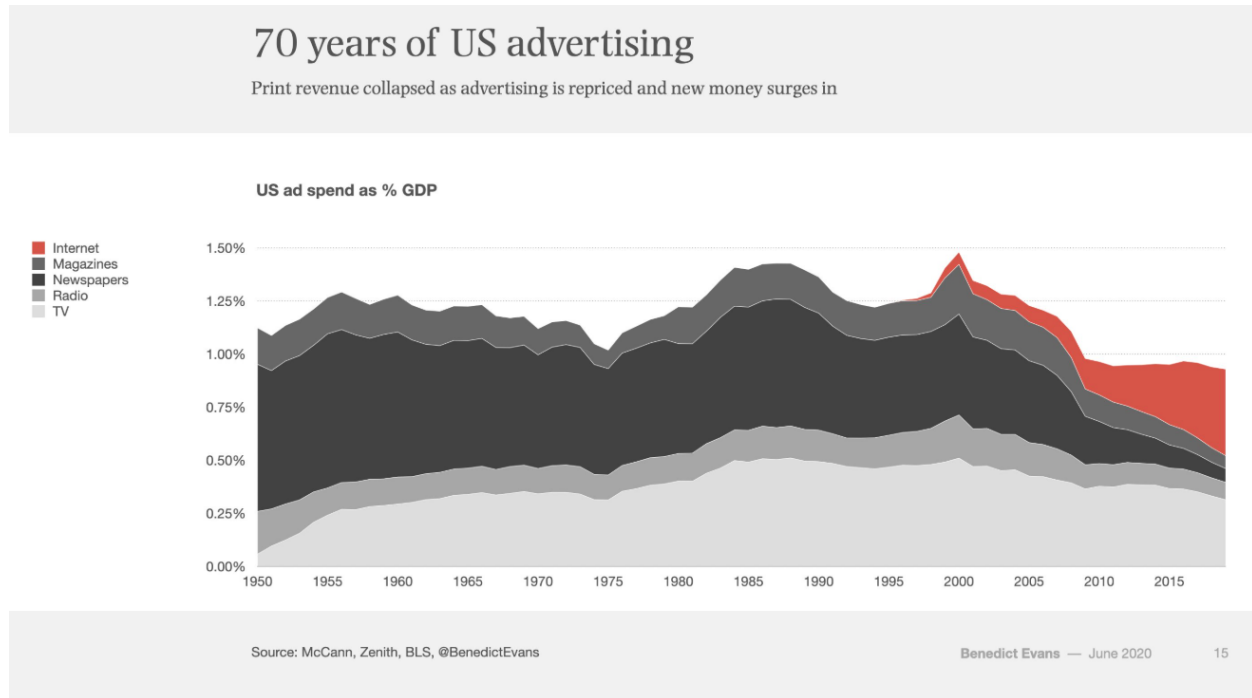


Figure 12:

Source: Benedict Evans Twitter Account, <https://twitter.com/benedictevans/status/1271083311356674049>

Figures 5, 6, and 7 show prices for internet, newspaper, and TV advertising as reported by the Federal Reserve Bank of St. Louis. Two patterns are striking. First, that internet ad prices have fallen a great deal. Second, that newspaper and TV prices have not fallen that much. This implies that when we interpret Figure 4, the quantity of internet advertising must also have increased. Of course, the interpretation of ‘quantity’ is problematic in any advertising setting, the comparability between these time series is not clear. Further, the source of this data is survey-based. However, it is interesting that there is an indication that prices are falling in the digital ad sector, even as relatively more money is being devoted to it.

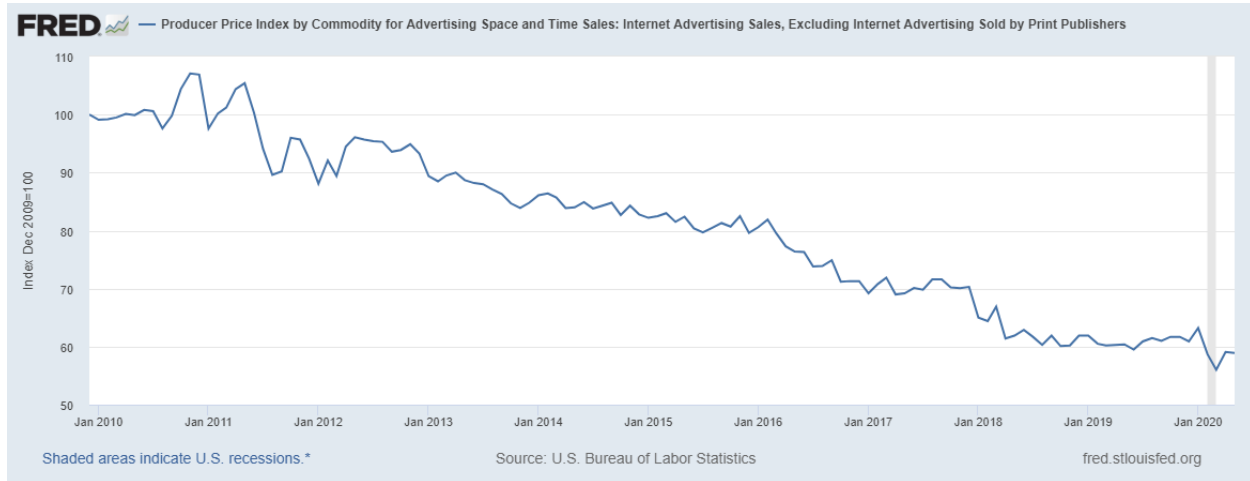


Figure 13: Internet Advertising Prices Are Falling

Source: U.S. Bureau of Labor Statistics, Producer Price Index by Commodity for Advertising Space and Time Sales: Internet Advertising Sales, Excluding Internet Advertising Sold by Print Publishers [WPU365], FRED, Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/series/WPU365> (last visited on Jun. 25, 2020)

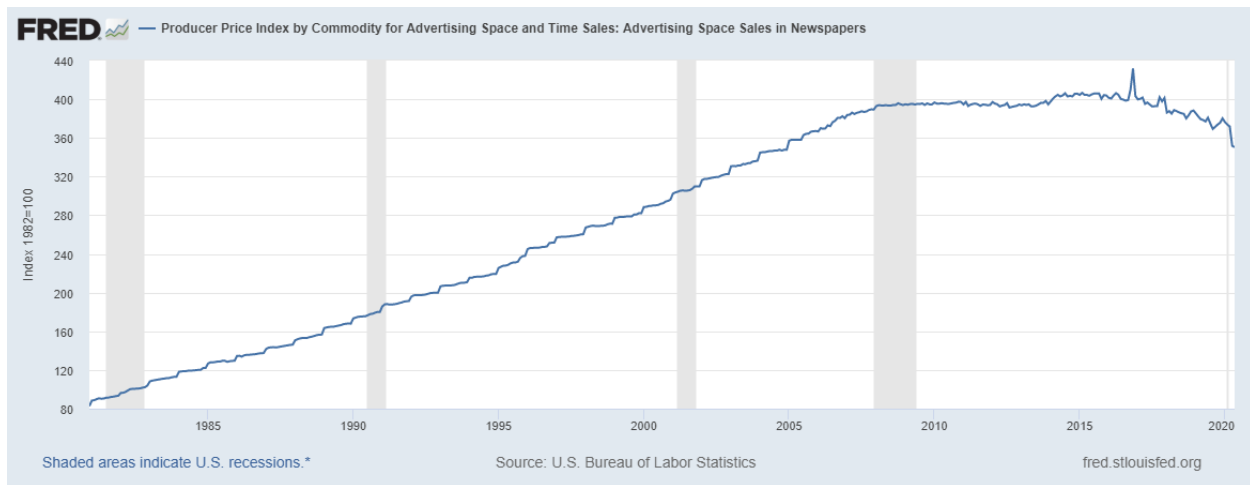


Figure 14: Newspaper advertising prices haven't fallen that much

Source: U.S. Bureau of Labor Statistics, Producer Price Index by Commodity for Advertising Space and Time Sales: Advertising Space Sales in Newspapers [WPU361102], FRED, Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/series/WPU361102> (last visited on Jun. 25, 2020)

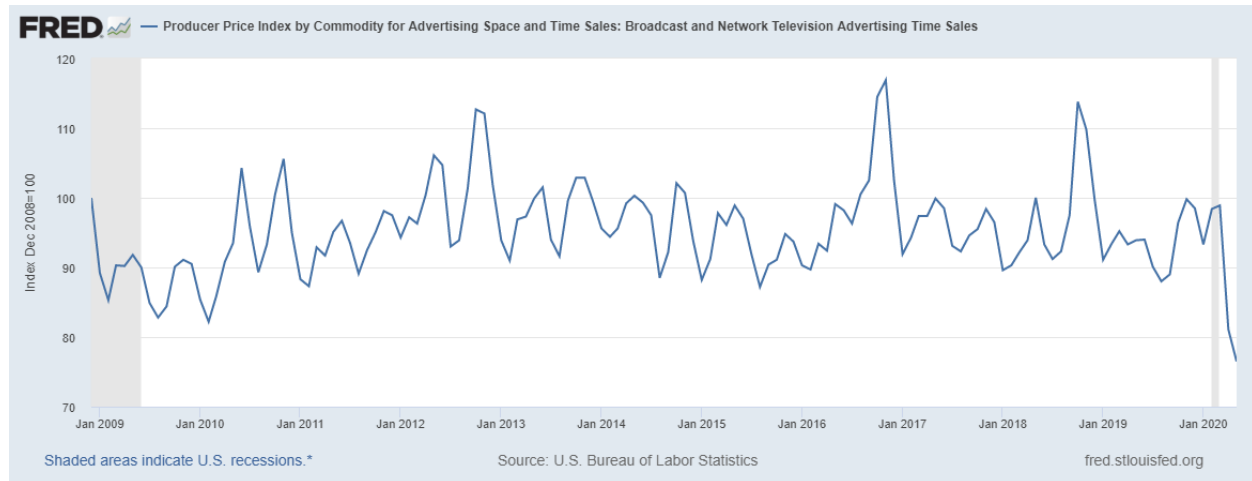


Figure 15: TV advertising prices haven't fallen that much

Source: U.S. Bureau of Labor Statistics, Producer Price Index by Commodity for Advertising Space and Time Sales: Broadcast and Network Television Advertising Time Sales [WPU36210101], FRED, Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/series/WPU36210101> (last visited Jun. 25, 2020)

D. Is There a Useful Distinction Between Integrated and Non-Integrated Ad Product?

One distinction that has been made by recent papers on the topic of antitrust in advertising markets is the distinction between “owned and operated supply” and “open supply.”¹⁵ This is a welcome development, as much of the conversation about digital advertising markets has tended to focus on a few larger firms (such as Google, Amazon, and Facebook) and to ignore the large programmatic digital advertising sector.

One possible reason that the programmatic sector is not talked about much is that, superficially, it appears very complicated and uses a lot of confusing initials.

Programmatic advertising, for example, is made possible through the interaction of Demand Side Platforms (“DSPs”), Supply Side Platforms (“SSPs”), and Data Management Platforms (“DMPs”). Typically, an advertiser (for example GM) would use a DSP to place orders for showing ads to a particular segment of consumers, such as

¹⁵ Competition & Markets Authority, *Online Platforms and Digital Advertising: Market Study Preliminary Report* at 5.21 (Dec. 18, 2019) (“Total spend in display advertising was worth £5.1 billion in the UK in 2018. About 60% of expenditure is made on owned and operated platforms, which typically provide social media to consumers.”).

people who may be shopping for an automobile and who live in a particular region. The DSP would then execute these orders by connecting with an SSP that then connects to large and small websites that sell display advertising spaces. The seeming complexity of the system belies the fact that it is completely automated for the advertiser. The process is set up in a way that allows advertisers to access data about a particular user in real time.

This open system may advantage advertisers. The use of specialized intermediaries by brands to place ads through a provider such as Google enables these specialized intermediaries to pay less for access to digital advertising platforms.¹⁶ However, antitrust authorities agree that this distinction may not be useful for thinking about substitution. For example, the CMA said “[m]edia agencies told us that similar advertising formats and audiences are available on owned-and-operated platforms and in open display advertising and that the targeting techniques available are also roughly the same.”¹⁷ I concur. The analogy I make is that many digital ad platforms are selling an integrated product that combines eyeballs, targeting, and measurement capability. Advertisers can buy these product components separately in the programmatic display market. Given the similar digital tools underlying the integrated and non-integrated products, it stands to reason that they are potential substitutes.

1. Should we be Thinking About Substitution in Advertising or Substitution Across Marketing Communications?

When I teach marketing, one of the preconceptions I always have to dispel is that marketing communications (or marketing itself) consists solely of advertising. Instead,

¹⁶ Francesco Decarolis & Gabriel Rovigatti, *From Made Men to Maths Men: Concentration and Buyer Power in Online Advertising* (CEPR Discussion Paper No. DP13897, July 2019), available at <https://ssrn.com/abstract=3428421>.

¹⁷ CMA Report, *supra* note 1, at ¶ 5.23.

many effective forms of marketing communications which influence consumers' behaviors in the funnel do not actually involve paid advertising. We distinguish three forms of reach that all have similar objectives and functionality from a marketing perspective - paid reach (such as advertising), earned reach (such as viral content), and owned reach (such as a website or white paper).

The amount of money that is spent even on paid reach outside of advertising is surprising. In 2015, for example, Pepsi spent around \$370 million on sponsorships in the US.¹⁸ US sponsorship spending in 2017 was \$23.1 billion.¹⁹ One challenge for sponsorship spending is that, much like traditional advertising, it has been hard to measure its effectiveness.²⁰

In the digital era, sponsorships often take the form of "influencer marketing." In influencer marketing, a brand pays a person who produces popular content to promote their product directly and circumvents paying the website hosting the content. Influencer marketing has grown strongly in the last 5 years, and is projected to be a \$9.7 billion industry in 2020.²¹ An example of this is the YouTube channel 'Ryan's World,' which offers toy recommendations and has over 25.5 million subscribers and 31.8 billion lifetime views.²² The way that influencer marketing is written about by marketers is also

¹⁸ ESP PROPERTIES, TOP SPONSORS REPORT: THE BIGGEST SPONSORSHIP SPENDERS 3, *available at* <http://www.sponsorship.com/IEG/files/81/81197cea-4a0c-4c50-a395-947480bbc3e9.pdf> (last visited on Aug. 8, 2020).

¹⁹ IEG SPONSORSHIPS.COM, WHAT SPONSORS WANT AND WHERE DOLLARS WILL GO IN 2018 2, *available at* <http://www.sponsorship.com/IEG/files/f3/f3cfac41-2983-49be-8df6-3546345e27de.pdf> (last visited Aug. 8, 2020).

²⁰ The Marketing Accountability Standards Board is working hard to change this. *See Sponsorship Accountability Part 5: Measurement*, MKTG. ACCOUNTABILITY STANDARDS BD. (Dec. 11, 2019), <https://themasb.org/sponsorship-accountability-part-5-measurement/> (last visited on Aug. 8, 2020).

²¹ INFLUENCER MARKETINGHUB, THE STATE OF INFLUENCER MARKETING 2020: BENCHMARK REPORT (Mar. 1, 2020), *available at* <https://influencermarketinghub.com/influencer-marketing-benchmark-report-2020/> (last visited Aug. 8, 2020).

²² *Ryan's World*, YOUTUBE, *available at* https://www.youtube.com/channel/UChGJGhZ9SOOHvBB0Y4DOO_w (last visited on Oct. 15, 2020).

interesting to an economist, take this passage for example:

The Unbound Collection by Hyatt had launched the brand on the premise that the authenticity of social media content is the most powerful vehicle for not only telling the story of a non-traditional hotel brand in an unconventional way, but also the right way to connect with a target audience that takes pride in discovering hidden gems. From twitter contests to social influencer engagement campaigns, social first was the storytelling vehicle of choice for The Unbound Collection by Hyatt.

In this case, our strategy was to authentically and seamlessly connect the energy of a rising star (Dua Lipa) and an emotionally resonant story with the brand via a series of highly shareable content pieces that positioned The Confidante Miami Beach (an Unbound Collection by Hyatt hotel) as a “co-star” in her story. After all, its inspiration and its name came from the notion of being a trusted friend.²³

What is interesting is the idea that because it feels more authentic, influencer marketing might offer superior performance to traditional paid advertising. In any case, it illustrates that many marketers may view advertising as a substitute for many different approaches to marketing communications.

IV. WHAT ABOUT OTHER BARRIERS TO SUBSTITUTION

A. Switching Costs

To think about switching costs, it is useful to think about two main potential sources of switching costs for advertisers. The first is the potential for there to be functional fixed costs, in terms of the time and expense needed to set up the first campaign, when an advertiser uses a new ad venue for the first time. The second, related set of switching costs, could be the difficulty in transporting data, campaigns, or insight from advertising venue to advertising venue.

B. Costs of Starting a New Campaign on a New Venue?

An advertiser’s ability to manage relationships with multiple ad venues is relevant to whether they consider the ad venue—and different delivery methods associated with

²³ *Dua Lipa’s New Rules Music Video, The Confidante Miami Beach Part of the Unbound Collection by Hyatt*, SHORTY AWARDS, available at <https://shortyawards.com/10th/dua-lipa-new-rules> (last visited Oct. 15, 2020).

the ad venue—to be a close substitute, because the ad venue closely shapes switching costs. The advent of self-service platforms and digital agencies has reduced the costs considerably for an advertiser of showing ads on multiple platforms.

Self-service ad platforms make the process of launching and monitoring a campaign easier and less costly for advertisers.²⁴ These self-service tools allow ad venues to expand their set of potential customers to include businesses with lower advertising budgets. In addition to being less costly, advertisers benefit from the additional flexibility self-service platforms provide, from the reduction or elimination of the requirement for minimum ad spend, and from the timely feedback they obtain on the performance of their ad campaigns. As a result, self-service ad platforms contribute to reducing switching costs for advertisers, thereby facilitating switching across ad platforms.

In addition, advertisers typically can set up campaigns on a demand-side platform (“DSP”) for little to no monetary cost. For example, in a matter of minutes I was able to set up an account at Reklam, a DSP based in Turkey, and access their self-service platform, in minutes.²⁵ Using this platform, a small advertiser can automate the creation of campaigns and easily start buying a variety of ads in a variety of ad formats, spanning video to native ads. As well as being able to place ads, an advertiser can also track their performance using a pixel. This is easy to create in their self-service interface, as shown in Figure 8.

²⁴ See, e.g., @ralfonsi, *Twitter Self-Service Advertising Now Available in 11 New Countries Throughout Europe, Latin America*, TWITTER BLOG (Sep. 4, 2014), <https://blog.twitter.com/en-us/a/2014/twitter-self-service-advertising-now-available-in-11-new-countries-throughout-europe-latin-0.html>.

²⁵ *ReklamStore*, available at <https://www.reklamstore.com>

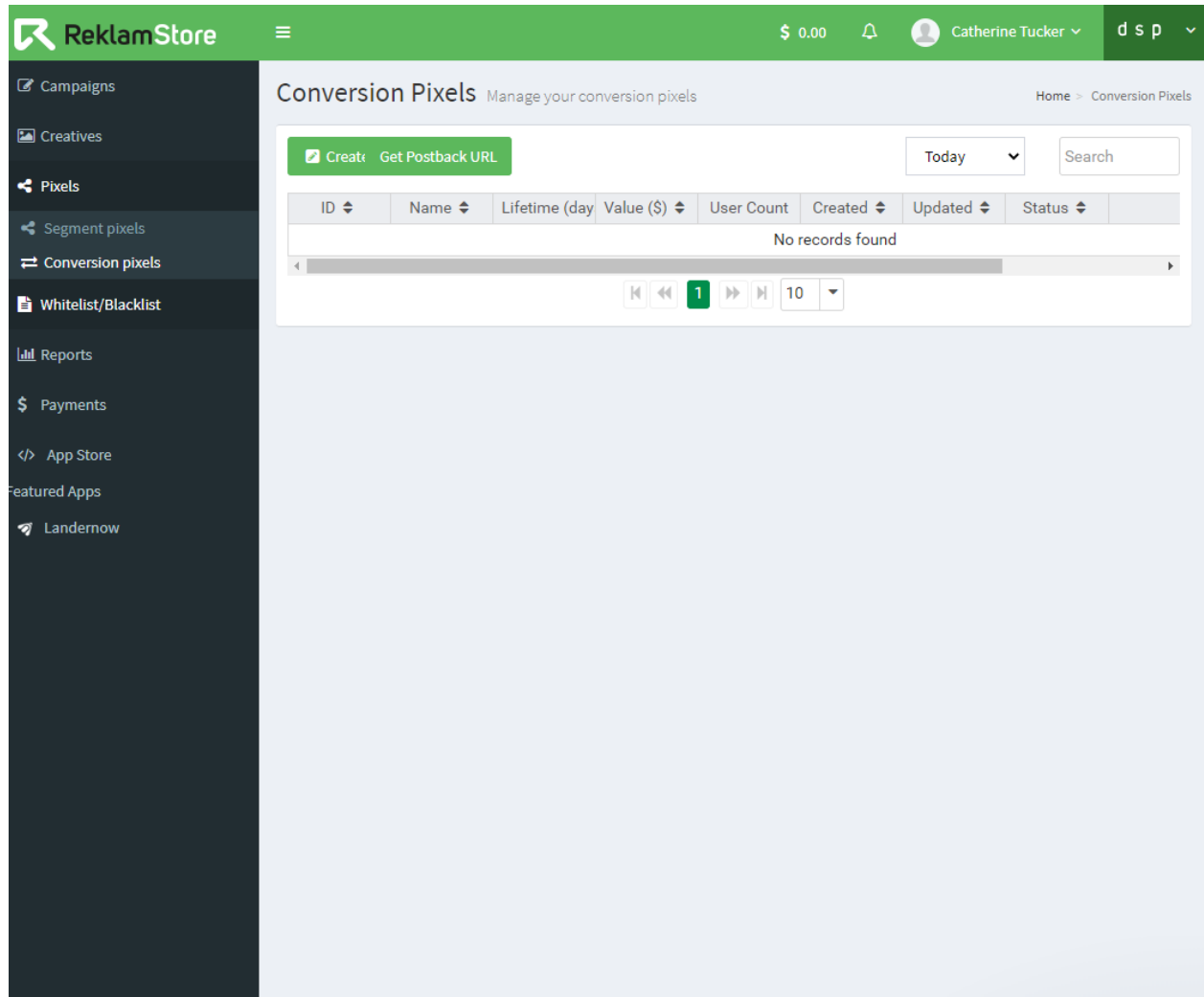


Figure 16: Reklam's
Source: <https://www.reklamstore.com/>

Until recently, traditional TV ad buying was a manual and time-consuming process that often involved large upfront buys. TV providers have developed self-service platforms simplifying the TV ad buying process and making it easier for advertisers to potentially switch to using their services. For example, Comcast's self-service ad portal allows advertisers, even small businesses, to purchase TV ads for as little as a few hundred dollars a month. Other providers, such as Charter Communications, also have self-serve platforms. By reducing minimum ad-buy requirements and setup costs, these services increase advertisers' ability to multi-home.

C. Costs of Switching Campaigns Across Ad Venues

Innovations automating campaign creation and management also streamline ad creation and delivery, reducing the amount of effort needed by advertisers. This flexibility decreases switching costs across platforms by helping advertisers automatically create different ad formats, and automates the delivery of high-performing combinations of their creative assets to audiences.

A useful example of this is the Bing import ads tool displayed in Figure 9, which allows advertisers to easily import campaign settings and keywords from Google ads.

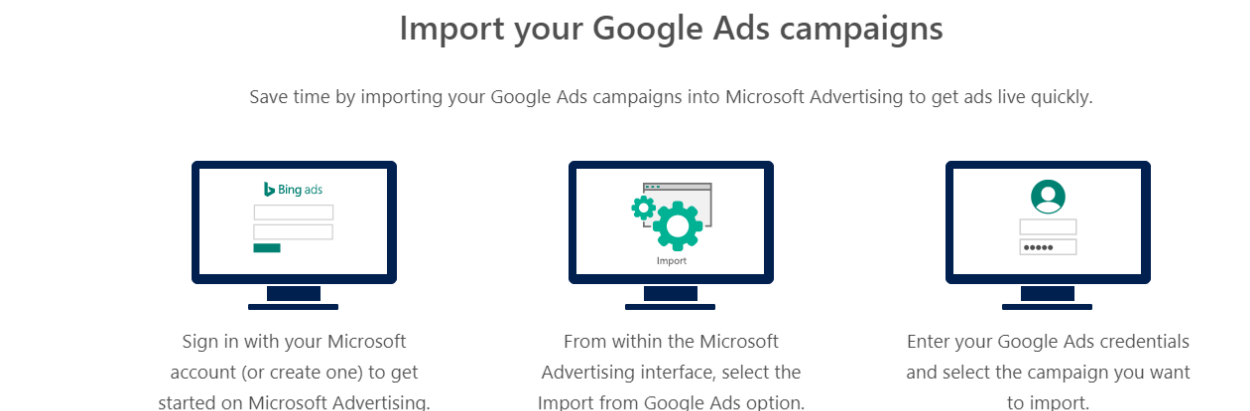


Figure 17: Bing Ads makes it easy to import quickly settings from Google ads

In general, the importance of standardizing ad format in understanding digital advertising markets is something I have highlighted in my own research.²⁶ The process of standardization of ad format increases flexibility across ad format. However, increasingly, digital tools have emerged that automate the entire process of setting up and managing a campaign at a very low fixed cost. For example, firms like Promo allow

²⁶ Avi Goldfarb & Catherine E. Tucker, *Standardization and the Effectiveness of Online Advertising*, 61 MGMT. SCI. 2707 (2015).

firms to create effective video ads in less than five minutes.²⁷

D. Network Effects

Advertisers do choose to launch advertising campaigns on the basis of the potential number and also the type of consumers they can reach. In the early days of online advertising, venues such as Yahoo! and ESPN were uniquely valuable online properties, because they attracted so many users. If an advertiser was interested in emulating online the mass reach of an ad shown during the TV show “Friends,” these properties were attractive venues. However, as digital advertising has evolved, there is now less need to use a single website as a venue. Instead, advertisers can achieve similar reach by using programmatic advertising and buying an audience across multiple websites.

Advertisers may or may not care about “reach,” or sheer number of eyeballs, in a world where targeting or even micro-targeting is emphasized. In the academic literature, we acknowledge this tension as a ‘reach-relevance’ tradeoff in choosing advertising venues. However, the programmatic advertising revolution has reduced the importance of this tradeoff. Using the programmatic ecosystem, advertisers can show an ad to people in a large audience segment across multiple websites. In other words, programmatic advertising eliminates the need to go to a single large ad venue to achieve reach.

E. Data

1. What Kind of Data is Used in Advertising?

There is a tendency to treat all data as equal for the purposes of antitrust analysis of advertising markets.²⁸ Therefore, it is useful to distinguish between different labels that

²⁷ *Create Video Ads in Minutes*, PROMO, available at <https://promo.com/cat/create-video-ads-2s/> (last visited on Aug. 8, 2020).

²⁸ The CMA did try to distinguish between different types of data in Appendix F of its July 2020 CMA Report. See CMA Report, *supra* note 1, at Appendix F. However, the taxonomy may unnecessarily

advertisers use to categorize data.

First, advertisers can use “declared data.” These are data that a user self-reports to a website. For example, I might enter my home zip code when I first engage with a website. If a small business near my home then uses that home zip code to target ads towards me that they think might interest me, then that would be an example of targeting based on “declared data.”

Second, advertisers can use “observed data.” These data are a collection of observed behavior. They may include, for example, data on the operating system of my Android cell phone. They could also include data on the location of my cell phone if I have opted into location tracking. If an advertiser targeted a price comparison app ad to me because I am an Android user who frequently visits toy stores, that would be an example of targeting based on observed data.

Third, advertisers can use “inferred data.” These are data where a user’s actual preferences are inferred from the user’s actions. Such data are particularly useful for understanding whether a user is “in market” for a certain product. For example, a valuable segment based on “inferred data” are “auto intenders.” Here, the type of content that a user browses is collected - for example, do they go to websites like Edmunds.com? - and predictions are made about whether the person is likely to buy an automobile in the near future. Typically, such predictions are made using some form of prediction algorithm. This prediction task is complicated by the fact that there are many products that have relatively short purchase cycles where consumers are only likely to be influenced by ads for a short time window. For example, if I am thinking of buying my mother flowers for Mother’s Day, then there are only probably a few hours where ads are likely to be effective at influencing which website I order from.

Firms have developed ways of collating and integrating data about consumers

distinguish “search data” and “contextual data” from “observed data.”

from a variety of sources. These include data that they own (“first-party” data), data they have an agreement to share with another website (“second-party” data), and data they buy from a third-party (“third-party” data). Broadly, DMPs allow advertisers to combine and store this data about users from a variety of different sources. DMPs synchronize data about a user and allow advertisers to determine whether or not the user is indeed, for example, shopping for a vehicle and living in the right place.

2. “Economies of Scale or Scope” Does Not Appear to be the Right Lens

In advertising markets, data are an input, and the key output is the accuracy of predicting a user’s interest in an advertised product or service. The relevant question for understanding whether or not data can help reinforce any incumbency advantage is establishing whether and, if so, at what point there are diminishing returns to the predictive power of data. In general, the literature suggests that diminishing returns to prediction appear swiftly.

Recent research measured the value of data for prediction using Amazon data. They showed that there are returns to data size (albeit with diminishing returns) with respect to demand prediction accuracy over time for a single product.²⁹ However, they also showed that there are small gains to demand prediction accuracy across products as data size increases. Another paper showed that the largest gain to increased data size of search engine logs is between approximately zero and 500 sessions, after which point the incremental returns to more data are decreasing.³⁰

Similarly, researchers have found decreasing economic returns to data in the context of algorithmic recommendations in news. Recent research explored the

²⁹ Patrick Bajari, et al., *The Impact of Big Data on Firm Performance: An Empirical Investigation* (Nat’l Bureau of Econ. Res., Working Paper No. 24334, Feb. 2018), available at <https://www.nber.org/papers/w24334.pdf>.

³⁰ Maximilian Schaefer & Geza Sapi, *Data Network Effects: The Example of Internet Search* (Berlin Sch. of Econ., Dec. 4, 2019), available at <https://www.semanticscholar.org/paper/Data-Network-Effects%3A-The-Example-of-Internet-Sch%C3%A4fer-Sapi/e1edbb56b709de3039e4863c8f2ff421da648b75?p2df>.

performance of an automated recommendation versus a human-curated search result in terms of user engagement (clicks).³¹ In particular, they tested how this relationship changes as the algorithm has access to more data about the searcher's previous visits. The study found little increase in algorithmic predictive accuracy from increasing the span of data from six to 200 visits, but did find a large increase in predictive accuracy when the platform has data on six visits rather than two visits.

These findings are consistent with my own research where I showed that prediction accuracy for demographic variables such as age and gender did not change with the amount of data available.³² In another paper, I found that a reduction in the amount of data that search engines stored about their users due to changes in EU regulations did not affect the ability of the search engines to identify relevant results for their users.³³

One limiting constraint on the value of incremental data is the potential for spurious correlations. In essence, the downside of more statistical precision is that often this statistical precision can identify a correlation that does not reflect a true causal relationship. Therefore, much of the value from having access to large data sets primarily comes from experimentation. Such experimentation often requires only a small amount of data to identify causal relationships. For example, eBay was able to identify return on investment for its search advertising investments using a relatively short time span and amount of data.³⁴

³¹ Jörg Claussen, Christian Peukert, & Ananya Sen, *The Editor vs. the Algorithm: Economic Returns to Data and Externalities in Online News* (CESifo, Working Paper No. 2364-1428, Nov. 12, 2019), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3479854.

³² Nico Neumann, Catherine E. Tucker, & Timothy Whitfield, *Frontiers: How Effective is Third-Party Consumer Profiling? Evidence from Field Studies*, 38.6 MKTG. SCI. 918-926 (2019).

³³ Lesley Chiou and Catherine Tucker, *Search Engines and Data Retention: Implications for Privacy and Antitrust* (Nat'l Bureau of Econ. Res., Working Paper No. 23815, Sep. 2017), available at <https://www.nber.org/papers/w23815.pdf?sy=815>

³⁴ Blake Thomas, Chris Nosko, & Steven Tadelis, *Consumer Heterogeneity and Paid Search Effectiveness: A*

An alternative argument for why the size of data might matter, is that larger datasets are more likely to allow the combination of different pieces of data. In general, the academic evidence on this possibility is not strong. For example, Matz et al. (2019) suggests a small incremental value of combining different types of data.³⁵

3. Can Data be a Unique Source of Comparative Advantage?

Some academics have argued that data may act as an essential facility, which might prevent or hinder entry by firms. A classic example of an essential facility is an instance where a railroad company controlled the only bridge across the Mississippi river. An essential facility remedy would require such a monopolist to allow others to use the bridge at a fair rate. However, in general, uncontested examples of an essential facility are rare, because an essential facility must be unique, valuable, and inimitable.

The argument is somewhat complex in the case of data because it is not the data that may potentially constitute an essential facility, but the insights provided by the data about any one consumer. Therefore, I suggest reframing the question around whether insights from the data are likely to be valuable, unique, and inimitable.

The breadth of a consumer's footprint generally limits the uniqueness of data in the digital realm. For example, if I were buying a bicycle, I might check out listings on Facebook Marketplace, look at reviews of bicycles on www.bicycling.com, or find attractions on Tripadvisor where cycling is mentioned. As I travel to the bicycle store, I might search for directions on my smartphone and my location would be recorded by any mobile apps I have installed that track my location. Once at the store, my spending would be recorded by my credit card company, and any data brokers the credit card company shares data with. I might then post about my purchase on social media accounts

Large-Scale Field Experiment, 83 *ECONOMETRICA* 155 (2015).

³⁵ Sandra C. Matz, et al., *Predicting Individual-Level Income from Facebook Profiles*, 14 *PLOS ONE* (Mar. 28, 2019), <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0214369>.

or upload photos. The point of this example is that any activity I engage in generates a lot of data about an individual. These data would give many firms - at the minimum - the insight that I was the kind of person who enjoys cycling-oriented activities and therefore that I might be a reasonable target for ads about cycling accessories or other fitness-oriented equipment and experiences in the future.

Examples where only one digital firm or platform has access to unique insights are unusual. If a tree in my garden falls, damaging my roof, my rush to immediately identify an emergency roofer might lead me to interact only with one platform like angieslist.com, or one website like <http://www.farinarroof.com/>—my local roofer—or a search engine. However, most purchasing processes are more complex and involve the use of multiple digital touchpoints, from which many firms will be able to draw insights.

The larger the purchase, the more time and research will go into that decision, and the more data are generated and spread. For example, suppose that I were lucky enough to be researching private school options for my kids. Typically, such a process would take months. I might use a website like GreatSchools as my primary search tool for identifying suitable schools, but due to the length of time the decision would take, many other firms would also have the opportunity to have that insight. For example, I might post my intention of finding a new school on social media, or join groups for fans of those schools. I might install apps on my phone that allow me to evaluate schools, and my phone's apps would also track the fact of my visiting any schools. I also might search for a school consultant. Through this process, each of these different digital venues gains insights into the consumer's intentions.

V. IMPLICATIONS

This paper has discussed how digitization and its revolutionary effects on the ability of advertisers to measure has changed the marketing funnel for advertising. The focus of my discussion has been on the implications this has for market definition - both

in terms of broadening the scope of substitution patterns across different ad venues and reducing switching costs for advertisers.

However, I will conclude with the following provocative thought. In general, the measurement revolution has had far broader effects than the broadening of potential market definition in advertising that I discuss in this paper. Instead, it has led to a revolution in terms of how advertisers operate, how much money advertisers can save on their advertising by avoiding spending money on unsuccessful campaigns, and allowed new business models, such as direct-to-consumer businesses, to thrive. As of yet, we have very little documentation of the benefits of this revolution, but without this documentation, discussions about the tradeoffs implied by the use of data and digital tools in the digital advertising ecosystem are being conducted in a vacuum.

Antitrust, Non-Competition, and No-Poach Agreements in Digital Industries

*Bruce H. Kobayashi**

INTRODUCTION

There has been increasing interest in regulating firms' use of non-compete agreements (NCA).¹ NCAs are contractual provisions in employment agreements that prohibit an employee from working for a competing employer for a period of time post-employment. Currently, the legality and enforceability of NCAs are determined by state law, with the majority of states allowing the use and enforcement of reasonable NCAs.² However, three states have passed statutes that ban enforcement of NCAs as a matter of public policy.³ Other states have challenged the use of NCAs or passed statutes or that prohibit the use of NCAs in specific settings, such as when applied to low wage workers.⁴

* Professor of Law, Antonin Scalia Law School. The author would like to thank Matt Lein and John Yun for helpful comments.

¹ See Camila Ringeling, Joshua D. Wright, Douglas H. Ginsburg, John M. Yun & Tad Lipsky, *Noncompete Clauses Used in Employment Contracts: Comment of the Global Antitrust Institute* (Antonin Scalia Law School Law & Economics Research Paper 20-04, 2020), <https://ssrn.com/abstract=3534374>; see also OFFICE OF ECON. POLICY, U.S. DEP'T OF THE TREASURY, *NON-COMPETE CONTRACTS: ECONOMIC EFFECTS AND POLICY IMPLICATIONS* (2016) [hereinafter *Treasury Report*], <https://www.treasury.gov/resource-center/economic-policy/Documents/UST%20Non-competes%20Report.pdf>.

² For an up to date description of state laws, see Russell Beck, Beck Reed Riden LLP, *50 State Noncompete Chart* (June 27, 2020) [hereinafter *50 State Chart*], <https://www.faircompetitionlaw.com/wp-content/uploads/2020/06/Noncompetes-50-State-Survey-Chart-20200627.pdf>.

³ States with broad bans include California (CAL. BUS. & PROF. CODE § 16600 (except some trade secrets)); Oklahoma, 06 (OKLA. STAT. tit. 15, § 219A); and North Dakota, (N.D. CENT. CODE § 9-08-06).

⁴ States that have recently restricted the use of noncompetition agreements based on wage, income, or worker category include: Oregon (OR. REV. STAT. § 653.295 (2008) (annual gross salary and commissions less than the median family income for a four-person family)); Hawaii (HAW. REV. STAT. § 480-4 (2015) (employees in a technology business)); Illinois (820 ILL. COMP. STAT. 90/5 (2017) (less than the greater of (1) the hourly rate equal to the minimum wage required by the applicable federal, State, or local minimum wage law or (2) \$13.00 per hour)); Massachusetts, (MASS. GEN. LAWS ch. 149, § 24L(c) (2018) (Non-exempt employees under the Fair Labor Standards Act, students employed as interns, laid off employees, and employees under 18)); Maine (§599-A.2 (2019) (below 400% of the federal poverty level)), Maryland (MD. CODE ANN., LAB. & EMPL. § 3-716(a) (2019) (less than \$15 an hour or \$31,200 per year)), New Hampshire (N.H. REV. STAT. ANN. § 275:70-a (2019) (less than 2x the applicable minimum wage)), Rhode Island (28 R.I.

And even in those states that allow the use and enforcement of such terms, the courts and legislatures in those states have limited enforcement of NCAs when their terms are deemed to be unreasonable.⁵ For example, state courts decline to enforce NCAs that lack a legitimate business interest or contain prohibitions that are unreasonably broad or lengthy, and state statutes restrict the scope, duration, and circumstances under which an NCA can be included in an employment contract and enforced post-employment.⁶

Much of the recent attention on the effects of NCAs has focused upon their widespread use in contracts with low-wage workers. For example, recent legislative actions have adopted statutory prohibitions on NCA use that targets low-wage workers,⁷ and several states have brought actions against franchised fast food chains to prevent the unlawful imposition and use of NCAs on at-will low wage employees.⁸ An economic reason for this focus is that many of the traditional efficiency based reasons for the use of non-competes seem less plausible in many low-wage settings. For example, use of NCAs to protect trade secrets or other valuable business information seems implausible in this setting, as low-wage employees are unlikely to possess such information. Moreover, use of NCAs in response to concerns over employee holdup of employer investments in

GEN. LAWS §§ 59-1-3 (2020) (less than 2.5 times the federal poverty level)); Washington (WASH. REV. CODE § 49.62.020(b) (2019) (one hundred thousand dollars, adjusted annually for inflation)); Virginia (VA. CODE ANN. § 40.128.7:7 (2020) (average weekly earnings are less than the average weekly wage of the Commonwealth of Virginia computed according to VA. CODE ANN. § 65.2-500(B), equivalent to \$52,000 annually)). This list does not include numerous state statutes regarding the use of NCAs applied to professionals. See 50 State Chart, *supra* note 2.

⁵ See 50 State Chart, *supra* note 2; see also Norman D. Bishara, *Fifty Ways to Leave Your Employer: Relative Enforcement of Covenants Not to Compete, Trends, and Implications for Employee Mobility Policy*, 13 U. PA. J. BUS. L. 751, 771–73 (2011).

⁶ Bishara, *supra* note 5, at 758.

⁷ See 50 State Chart, *supra* note 2.

⁸ See, e.g., Complaint, *People v. Jimmy John's Enterprises, LLC*, No. 2016-CH-07746 (Ill. Cir. Ct. June 8, 2016), <https://www.michiganemploymentlawadvisor.com/wp-content/uploads/sites/896/2016/06/JimmyJohnsComplaintFILED.pdf>; Aruna Viswanatha, *Sandwich Chain Jimmy John's to Drop Noncompete clauses from Hiring Packets*, WALL ST. J. (June 21, 2016), <https://www.wsj.com/articles/sandwich-chain-jimmy-johns-to-drop-noncompete-clauses-from-hiring-packets-1466557202>.

training and other forms of employee development, while plausible in some cases involving low-wage workers (e.g., client centered services such as hairdressers or financial analysts), seem less compelling in other low-wage settings where NCAs are observed.⁹ In addition, survey evidence suggests NCAs are common in contracts with low-wage workers, even in states that preclude their use or enforcement, and that such workers are likely to be unaware of the existence of NCAs in their employment contracts.¹⁰ Moreover, there is evidence based on causal designs that worker mobility and wages increased when a state restricted the use of NCAs, suggesting that use of NCAs in the settings studied cause decreases in labor mobility and wages.¹¹

While large digital companies are not immune from criticism for using broad NCAs in the context of low wage workers,¹² many of the applications of NCAs in digital markets will involve higher-wage settings where the use of NCAs is generally more

⁹ See J.J. Prescott, Norman D. Bishara & Evan Starr, *Understanding Noncompetition Agreements: The 2014 Noncompete Survey Project*, 2016 MICH. STATE L. REV. 369, 374 (2016) (noting NCA use for hair stylists, yoga instructors, lawn sprayers, teenage camp counselors, and low-wage fast food workers). *But see* Matthew S. Johnson & Michael Lipsitz, *Why are Low-Wage Workers Signing Noncompete Agreements?*, 55 J. HUM. RES. (forthcoming 2020), https://drive.google.com/file/d/0B1PY7O_D9ezWeTY4anZFWUIGNWc/view (hypothesizing that the use of non-competes in low-wage industries where the minimum wage is binding allows firms to benefit from lower turnover costs and effectively pay an implicit wage that is below the minimum wage). *See also* Paul H. Rubin & Peter Shedd, *Human Capital and Covenants Not to Compete*, 10 J. LEG. STUD. 93 (1981) (discussing employee holdup).

¹⁰ See Evan Starr, J.J. Prescott & Norman D. Bishara, *Noncompetes in the U.S. Labor Force* 63 J.L. & ECON. (forthcoming 2020), <https://ssrn.com/abstract=2625714>; Prescott, et al., *supra* note 9 (describing survey methodology).

¹¹ See generally Evan Starr, *Are Noncompetes Holding Down Wages?* (Dec 20, 2019) (unpublished manuscript), <https://ssrn.com/abstract=3223659>; Michael Lipsitz & Evan Starr, *Low-Wage Workers and the Enforceability of Non-Compete Agreements* (August 22, 2020) (unpublished manuscript), <https://ssrn.com/abstract=3452240> (difference in difference evidence based on Oregon's 2008 ban on NCAs for low wage workers); Natarajan Balasubramanian et al., *Locked In? The Enforceability of Covenants Not to Compete and the Careers of High-Tech Workers*, J. HUM. RES. (forthcoming 2020), <https://ssrn.com/abstract=2905782> (Cross Sectional difference in differences study based on 2015 Hawaii Ban on NCAs for technology workers).

¹² See Spencer Woodman, *Exclusive: Amazon Makes Even Temporary Warehouse Workers Sign 18-Month Non-Competes*, VERGE (Mar. 26, 2015), <https://www.theverge.com/2015/3/26/8280309/amazon-warehouse-jobs-exclusive-noncompete-contracts>.

defensible when viewed from an economic and public policy standpoint. In higher-wage settings, many of the traditional reasons for the imposition of NCAs based on the legitimate business reasons mentioned above are more plausible. Under these circumstances, the proper analytic focus is whether any net costs borne by workers are offset by the benefits generated to market participants. These benefits include enhancement of firms' ability to protect their interests in intellectual property and other valuable business information. Consumers can also benefit from lower prices, higher quality, and product improvements generated by a greater rate of innovation.

Moreover, the same national survey by Starr et al. that found a lack of awareness and consideration for low-wage workers found the opposite in high-wage settings.¹³ In particular, for surveyed employees who are aware of the NCA prior to accepting the job, Starr et al. report that these workers have 9.7% higher earnings, are 4.3% more likely to have information shared with them, are 5.5% more likely to have received training in the last year, and are 4.5% more likely to report satisfaction with their job when compared to employees that did not have NCAs.¹⁴ If informed high-wage workers benefit from signing NCAs, then allowing enforcement of reasonable NCAs for higher wage workers to protect legitimate business interests is a sensible approach that avoids interfering with efficient uses of NCAs. More generally, most states enforce NCAs in a manner consistent with this analytic approach. In particular, enforcement of NCAs in many states is conditioned, either through statute or via court enforcement, on the existence of adequate disclosure, limits on the duration of any agreement, and a narrow focus tailored to protect legitimate business interests.¹⁵ Such interests include trade secrets, confidential information, or the employer's goodwill. Some states also protect investments in skills

¹³ See Starr et al., *supra* note 10, at 1.

¹⁴ Starr et al., *supra* note 10, at 12, 35 (panel B).

¹⁵ See 50 State Chart, *supra* note 2.

training and client lists.¹⁶

The view that it is defensible to use NCAs in employment contracts with higher income employees is not universally shared.¹⁷ Indeed, criticism of the use of NCAs by digital firms has been extended to its application to higher-paid workers. Some would use the federal antitrust laws to ban the use of NCAs irrespective of the context in which they are used.¹⁸ However, it is not clear that the solution to the potential harms generated by the use of NCAs is best addressed federally, or through the antitrust laws. In this short chapter, I address three primary points with respect to calls for a broad federal antitrust based prohibition of NCAs. First, evidence of losses in both wages and worker mobility is not sufficient to support a broad condemnation of NCAs under the antitrust laws unless it is accompanied by systematic evidence that NCAs also negatively affect consumer or total welfare. And unless one adopts the view that harm to an input supplier is sufficient to conclude that a firm using an NCA in its employment contract has violated the antitrust laws,¹⁹ NCAs that may simultaneously reduce mobility or wages but decrease prices and increase output, quality, and innovation should not be condemned as per se illegal under the antitrust laws.

Second, those advocating broad bans on NCAs, including preventing their use to protect legitimate business interests, argue that such interests can be adequately protected by an alternative and less restrictive means. But by assuming a theoretical and

¹⁶ *Id.*

¹⁷ Cf. Matt Day, *Amazon Uses 'Hardball' Non-Competes in Ways California Rivals Can't*, BLOOMBERG (June 17, 2020) <https://www.bloomberg.com/news/articles/2020-06-17/amazon-s-hardball-non-compete-clauses-are-coming-under-fire>.

¹⁸ See Open Markets Inst. et al., *Petition for Rulemaking to Prohibit Worker Non-Compete Clauses* (Fed. Trade Comm'n) (Mar. 20, 2019) [hereinafter OMI Petition], <https://static1.squarespace.com/static/5e449c8c3ef68d752f3e70dc/t/5eaa04862ff52116d1dd04c1/1588200595775/Petition-for-Rulemaking-to-Prohibit-Worker-Non-Compete-Clauses.pdf>.

¹⁹ See, e.g., C. Scott Hemphill & Nancy L. Rose, *Mergers that Harm Sellers*, 127 YALE L.J. 2078 (2018) (making this argument in the context of mergers, while noting that their framework is applicable to conduct cases).

less restrictive alternative exists, such an approach fails to confront the differing costs and performance of alternative approaches, and ignores the operation of actual markets. Such an approach is contrary to the approach taken in most states that recognize that use of NCAs are necessary to protect legitimate business interests that cannot be adequately protected through an alternative restrictive covenant, including but not limited to a non-solicitation agreement or a non-disclosure or confidentiality agreement.²⁰ An approach that ignores the differing costs and performance of alternative approaches is unlikely to produce a rational approach to the complex tradeoffs presented by the use of NCAs in digital industries.

This last observation leads to the third point. Proponents of widespread bans have focused on a uniform federal prohibition of NCAs. But such an approach would likely interfere with the balanced and reasonable approaches to the use and enforceability of NCAs taken by the states, reflected in recent statutes and in court decisions. In addition to limiting enforcement in specific settings, state approaches to NCAs also include duration limits, requirements for consideration, garden leave that requires firms asserting enforcement of NCAs to compensate workers post-enforcement, and consumer protection remedies aimed at reducing informational asymmetries can serve to mitigate the wage effects of NCAs. In addition, in light of the critical need for further evidence on the effects of legal restrictions on NCAs, a uniform federal approach may be particularly costly at this time, as it will destroy the best chance to use the laboratory of the states to generate the economic evidence that would best guide regulation in a rational way going forward.

Finally, the chapter briefly examines the relationship between NCAs and no-poach agreements between horizontal firms. NCAs and no-poach agreement are substitutes, but the use of horizontal agreements between firms does not rely on the assent of the worker

²⁰ See, e.g., MASS. GEN. LAWS ch. 149, § 24L (b)(iii)(C); 50 State Chart, *supra* note 2.

and thus is unlikely to result in the compensating worker benefits generated when informed workers agree to NCAs. Moreover, these agreements can facilitate the exercise of monopsony power, resulting in reduced output and higher prices in the output market. Thus, the use of no-poach agreements between firms is not consistent with the measured approach of the states to the enforcement of NCAs. The approach taken by the federal antitrust agencies to treat naked no-poach agreements between firms competing to hire employees as a per se and even criminal offense going forward should give firms strong incentives to seek alternative ways, including through the use of NCAs, to advance legitimate business interests.

I. ECONOMIC EVIDENCE ON THE EFFECT OF NCAS AS A BASIS FOR AN ANTITRUST RULE

In addition to the legislative and public policy interest in NCAs, there has been a corresponding academic interest in studying the causes and effects of NCA use. In addition to the Starr et al. national survey, there has been a rising interest in examining the effects of NCAs on worker mobility and wages. As noted above, an event study using Oregon's choice in 2008 to ban the use of NCAs for low-wage workers finds the law caused increases in hourly wages and within-industry mobility relative to control states that did not change their laws over this time period. Moreover, other studies find that there may be spillover effects to the market for labor generally, with broad NCA use affecting the equilibrium wages of workers that are not bound by an NCA.

Because there have been several excellent and recent analytical surveys of the growing literature on the economic effects of NCAs, this section assumes, *arguendo*, that widespread use of NCAs cause lower wages and worker mobility.²¹ The question

²¹ In particular, see John M. McAdams, *Non-Compete Agreements: A Review of the Literature* (Dec. 31, 2019) (unpublished manuscript), <https://ssrn.com/abstract=3513639>; Norman D. Bishara & Evan Starr, *The Incomplete Noncompete Picture*, 20 LEWIS & CLARK L. REV. 497 (2016); see also Starr, *supra* note 11; Ringeling et al., *supra* note 1, at 9–10 (noting that available empirical evidence is mixed with respect to the effects of NCAs on employees); Starr et al., *supra* note 10 (noting differential effects based on whether or not there is effective disclosure).

addressed in this section is whether or not this result, if shown to be a causal effect of widespread NCA use, is sufficient to support a rule banning the use of NCAs.²²

To help frame the discussion in this section as well as the next, consider the recent paper by Gurun et al. that analyzes the effects of NCAs used by financial advisory firms to constrain the mobility of their employees.²³ In particular, their research design analyzes the voluntary adoption in 2004 of a Protocol for Broker Recruiting by three major firms.²⁴ This protocol established a set of rules for member firms governing employee departures to other financial advisory firms. These rules eliminated enforcement of important aspects of employee NCAs for firms in the protocol. In particular, it allowed an adviser to take client lists and contact information to their new employer without having to fear litigation over breaching post-employment restrictions contained in the employment contract with their former employer. This in turn allowed clients of a member firm to follow their advisers to other firms that were also members of the protocol. Protocol membership was not limited to the original three firms, and over time more than 2,000 firms have joined the protocol in a staggered fashion.

Gurun et al. use the staggered entry and exit of firms from the protocol to identify the effect of the protocol on the performance of advisers working in protocol firms relative to the performance of advisers working for firms that were not members of the protocol. Gurun et al. find that working for a protocol firm resulted in increases in adviser welfare—the study finds increases in both adviser compensation levels and adviser mobility. However, advisers working for protocol firms were less likely to be disciplined,

²² As noted in McAdams, *supra* note 21, while event studies based on recent law changes that ban use and enforcement of NCAs for low-wage workers yielded evidence that NCAs decreased both wages and worker mobility, other studies based on individual occupations yield mixed findings. *Id.* at 18; *see also* Ringeling et al., *supra* note 1, at 9–10.

²³ Umit Gurun, Noah Stoffman & Scott E. Yonker, *Unlocking clients: The Importance of Relationships in the Financial Advisory Industry*, J. FIN. ECON. (forthcoming 2020), <https://ssrn.com/abstract=3132127>.

²⁴ *See* Andrew Rozo, *The Fall of the Broker Protocol*, FORDHAM J. CORP. & FIN. L. BLOG (Apr. 4, 2018), https://news.law.fordham.edu/jcfl/2018/04/04/the-fall-of-the-broker-protocol/#_edn1b.

and the clients of these firms experienced higher levels of adviser misconduct, and also paid increased fees.

To the extent that the voluntary adoption of the protocol mimics the effects of an antitrust rule that would ban the use and/or enforcement of NCAs, the results from Gurun et al. suggest that the effects of a ban of NCAs in this setting would be to help the adviser employees by increasing mobility and wages. On the other hand, client investors would face higher fees and receive lower quality advice resulting from higher rates of adviser misconduct.

Going back to the question of whether the observation of reductions in wages and employee mobility is sufficient to conclude that NCAs are anticompetitive, these results demonstrate that a change in welfare in an input market does not directly map onto a similar change in consumer welfare in the output market, and may be negatively correlated with both consumer and total welfare. Indeed, such a negative relationship will be common when NCAs are used by firms in a procompetitive way to lower costs and increase quality by reducing agency costs. The point is that the procompetitive use of NCAs can result in less mobility and lower wages relative to a setting in which use and/or enforcement of NCAs are prohibited. As a result, the observation that NCAs reduce worker mobility and wages by itself is unlikely to produce a reliable screen between welfare increasing uses of NCAs and welfare decreasing uses of NCAs that create monopsony power.²⁵ And without evidence on the broader effects of NCAs on product quality, innovation, and downstream consumers, such an observation does not provide a rational or sufficiently informed basis to declare use of NCAs to be an unfair method of competition.²⁶ Such an approach could not be easily reconciled with the FTC's

²⁵ See Hemphill & Rose, *supra* note 19, at 2018–19 (discussing the potential benefits of lower input prices, pass through to consumers, and approaches to balancing these benefits with harms to sellers facing lower prices).

²⁶ See Dennis W. Carlton & Mark Israel, *Proper Treatment of Buyer Power in Merger Review*, 39 REV. INDUS.

commitment to use its Section 5 UMC authority to target practices that harm competition and consumer welfare, to use the rule of reason when both pro and anticompetitive outcomes are possible, and not to pursue broader public policy goals.²⁷

II. THE AVAILABILITY OF LESS RESTRICTIVE MEANS

As set out in the prior section, proposals to unconditionally ban NCAs would include settings where legitimate business interests are involved. However, those advocating broad bans on NCAs, including preventing their use to protect legitimate business interests, argue that broad bans would not impose high costs in such situations because such interests can be adequately protected by an alternative and less restrictive means.²⁸

But approaches that assume a theoretical and less restrictive alternative exists fail to confront the differing costs and performance of alternative approaches, and ignore the operation of actual markets.²⁹ Take for example the argument that in the absence of the ability to use and enforce NCAs, trade secret law and non-disclosure requirements could be used to prevent former employees from using a firm's valuable business information

ORG. 127, 128 (2011) (advocating the use of a total welfare standard); Ringeling et al., *supra* note 1.

²⁷ Fed. Trade Comm'n, Statement of Enforcement Principles Regarding "Unfair Methods of Competition" Under Section 5 of the FTC Act (Aug. 13, 2015) [hereinafter UMC Statement], https://www.ftc.gov/system/files/documents/public_statements/735201/150813section5enforcement.pdf.

²⁸ See OMI Petition, *supra* note 18, at 45–46.

²⁹ In evaluating the specificity to the transaction of claimed efficiencies from a merger, Section 10 of the 2010 Horizontal Merger Guidelines "do[es] not insist upon a less restrictive alternative that is merely theoretical." U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER Guidelines 30 (2010), <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>. The same approach is contained in the recently published Vertical Merger Guidelines. This stated approach is consistent with the teachings of the robust literature on transaction costs economics, which recognizes the importance of incorporating the transactions and information costs of contracts and markets into any antitrust analyses. See Global Antitrust Institute, Comment Letter on U.S. Dep't of Justice & Fed. Trade Comm'n Draft 2020 Vertical Merger Guidelines (Feb. 7, 2020), <https://ssrn.com/abstract=3534352>; Dennis W. Carlton & Bryan Keating, *Antitrust, Transaction Costs, and Merger Simulation with Nonlinear Pricing*, 58 J.L. & ECON. 269 (2015); Dennis W. Carlton & Bryan Keating, *Rethinking Antitrust in the Presence of Transaction Costs: Coasian Implications*, 46 REV. INDUS. ORG. 307 (2015).

to compete with them. This argument ignores the fact that use of these instruments is often ineffective and costly to enforce. In particular, enforcement of trade secret law, including through non-disclosure agreements, “has important gaps” and is “costly and uncertain to apply.”³⁰ Thus, employers often must supplement ineffective and costly legal protection from trade secret law with more effective direct restrictions on employees, including active monitoring of current and former employees use of firm information, and the use of post-employment contractual provisions such as NCAs. These contracts protect against the improper disclosure of valuable firm information by reducing the ability of a departing employee to benefit from using this information where it would be the most valuable. Indeed, under many state laws, use and enforcement of NCAs is supported by the fact that a legitimate business interest cannot be adequately protected through an alternative restrictive covenant, including but not limited to a non-solicitation agreement or a non-disclosure or confidentiality agreement.³¹ Thus, rather than rely on costly and ineffective legal enforcement and monitoring, use of NCAs provide a substitute mechanism based on changing employees’ incentives to misappropriate their former employer’s information.³²

More generally, how a firm addresses the problem of simultaneously sharing valuable and confidential information with its employees and preventing the loss of this information when employees depart the firm is a complex and individualized problem

³⁰ Bruce H. Kobayashi & Larry E. Ribstein, *Privacy and Firms*, 79 DENVER U.L. REV. 526, 530 (2001-02).

³¹ See, e.g., MASS. GEN. LAWS ch. 149, § 24L(b)(iii)(C); 50 State Chart, *supra* note 2.

³² See Kobayashi & Ribstein, *supra* note 30, at 529–31. The OMI Petition suggests that any gaps in trade secret law or the enforcement of non-disclosure agreements be addressed by improving incentives. See OMI Petition, *supra* note 18, at 40. In particular they suggest paying higher wages and salaries to employees who might depart with the firms’ valuable information. *Id.* at 47. The Gurun et al. study shows an equilibrium where such a mechanism was used and produced negative effects in the downstream market. See Gurun et al., *supra* note 23, at 28–29. Moreover, to the extent that NCAs are being used to address the holdup problem, higher payments to the employee would not be a solution. See generally Benjamin Klein et al., *Vertical Integration, Appropriable Rents and the Competitive Contracting Process*, 21 J.L. & ECON. 297 (1978).

that depends upon many factors unique to both the firm and its employees. These include information and transactions costs, including the costs of monitoring post-employment use, the costs of litigation involved in enforcing post-employment restrictions, the relative effectiveness of a particular restriction, and the compensating differential required to compensate employees for the loss of mobility imposed by post-employment restrictions. These transactions, information, and litigation costs are important determinants of the nature of employment contracts, and how firms are organized generally.³³ Indeed, the Broker Protocol discussed in the prior section was initially designed to address the frequent and high costs of litigation related to the enforcement of post-employment contractual restrictions that prevented departing advisers from taking client information to their new firms.³⁴ While litigation is costly, the subsequent departure of large firms from the protocol suggests that, for these firms, the costs of not enforcing these contractual restrictions were even higher.³⁵ Moreover, technological changes in the way advisers and clients communicate with each other has made it more difficult to enforce post-employment restrictions on using the firm's client information.³⁶ This suggests that any approach that fails to incorporate the complex tradeoffs presented by the use of NCAs in digital industries is unlikely to produce a rational approach to the regulation of NCAs.

III. THE BENEFITS OF STATE LAW

Proponents of widespread bans have focused on a uniform federal approach to

³³ See generally Ronald H. Coase, *The Nature of the Firm*, 4 *ECONOMICA* 386 (1937); Benjamin Klein, *Fisher-General Motors and the Nature of the Firm*, 43 *J.L. & ECON.* 105 (2000).

³⁴ Rozo, *supra* note 24.

³⁵ *Id.* (discussing the departure of large brokerage firms from the Protocol, including original member Morgan Stanley, as well as Citibank and UBS).

³⁶ *Id.* (noting broker's the use of private social media and forms of online presence to facilitate communication with former clients that avoids having to breach post-contractual restrictions).

prohibiting the use and enforcement of NCAs. But such an approach would likely interfere with the balanced and reasonable approaches to the use and enforceability of NCAs currently taken by the states, reflected in recent statutes and in court decisions.³⁷ As noted above, state laws currently limit enforcement of NCAs to those that contain reasonable terms. In addition to limiting enforcement in specific settings, state approaches to NCAs also include duration limits, requirements for consideration, garden leave that requires firms asserting enforcement of NCAs to compensate workers post-enforcement, and consumer protection remedies aimed at reducing informational asymmetries can serve to mitigate the wage effects of NCAs.³⁸

This section makes two additional points regarding the state law approach. First, as noted above, the state law approach is not based on a mismatched and novel use of competition law. Rather it is a contract/consumer protection approach that focuses on ensuring that employees are informed about the inclusion of NCAs in their employment contract and that any restrictions are reasonable and narrowly tailored to further a legitimate business interest. A focus on adequate disclosure makes it more likely that employees agreeing to NCAs will be compensated for any loss in mobility. As noted above, the Starr et al. survey found that employees that are informed about the existence of NCAs prior to accepting the job reported that they experienced better outcomes than employees not subject to NCAs.³⁹ In addition, while Starr finds that increased non-compete enforceability is associated with higher levels of training but lower hourly wages, this latter result is driven by employees in states that do not have consideration laws.⁴⁰ These laws condition NCA enforceability on the employee receiving something of

³⁷ See 50 State Chart, *supra* note 2. See generally Larry E. Ribstein & Bruce H. Kobayashi, *An Economic Analysis of Uniform State Laws*, 25 J. LEG. STUD. 131 (1996) (examining the costs and benefits of uniformity and variation in state laws).

³⁸ See 50 State Chart, *supra* note 2.

³⁹ See *supra* text accompanying note 10.

⁴⁰ See Evan Starr, *Consider This: Training, Wages, and the Enforceability of Covenants Not to Compete*, 72 ILR REV.

value in exchange for agreeing to the NCA, and are associated with employee wage gains.⁴¹ In contrast to an approach that would prohibit use and enforcement of NCAs by making NCAs an unfair method of competition, the contract/consumer protection approaches directly attack the underlying informational imbalances that seem to be a primary cause of poor outcomes associated with NCA use and make it more likely that the agreement to include an NCA in an employment contract benefits both the firm and employee.⁴²

In addition, in light of the critical need for further evidence on the effects of legal restrictions on NCAs, a uniform federal approach may be particularly costly at this time, as it will destroy the best chance to use states' varying approaches to enforcement of NCAs as social "laboratories of democracy," where laws and policies are created and tested at the state level of the democratic system, in a manner similar (in theory, at least) to the scientific method.⁴³ Indeed, many of the recent empirical studies of the effect of laws regulating NCAs on employee outcomes have identification strategies that are based on variations in state policies.⁴⁴ Similarly, California's longstanding approach in banning the use of NCAs has been hypothesized to be responsible for the relative success of Silicon Valley over the Route 128 tech corridor in Massachusetts, which allowed enforcement of NCAs during that time period.⁴⁵

783, 785 (2019).

⁴¹ *Id.* at 784–85.

⁴² See Ringeling et al., *supra* note 1, at 5 n.7.

⁴³ "Laboratories of democracy" is a phrase popularized by U.S. Supreme Court Justice Louis Brandeis in *New State Ice Co. v. Liebmann*, 285 U.S. 262 (1932), to describe how a "state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country." *Id.* at 311.

⁴⁴ See McAdams, *supra* note 21, at 20..

⁴⁵ Ronald J. Gilson, *The Legal Infrastructure of High Technology Industrial Districts: Silicon Valley, Route 128, and Covenants not to Compete*, 74 N.Y.U.L. REV. 575 (1999) (hypothesizing that California's public policy against enforcement of NCAs fostered the dissemination of valuable information and facilitated the creation of new firms, while the enforcement of NCAs in Massachusetts prevented the spread of

Despite the growing and robust empirical literature on the effect of NCAs, there are many outstanding questions that remain unresolved. As noted in the previous section, many of the studies examine the effect of state NCA laws on worker outcomes, but generally do not measure outcomes for firms and consumers. While there have been some initial attempts at measuring the effect of NCAs on growth and innovation, it is probably too early to make any strong inferences about systematic effects of NCAs on dynamic competition.⁴⁶ The use of the laboratory of the states to generate the economic evidence that could be used to study the causal effect of NDAs holds promise as the best way to generate useful information that would best guide regulation in a rational way going forward. Policy makers should be wary of imposing a uniform and uninformed federal regulatory policy that would prevent the generation of this evidence.

Finally, to the extent that the law of a state attempts to prevent the use of NCAs, several viable alternatives exist, especially for large digital firms that wish to protect valuable business interests through NCAs. Firms can choose a favorable choice of law and forum through incorporation in a state that enforces reasonable NCAs. For example, franchise firms and other firms incorporated in Delaware have used choice of law clauses to choose Delaware law, which favors enforcement of NCAs.⁴⁷ To the extent that such an option is foreclosed by the banning states,⁴⁸ such firms can also use their mobility to lessen the impact of laws that inefficiently restrict the use of welfare increasing reasonable NCAs.⁴⁹ Firms can, under these circumstances, move their principal place of business and

information and the creation of new firms).

⁴⁶ See Bishara and Starr, *supra* note 21 (reviewing studies).

⁴⁷ See, e.g., *York Risk Servs. Grp. v. Couture*, 787 Fed. Appx. 301 (6th Cir. 2019) (upholding choice of Delaware law and enforceability of NCA because of Delaware incorporation of the parent entity).

⁴⁸ See, e.g., *Cabela's LLC v. Highby*, 362 F. Supp. 3d 208 (D. Del. 2019).

⁴⁹ See generally Bruce H. Kobayashi & Larry E. Ribstein, *Contract and Jurisdictional Competition*, in *THE RISE AND FALL OF THE FREEDOM OF CONTRACT* 325 (F. H. Buckley, ed., 1999); LARRY E. RIBSTEIN & ERIN O'HARA, *THE LAW MARKET* (2009).

many of their operations from regulating states to states with more favorable treatment of NCAs.⁵⁰

IV. NCAs VERSUS NO-POACH AGREEMENTS BETWEEN FIRMS

Finally, this chapter briefly examines the antitrust treatment of no-poach agreements between horizontal firms. In a broad sense, NCAs and no-poach agreements are substitutes, as both can be used by firms to restrict the mobility of workers.⁵¹ A primary difference between no-poach agreements and NCAs, however, is that the use of horizontal no-poach agreements between firms does not rely on the agreement or assent of the worker and are less likely to result in a compensating differential. Such agreements between firms also strip employees of any of the statutory or common law protections under state law that would apply when NCAs were used. Thus, the use of no-poach agreements between firms to restrict employee mobility is not consistent with the measured and balanced approach used by the states to enforce NCAs.

No-poach agreements have been the focus of increased scrutiny under the antitrust laws.⁵² Under the Department of Justice Antitrust Division and Federal Trade

⁵⁰ See Kobayashi & Ribstein, *supra* note 49, at 344.

⁵¹ See Raymond A. Jacobsen, Nicole L. Castle & Joshua W. Eastby, *No-Poach Agreements Can Pose Antitrust Risks; Consider Alternatives*, BLOOMBERG L. (Oct. 8, 2020), <https://news.bloomberglaw.com/daily-labor-report/no-poach-agreements-can-pose-antitrust-risks-consider-alternatives>.

⁵² In *Adobe Systems*, the DOJ filed a complaint alleging that large technology firms violated Section 1 of the Sherman Act by entering into a series of bilateral non-solicitation agreements to prevent firms cold calling each other's employees. See Complaint at 4–5, *United States v. Adobe Sys., Inc.*, No. 10-cv-1629, 2011 WL 10883994 (D.D.C. Mar. 18, 2011), <https://www.justice.gov/atr/case-document/file/483451/download>. The case settled with the companies agreeing to broad prohibitions against no-poaching agreements. *United States v. Adobe Sys., Inc.*, No. 10-cv-1629, 2011 WL 10883994 (D.D.C. Mar. 18, 2011). A class action was also filed. The class was certified, and a settlement in the case was approved by the district court judge in 2015. See *In re High-Tech Emp. Antitrust Litig.*, 985 F. Supp. 2d 1167 (N.D. Cal. Oct. 24, 2013) (certifying class); *In re High-Tech Emp. Antitrust Litig.*, No. 11-cv-02509-LHK, 2015 WL 12991307 (N.D. Cal. Mar. 3, 2015) (approving preliminary class settlement). To the extent that no-poach agreements carry greater antitrust risks, the use of NCAs would, under current law, serve as a less risky substitute. It is interesting to note that this option to use a substitute was not available, as California Law would apply to the agreements, including the prohibition against enforcement of NCAs contained in CAL. BUS & PROF. CODE § 16600.

Commission Antitrust Guidance for Human Resource Professionals, “naked wage fixing or no-poaching agreements among employers . . . are per se illegal under the antitrust laws.”⁵³ Moreover, the DOJ announced that going forward, it intends to proceed criminally against naked wage-fixing or no-poaching agreements.

In addition to addressing naked horizontal no-poaching agreements, the DOJ has recently filed statements of interest in three private no-poach cases involving no-poach agreements included in franchisor-franchisee agreements.⁵⁴ A primary legal issue in these cases is whether a franchisor and its franchisees are deemed to be a single entity under the Court’s *Copperweld* and *American Needle* precedents.⁵⁵ The DOJ argued that franchisors and franchisees were not necessarily entitled to single entity status under *Copperweld*. Whether the franchisor is capable of concerted action with the franchisees depends on whether it has “distinct” “economic interests” from the franchisees.⁵⁶ Under the DOJ’s stated approach, evaluation of vertical no-poach agreements between franchisors and franchisees found to be capable of concerted action would be treated similar to other vertical contracts and proceed under the rule of reason.

⁵³ U.S. DEP’T OF JUSTICE ANTITRUST DIVISION & FED. TRADE COMM’N, ANTITRUST GUIDANCE FOR HUMAN RESOURCE PROFESSIONALS (2016), <https://www.justice.gov/atr/file/903511/download>.

⁵⁴ U.S. Dep’t of Justice, *Antitrust Division Spring Update 2019: No-Poach Approach* (Sep. 30, 2019), <https://www.justice.gov/atr/division-operations/division-update-spring-2019/no-poach-approach>.

⁵⁵ See *Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 769 (1984); *Am. Needle, Inc. v. Nat’l Football League*, 560 U.S. 183, 186 (2010); see also Judd Stone & Joshua D. Wright, *Antitrust Formalism is Dead! Long Live Antitrust Formalism: Some Implications of American Needle v. NFL*, 2009–10 CATO SUP. CT. REV. 369 (2010).

⁵⁶ Court rulings on this question have been inconsistent. In a recent case, *Arrington v. Burger King Worldwide, Inc.*, 448 F. Supp. 3d 1322 (S.D. Fla. 2020), the court dismissed an antitrust claim against Burger King based on the inclusion of no-poach agreements in the franchise contracts. In finding that the franchisor and franchisee should be treated as a single entity under a totality of the circumstances approach, the court noted that a rule that exposed “a corporation to substantial legal liability based solely on the franchise status of its restaurants would elevate form over substance, directly contrary to the teachings of the Supreme Court.” *Id.* at 1331. For an economic analysis of franchise operations consistent with the approach, see generally Jonathan Klick, Bruce H. Kobayashi & Larry E. Ribstein, *The Effect of Contract Regulation on Franchising*, 168 J. INSTITUTIONAL & THEORETICAL ECON. 38 (2012).

From the standpoint of antitrust law, the purpose of *Copperweld* immunity was to identify business arrangements that were unlikely to present threats to competition and reduce consumer welfare. Antitrust claims against such business arrangements could then be dismissed at an early stage as implausible, saving party and court resources and reducing the costs of type I errors.⁵⁷ Economic analyses criticize the *Copperweld* approach and its focus on the existence of a unity of interest between entities as misguided and inconsistent with the modern economic theory of the firm.⁵⁸ An approach consistent with the modern economic theory of the firm would focus instead on the allocation of control rights between entities, including franchisors and franchisees, and an evaluation of the economic function of the agreement or contract challenged as anticompetitive.⁵⁹

Such an analysis, however, is likely to be a costly and complex fact-based inquiry, which would diminish the value of using a such an inquiry as part of a *Copperweld* type early stage screen.⁶⁰ Thus, the DOJ approach is consistent with an economic approach that: (i) recognizes the limited utility of a *Copperweld* type approach; (ii) relies on the

⁵⁷ See Stone & Wright, *supra* note 55, at 383–84.

⁵⁸ *Id.* at 379; see also Benjamin Klein & Andres Lerner, *The Firm in Economics and Antitrust Law*, in ISSUES IN COMPETITION LAW AND POLICY 249, 263 (Dale Collins, ed., 2008). Under the modern economic theory of the firm, the allocation of control serves to mitigate the potential for opportunistic behavior and other forms of agency costs in the presence of asset specific investments, while the allocation of profits control and improve incentives of the entities to maximize joint profits. The legal boundaries of a firm are determined by the relative costs of using internal organization versus the costs of using the market and arms-length contracts. See Coase, *supra* note 33. Franchise organizations are a prime example of this, with many chains simultaneously using both independent franchisees and company owned outlets. Moreover, franchise systems often change their decision to use franchise outlet versus owned and operated outlets in response to changes in laws, or changes in economic conditions. The First Circuit similarly lamented the applicability of *Copperweld* to more complex business arrangements in *Fraser v. Major League Soccer, L.L.C.*, 284 F.3d 47, 55–59 (1st Cir. 2002).

⁵⁹ Franchise systems allocate control rights in order to prevent franchisees from free riding on the goodwill and the franchisor's related investment in maintaining quality. See generally ROGER D. BLAIR & FRANCINE LAFONTAINE, *THE ECONOMICS OF FRANCHISING* (2011). Use of NCAs in franchisor/franchisee contracts can easily be explained as a contractual restriction that attempts to serve this goal.

⁶⁰ See Stone & Wright, *supra* note 55, at 400–02.

Court’s approach in *Bell Atlantic v. Twombly* to engage in early stage screening;⁶¹ and (iii) uses the rule of reason to evaluate cases that survive a motion to dismiss.⁶²

CONCLUSION

The use of NCAs is currently regulated under state law. These laws embody diverse approaches to the regulation of NCAs which generally limit enforcement of NCAs to those with reasonable and narrowly tailored terms. State law also incorporates various approaches to mitigating the negative effects NCAs might have on workers, including requiring adequate disclosure, consideration, and banning their use in certain employment contracts. These diverse approaches can leave regulatory gaps in certain states and can result in overregulation in others. But this can also be a feature—diverse approaches to legal regulation of NCAs at the state level takes advantage of the laboratory of the states to generate information that will allow economic research to better evaluate the effects of these diverse legal approaches without exposing the entire nation to potential mistakes.

There has also been a growing and robust literature that has examined state variation in the regulation of NCAs and the effect of these laws on worker welfare. However, current evidence does not yet suggest a reliable and predictable link between the use of NCAs and the effect on employee welfare. Moreover, changes in employee welfare can be negatively correlated to changes in consumer welfare. Any antitrust rule that broadly prohibits the use and enforcement of NCAs would be based on incomplete evidence, would interfere with the current operation of the balanced and nuanced state by state approach to regulating NCAs, and would potentially be at odds with the antitrust laws’ focus on consumer welfare.

⁶¹ *Bell Atlantic Corp. v. Twombly*, 550 U.S. 544 (2007).

⁶² *See id.* at 403–05.

Section III: Evidence-Based Antitrust for the Digital Economy: Policies and Proposals

Does Big Tech Need its Own Regulator?

Neil Chilson

INTRODUCTION

Politicians, academics, pundits, journalists, and others have raised many concerns about large technology companies and offered a variety of solutions. Currently, these companies are regulated under general consumer and antitrust law and sector-specific laws that apply to their many different business models. Many have called for changes to these laws to address their concerns. Some go further, proposing not just new regulation, but an entirely new regulator. They seek a new federal agency, a “digital regulator,” to address a wide range of issues involving some of the largest companies in the world.

Policymakers must weigh the benefits and costs of creating an entirely new digital regulator. The choice of implementing regulator can make or break a regulation, almost regardless of its substance. If policymakers understand the tradeoffs, they can better ensure that any new regulation will be set up for success over the long term.

In this chapter we explain that creating a new agency has potential benefits and risks. The typical anticipated benefit of creating a new agency is specialized expertise. An expert agency holds a comparative advantage over general regulators or legislators that justifies its existence. Those who propose a new agency must, therefore, identify what unique, necessary, but unavailable expertise justifies the creation of the new agency.

The principle risk of creating a new sector-specific agency is regulatory capture. An agency that primarily serves industry’s interest can leave the public worse off than no agency at all. This is particularly true in rapidly innovating sectors, where incumbents have a strong incentive to use government to prevent disruptive innovation by potential competitors. Those who propose a new agency must acknowledge and at least attempt to mitigate this risk.

Have digital regulator advocates demonstrated that its specialized expertise will generate benefits that outweigh the threat of regulatory capture favoring incumbents? This chapter examines four different representative regulatory proposals to answer that question.

Earlier sections of this report provide the background to this examination. Section I talks at length about the characteristics of digital platforms, network effects, the relevant economics of IP, and legal issues such as vertical integration, vertical restraints, and self-preferencing. Section II looks at alleged problems with the status quo, examine impacts on concentration, innovation, consumer surplus, labor economics, rent seeking, and what antitrust regulators are doing in the EU and the US about these problems.

We now turn to Section III. This section examines proposed solutions to the alleged flaws. The following chapters will look at many dimensions of proposed reforms. But this chapter will focus on one: whether a new regulatory agency is necessary. Along the way, informed by the thinking in Section I, we will touch on whether there is something unique about “tech companies” that necessitates a new expert regulator. Similarly, drawing on the lessons from Section II, we will examine the alleged gaps in how current regulators govern tech companies to understand what comparative advantages a new agency might have.

We conclude that existing proposals have failed to demonstrate that a new agency’s expected benefits outweigh its likely risks. The proposals do not identify what area of expertise would give the digital regulator a comparative advantage over existing agencies. Nor do they discuss or mitigate a digital regulator’s heightened risk of capture.

In short, judging by these proposals, big tech does not need its own regulator.

I. THE REPRESENTATIVE PROPOSALS

Calls for increased regulation of large tech companies have exploded over the past

several years.¹ Many of those calls have contemplated creating a new watchdog agency focused on tech companies.² But most proposals have been light on details. Only a few have sought to justify such an agency or explain what it would do or how it would work. Below we summarize the four most prominent proposals for a new digital regulator.

A. UK Competition and Markets Authority's Digital Markets Unit

In July of this year, the United Kingdom's Competition and Markets Authority (CMA), a government agency focused on competition issues, issued a report proposing a new agency to regulate digital companies.³ The CMA proposes that this agency, the "Digital Markets Unit," (DMU) possess broad authority over major "online platforms funded by digital advertising," specifically including Google and Facebook.⁴ The report recommends that the DMU have authority allowing it to mandate that firms share search data with rivals, require interoperability features between platforms, and create an obligation for platforms to include designs that maximize consumer choice over their privacy and data collection. It emphasizes that large digital platforms maintain such powerful market positions that new entrants cannot compete without some form of government intervention.

¹ See, e.g., Alina Tugend, *Fervor Grows for Regulating Big Tech*, N.Y. TIMES (Nov. 11, 2019), <https://www.nytimes.com/2019/11/11/business/dealbook/regulating-big-tech-companies.html>.

² See, e.g., Ben Brody, *Momentum Grows for a Digital Watchdog to Regulate Tech Giants*, BLOOMBERG (Sept. 11, 2019), <https://www.bloomberg.com/news/articles/2019-09-11/momentum-grows-for-a-digital-watchdog-to-regulate-tech-giants>.

³ COMPETITION & MARKETS AUTH., *ONLINE PLATFORMS AND DIGITAL ADVERTISING* (July 1, 2020), https://assets.publishing.service.gov.uk/media/5efc57ed3a6f4023d242ed56/Final_report_1_July_2020_.pdf (Hereinafter "CMA Report"). This report builds on a March 2019 report from the Digital Competition Expert Panel, led by economist Jason Furman, which also recommends a Digital Marketing Unit and is likewise agnostic as to whether the DMU is a new agency. UNLOCKING DIGITAL COMPETITION: REPORT OF THE DIGITAL COMPETITION EXPERT PANEL 10, 55 (Mar. 2019), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf

⁴ CMA Report, *supra* note 3, at ¶¶ 69, 74 (describing platforms with 'strategic market status'); see also *id.* ¶¶ 7.54-7.55 (based on Furman Review definition).

The report has “not considered which institutions might be best placed to discharge those functions.”⁵ As such, it “use[s] the term DMU very broadly, noting that this could be a new or an existing institution, or even that the functions could be assigned across several bodies.”⁶ In short, the CMA report is indifferent to whether the DMU is a separate new agency or not.

B. Stigler Committee on Digital Platforms’ Digital Authority

The Stigler Center for the Study of the Economy and the State issued a report in 2019 proposing that Congress create a Digital Authority to better address competition and consumer privacy issues in the digital economy.⁷ The authors argue that the digital economy presents unique challenges, such as network effects enabling platforms to attract large user bases and gather user data, that current regulatory agencies cannot address. Thus, the report proposes a Digital Authority with the primary goal of establishing competition in digital markets. According to the report, an effective Digital Authority would be able to collect data from digital firms, especially large firms, to monitor their practices; enforce interoperability rules between platforms; and promote standardized features across firms. The authors also suggest that a Digital Authority should possess the ability to scrutinize mergers and acquisitions of any size that involve a platform with “bottleneck” capabilities and to enforce a variety of remedies in cases where firms engage in anti-competitive conduct.

As to where new regulatory authority should reside, the Stigler report gives conflicting answers. The body of the report repeatedly calls for a “a specialist regulator,

⁵ *Id.* at ¶ 76, 7.20.

⁶ *Id.*

⁷ STIGLER CTR., STIGLER COMMITTEE ON DIGITAL PLATFORMS FINAL REPORT (2019), <https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf?la=en&hash=2D23583FF8BCC560B7FEF7A81E1F95C1DDC5225E> (Hereinafter “Stigler Report”).

the Digital Authority,” a “sectoral regulator,” and “a new digital regulatory agency.”⁸ Yet the Policy Brief for Regulators, which introduces the report, states, “[W]e envision—at least initially—to have the Digital Authority as a subdivision of the FTC, an across-industry authority with a better-than-average record of avoiding capture.”⁹ That is, motivated by regulatory capture concerns, the Policy Brief recommends against creating a stand-alone agency.

It is not clear what institutional form the Stigler Center ultimately supports. The above sentence in the Policy Brief is the only place in the entire report where the Center recommends against a new agency. But after the release of the report, two of the leading contributors elaborated on a FTC subdivision in a subsequent blog post, detailing how “[r]otating FTC staff between consumer protection, antitrust, and digital authority could create useful synergies and expertise and minimize the risk that DA employees will be captured by industry.”¹⁰ By continuing to discuss the potential various arrangements at the FTC, the authors suggest that the Stigler Center would support enhancing FTC authority rather than creating a new agency—at least for now.

C. Harold Feld - The Case for the Digital Platform Act

In his report, “The Case for the Digital Platform Act,” Harold Feld, senior vice president at progressive tech policy think tank Public Knowledge, argues that the complexities of the digital industry require a specialized regulatory agency. Feld claims that digital platforms wield significant influence in society, create new consumer

⁸ *Id.* at 32 (“Therefore, the report suggests that Congress should consider creating a specialist regulator, the Digital Authority.”); *id.* at 100 (“For the reasons above, we believe the establishment of a sectoral regulator should be seriously considered.”); *id.* at 120 (“Finally, because the problems we identify may require action beyond antitrust, we also propose the establishment of a new digital regulatory agency, or Digital Authority.”).

⁹ *Id.* at 18.

¹⁰ Luigi Zingales & Fiona Scott Morton, *Why a New Digital Authority Is Necessary*, PROMARKET (November 8, 2019), <https://promarket.org/2019/11/08/why-a-new-digital-authority-is-necessary/>.

protection challenges, and affect critical social values including free expression and democratic participation. He states that technology companies that offer multiple services can utilize network effects to rapidly grow and expand their user base with low marginal costs.¹¹ Feld also notes that users endure particularly high costs when excluded from platform services and that they often enhance a platform's network effects by performing several roles as consumers.¹² He emphasizes that a digital regulatory agency should possess the power to limit a firm's market power by limiting mergers, if the agency determines that the firm's size negatively impacts the public interest. Feld also notes that the agency should design a variety of merger remedies for dominant firms and design new remedies for a multitude of problems associated with the digital industry, such as device addiction.

Feld proposes that Congress either grant an existing agency (he favors the Federal Communications Commission) with new authority or create a new agency that can address the unique capabilities of internet companies and prevent anticompetitive conduct in the digital sector.¹³ Under either regulatory scenario, Feld argues that the responsible agency would need to possess a "comprehensive set of regulatory mechanisms" and wide-ranging authority befitting a public-utility regulator to protect consumers, increase competition, and ensure that all members of the public can access reliable service.¹⁴

¹¹ Harold Feld, *The Case for the Digital Platform Act*, PUBLIC KNOWLEDGE at 20 (May 2019), https://www.publicknowledge.org/assets/uploads/documents/Case_for_the_Digital_Platform_Act_Harold_Feld_2019.pdf.

¹² *Id.* at 16.

¹³ *Id.* at 178.

¹⁴ *Id.* at 72 ("To assure that the enforcing agency has all the necessary tools at its disposal to address a field as diverse, dynamic, and essential to our economy as digital platforms, Congress should make the authority of the agency to consider even the most draconian solutions crystal clear.").

D. Shorenstein Center's Digital Platform Agency

Three Senior Fellows at Harvard Kennedy School's Shorenstein Center—former FCC chairman Tom Wheeler, former FCC Senior Counsellor to the Chairman Phil Verveer, and public interest lawyer and former DOJ antitrust staffer Gene Kimmelman—have just issued a discussion paper with a blueprint for a Digital Platform Agency (DPA).¹⁵ Compared to the other proposals, the Shorenstein report lays out a detailed structure and obligations for a DPA.

The Shorenstein report argues that the internet of today is unregulated and has not served the public interest. Current agencies are unsatisfactory, it claims, because they lack “digital DNA,”—meaning technical expertise and market expectations appropriate for digital technologies. And current agencies are also already overburdened.

A new bi-partisan independent DPA would “fill the void” left by outdated legislation. Its jurisdiction would be “consumer-facing digital activities of companies with significant strategic market status.”¹⁶ Small companies would not be targeted.

The report recommends that the DPA discard the “industrial era” approach to regulation and instead adopt a new, agile, risk-management approach to governance. The foundations of this approach are inspired by two common law ideas: the duty of care and the duty to deal. (To be crystal clear, the DPA would not be bound by common law or pursue such actions in common law courts but would deploy its regulatory tools in the spirit of these two duties.) A Code Council “of industry and public representatives possessing demonstrated expertise” would develop codes of conduct which could be adopted and enforced by the DPA.

Unlike the proposals we have discussed thus far, the Shorenstein Center report is

¹⁵ Tom Wheeler et al, *New Digital Realities; New Oversight Solutions in the U.S.: The Case for a Digital Platform Agency and Approach to Regulatory Oversight*, SHORESTEIN CTR. (Aug. 2019), https://shorensteincenter.org/wp-content/uploads/2020/08/New-Digital-Realities_August-2020.pdf.

¹⁶ *Id.* at 17.

unequivocal that a new agency is needed. We should “not bolt on authority to an existing agency,” the report argues, because “[e]xisting agencies, as a result of their statute, staff, tradition and jurisprudence are infused with an inherently analog DNA” when what is needed is “digital DNA.”¹⁷ “Old agencies (even if their statutes are updated) are saddled with legacy precedents . . .,” it claims.¹⁸ Existing agencies are also stretched thin executing their current duties. Therefore, “[r]ather than bolt on to and dilute an existing agency’s responsibilities, it is preferable to start with a clean regulatory slate and specifically established congressional expectations.”¹⁹

E. Other Proposals

The four proposals summarized above are not the only proposals to create a new agency, but they are the key proposals for regulatory agencies that focus on competition issues.

Others have proposed non-competition related agencies. For example, some legislators have proposed creating a new privacy agency that would affect tech companies—and other companies as well. Democratic congresswomen Zoe Lofgren and Anna Eshoo introduced the Online Privacy Act, and Senator Kirsten Gillibrand introduced the Data Protection Act of 2020. Both proposals would create an independent agency dedicated to enforcing commercial privacy rights for consumers. In another example, a proposal from Paul Barrett at New York University’s Stern Center for Business and Human Rights calls for an “independent digital oversight authority” as part of a response to the debates over social media content moderation.²⁰

¹⁷ *Id.* at 19.

¹⁸ *Id.*

¹⁹ *Id.* at 20.

²⁰ Paul M. Barrett, *Regulating Social Media: The Fight Over Section 230 – and Beyond*, NYU (Sept. 2020), https://static1.squarespace.com/static/5b6df958f8370af3217d4178/t/5f58df637cbf80185f372776/1599659876276/NYU+Section+230_FINAL+ONLINE+UPDATED_Sept+8.pdf.

Economist Hal Singer has proposed a “net tribunal” to adjudicate complaints against technology companies (and potentially others) for exclusionary conduct and harm to innovation through various self-preferencing practices.²¹ He argues that current antitrust law cannot address these practices, and even if it can, it moves too slowly to prevent innovation harms.²² Like Feld, Singer looks to the FCC to provide a template for his proposal, basing the tribunal on the program carriage proceedings established by Congress in the 1992 Cable Act. Unlike the other proposals, Singer’s net tribunal is not a sector-specific agency. Indeed, he envisions a tribunal that would apply a nondiscrimination standard across all layers of the internet and potentially beyond.²³ In fact, the net tribunal is more a court than an agency. As such, while Singer states that the net tribunal could be housed either in a new agency or as a new division within the FTC, this type of topically narrow but economy-wide adjudicative body seems best suited to be incorporated within the FTC, which already has structurally similar capabilities.²⁴

The below discussion is often responsive to these various other proposals, but because they do not focus on competition or do not propose a sector-specific agency, we do not expressly address their arguments.

* * *

One summary note before continuing: on the key question of this chapter—does big tech need its own regulator—three of the four major proposals equivocate. Feld seems to

²¹ Hal Singer, *Testimony to House Subcommittee on Antitrust, Commercial, and Administrative Law*, at 4–5 (Mar. 30, 2020), <https://www.econone.com/wp-content/uploads/2020/03/Singer-Letter-to-Chairman-Cicilline-and-Ranking-Member-Sensenbrenner.pdf> (Hereinafter “Singer Testimony”).

²² *Id.* at 4.

²³ Kevin Caves & Hal Singer, *When the Econometrician Shrugged: Identifying and Plugging Gaps in the Consumer Welfare Standard*, 26 Geo. Mason L. Rev. 395, 415-416 (2018) (arguing that the tribunal could apply a single standard to ISPs and tech platforms alike).

²⁴ Singer Testimony, *supra* note 21. at 4-5.

prefer an independent regulator but would be satisfied with new authority at the FCC.²⁵ The body of the Stigler Center report repeatedly recommends a new agency, but the Policy Brief backs off that recommendation, proposing instead that the authority be granted to the FTC, at least initially.²⁶ And the CMA report expressly states that it has not considered the question and appears open to a range of institutional forms.²⁷ Only the Shorenstein Center report decisively recommends against “bolt[ing] on authority to an existing agency.”²⁸

So, if we take these proposals at their word, their answer to “Does big tech need its own regulator?” would appear to be, “Maybe not.”

Still, creating a new agency remains on the menu of options that future regulators and legislators will be ordering from. Is it a good option?

II. AGENCIES MUST BE EXPERT IN SOMETHING

Before we evaluate the various proposals to create a new regulator for big tech, it is worth revisiting a foundational question: why create agencies at all? Government is often asked to, and often attempts to, solve problems. But what justifies Congress tasking an agency with solving these problems, rather than doing so itself?

A. The Traditional Rationale: Division of Labor by Expertise

The generally accepted reason for creating agencies is division of labor by expertise—in a word, specialization. Yale law professor Jonathan R. Macey describes “the old justification for administrative agencies as a dominant fixture of American law: unlike courts or legislatures, administrative agencies are staffed by ‘experts’ whose knowledge

²⁵ Feld, *supra* note 11, 192, 194 (“[T]he cleanest solution to the question of implementation is to start fresh,” but “[i]f Congress wishes to build upon existing agencies, the logical choice is the FCC.”).

²⁶ Stigler Report, *supra* note 7, at 18.

²⁷ CMA Report, *supra* note 3, at 22 (“We use the term DMU very broadly, noting that this could be a new or an existing institution, or even that the functions could be assigned across several bodies.”).

²⁸ Wheeler et al, *supra* note 15, at 18.

of the circumstances and conditions within a particular industry enables them to execute their duties in a professional manner.”²⁹ In other words, administrative agencies are experts—they know something about an issue that others do not. That knowledge gives the agency an advantage over other institutions when dealing with that issue. Compared to a general legislative body, an institution with expertise in a specific set of problems can more efficiently and effectively apply governmental powers to that set of problems.

Thus, an agency’s expertise justifies its existence.

To justify a new agency, then, one must identify an unsatisfied need for unique expertise. Delegating problems to an agency creates no comparative advantage if the knowledge needed to solve the problem is commonplace or easily accessible. No expert agency is needed in that case. Likewise, delegating unrelated problems that require different expertise to the same agency creates no efficiencies. If another agency already possesses relevant expertise, it makes more sense to assign the problems to that agency.

B. Different Kinds of Agency Expertise

But not all expertise is the same. Distinguishing between different types of expertise that an agency might acquire will help us analyze the proposals’ calls for a new expert agency.

One can divide agency-relevant expertise into three crude categories: industry, policy, and procedure. All agencies have each kind of expertise, but most agencies are organized around either industry or policy expertise.

First, regulators have *industry expertise* in the technical, economic, and business model characteristics of the companies they regulate. For example, the Federal Aviation Administration sets requirements for airplane design and operation, and thus requires

²⁹ Jonathan R. Macey, *Organizational Design and Political Control of Administrative Agencies*, 8 J. L., ECON, & ORG. 93, 103; Rachel E. Barkow, *Insulating Agencies: Avoiding Capture Through Institutional Design*, 89 TEXAS L. REV. 15, 19 (“The classic explanation for agency independence is the need for expert decision making.”).

expertise in aircraft design, air traffic control, and aviation safety. Industry expertise differs greatly in its substance between industries. And for fast-changing industries, such expertise can quickly become outdated.

Most U.S. agencies are organized around industry expertise. This includes sector-specific agencies like the Federal Communications Commission or the Federal Aviation Administration or many others covering other specific sectors such as healthcare, automotive transportation, and finance. Such regulators are responsible for addressing a wide range of different kinds of problems throughout a single sector. Their knowledge of a specific industry provides a comparative advantage in handling problems that arise in that industry.

The depth of industry expertise an agency can develop given a set amount of resources will depend in part on how broadly or narrowly the industry is defined. An agency charged with governing a narrowly defined industry can develop deeply specialized knowledge compared to an agency with broader jurisdiction. But too narrow a definition can be inefficient. It would likely be inefficient to have one FAA for airplanes and a different FAA for helicopters, for example.

Second, regulators also have *policy expertise* in recognizing and addressing the specific problems or harms at issue. Policy expertise includes understanding and applying the general principles and rationales for government intervention, such as a basic understanding of market failures. It also includes knowledge about problems that span many industries. For example, the Federal Trade Commission has legal and economic expertise in analyzing anticompetitive behaviors, which can occur in many industries.

General regulators like the Federal Trade Commission, the Environmental Protection Agency, and the Consumer Product Safety Commission are organized around policy expertise. Their core organizing principle is the policy problem or problems they are tasked with solving, not any specific industry. Such problems involve a shared set of

legal requirements and economic principles that are applicable across many industries.

A third category of expertise might be called *procedural expertise*. This encompasses the legal and practical knowledge of regulatory process—the business of being an administrative agency. This can differ from agency to agency. For example, the FCC has deep experience in administrative rulemaking, while the FTC has deep experience in enforcement and litigation.

C. Implications of the Three Types of Expertise for Agency Specialization

Agencies will differ structurally based on which types of expertise they emphasize. Policy and procedural expertise apply in nearly every regulatory situation and are therefore more widely available than industry expertise. Industry expertise is, by its nature, specific to a single industry. In contrast, agencies are governed by overarching procedural requirements such as the Administrative Procedure Act. Each agency has its own internal rules, but all build from a common foundation of procedural expertise. And policy expertise exists at some level in every agency. For example, every agency requires expertise in the types of market failure that justify regulatory interventions. Similarly, the types of harms from which government seeks to protect consumers are necessarily more general than the types of business models or industries that might cause that type of harm. In both cases this would lead one to expect that policy expertise in recognizing and dealing with market failure and consumer harm likely resides in many different agencies. And in fact, that is the case.³⁰

As mentioned, all agencies have each type of expertise, just with different emphasis. The Federal Communications Commission, for example, has deep industry expertise in the wireless telecommunications industry. But it also has procedural

³⁰ For example, the Consumer Product Safety Commission, Consumer Financial Protection Bureau, Food and Drug Administration, Food Safety and Inspection Service, and Federal Communications Commission all advance similar consumer protection goals in their respective industries.

expertise in rulemaking, an expertise with application far beyond the communications industry. And the Federal Trade Commission, although a generalist regulator, has built expertise in a range of industries over time as it repeatedly applies its authority to those industries. Such industry expertise is acquired (permanently or on contract) as necessary to address a specific competition or consumer protection problem.³¹

Put briefly, an agency's mission can focus either on addressing many different problems in the same industry or focus on addressing the same type of problem across many different industries.

Thus, deciding whether a new agency is appropriate hinges on answering "yes" to two questions. First, is it possible to identify a differentiated industry or sector for the new expert agency? If not, a new, sector-specific agency would likely duplicate expertise already at other agencies. Second, would a new agency have a comparative advantage over an enhanced existing agency? Answer yes to both questions, and creating a new agency may have benefits—although those benefits may come with significant costs, as we will see in Section IV.

III. A NEW AGENCY EXPERT IN WHAT?

Tested against these two questions, the proposals do not make a strong case for a new agency because they cannot explain what expertise the new agency will develop. They struggle to define the very sector to be regulated. Most of them do not argue that a new agency would have a comparative advantage over existing agencies. Two proposals do, however. One shows only that a new agency may have a slight comparative advantage in procedural expertise. The other makes a few arguments in favor of a new agency, but ultimately throws up its hands and says Congress will need to decide.

³¹ See, e.g., Neil Chilson, *How the FTC keeps up on technology*, FED. TRADE COMM'N (Jan 4, 2018), <https://www.ftc.gov/news-events/blogs/techftc/2018/01/how-ftc-keeps-technology>.

A. The Proposals Fail to Define What Sector a New Sector-Specific Regulator Would Regulate

The scope of a sector-specific agency's expertise relies entirely on the definition of the sector. Yet while the proposals can and do list the specific companies they want to regulate, they struggle to establish a principled definition for the "big tech" sector. With no principled sector definition, a new agency cannot achieve a comparative advantage—it cannot justify its existence.

1. The Importance of Defining a Sector

As Harold Feld succinctly argues, "sector-specific regulation requires a definition of the sector."³² By defining the sector we identify the expertise gap that we expect a new agency to fill. A sector definition identifies where a new agency will have a comparative advantage over Congress or existing agencies.

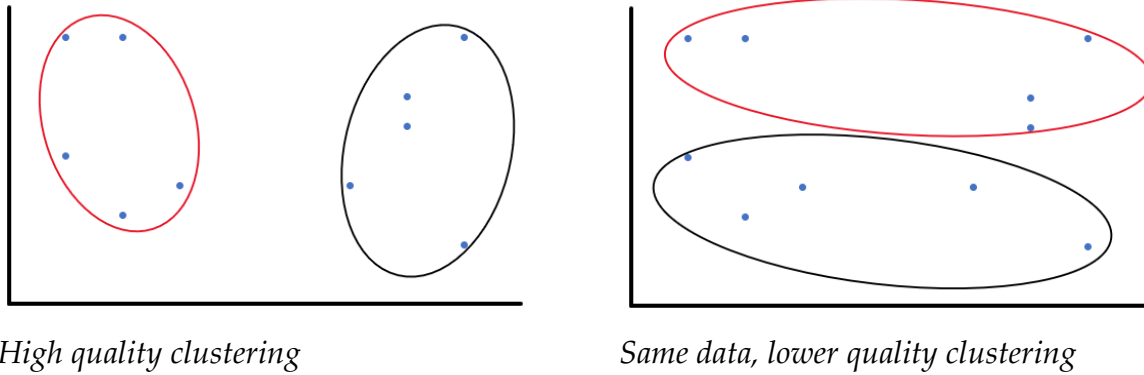
Feld also lays out a skeletal framework for how to define a sector. "[S]ector-specific regulation is premised on the idea that the sector has unique characteristics that differentiate it from other lines of commerce."³³ Slightly more precisely, such characteristics "raise issues and concerns that are common to all" companies in the sector but which are "not wholly shared by other services" outside the sector.³⁴

Data scientists call this "cluster analysis," and this is a useful metaphor for our discussion. Given a set of items, identify a subset—a cluster—of items that are similar to one another and dissimilar to items not in the cluster. The more similar are items within a cluster and the more dissimilar they are to other items, the higher the quality of the clustering analysis.

³² Feld, *supra* note 11, at 4.

³³ *Id.* at n.176.

³⁴ *Id.* at 31.



The quality of clustering depends on the measure of similarity, that is, the way we determine whether two items are similar. In the charts above, similarity is based on proximity in a two-dimensional graph. When trying to cluster companies into sectors, some measures or “dimensions” that we might use to judge similarity include:

- inputs
- business model
- business process and
- outputs

Using these dimensions, for example, we might cluster all local bakeries into a sector but would exclude car dealerships because they offer very different products with unrelated inputs, business models, processes, and outputs.

These are just a few of an infinite number of dimensions on which one might compare companies. Others might include annual revenue; sales in the past ten years; height of average employee; first letter of company name. In fact, with any group of companies you could almost certainly find at least one shared characteristic.

So, it is not enough that a sector includes companies that are alike on some dimensions; they must also be distinct from other, non-sector companies on those dimensions. Sector definition matters because the further the sectors are “set apart” — the higher quality the clustering—the greater a comparative advantage for the resulting

agency, and thus the stronger the efficiency justification for its creation. A low-quality sector definition makes it harder for an agency to specialize, weakens its comparative advantage, and therefore undermines its justification for existing. A high-quality sector definition strengthens the case for a new agency.

Finally, when defining the sector for a new agency, we must choose dimensions directly related to the concerns that we want the new agency to address. We are not just creating new agencies on a whim. We want them to be expert in solving certain issues and problems. Because the dimensions we choose identify what is unique about the sector, they determine where the agency has a comparative advantage. We would not group containerships and yellow rubber duckies under the same regulatory agency just because both float. Even if the “floats” dimension creates a high-quality clustering, an expertise in “floating” technology probably does not help address any regulatory problems we hope to solve.

To sum up, when defining a sector, we want a high-quality clustering of companies based on characteristics that directly relate to the issues in which the agency must be an expert.

2. The Difficulty of Defining the “Big Tech” Sector

Under this approach, how do the proposals fare in defining the “Big Tech” sector? On many dimensions, the companies that are most regularly lumped together differ significantly. Yet all the proposals identify characteristics shared by “digital platforms.” Several proposals connect those characteristics to competition issues—but those characteristics and thus those issues are also common in many other companies. Some of the proposals also list other, non-competition issues and problems for a digital regulator to address. But the proposals fail to demonstrate that such issues are related to the sector definition and thus susceptible to sectoral agency expertise.

As a result, the proposals offer low-quality definitions of the sector insufficient to

justify a new, sector-specific regulator.

a. Tech Companies Have Very Different Business Models, as the Proposals Acknowledge

Amazon, Google, Microsoft, Apple, and Facebook are frequently described as “tech companies.” Does this make them companies in the same sector? No. In fact, these are very different companies with very different core businesses. Microsoft sells operating systems and office productivity software. Google also offers a mobile operating system—which it gives away—but primarily sells search and interest-based advertising. Apple designs hardware and software and offers online services, such as the App Store and iTunes, where consumers can make purchases. Amazon runs an online marketplace, operates a variety of retail stores, and sells cloud-computing services. Facebook provides a variety of communication tools that allow users to post images, videos, and other content for their select audiences to communicate directly with other groups and individuals, and then sells advertising reaching this audience.³⁵

One way to test whether companies are in the same sector is who they compete against. Amazon’s online retail site competes against eBay and Walmart more than it does against Facebook or Google. Apple’s core device business competes with hardware manufacturers around the globe, including Samsung, LG, and Sony. Perhaps the closest of the major tech companies are Google and Facebook, who are both major players in online advertising.

³⁵ See David S. Evans, *Why the Dynamics of Competition for Online Platforms Leads to Sleepless Nights But Not Sleepy Monopolies*, (August 23, 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3009438. Outside of these core businesses, these companies are broadly diversified. They have many lines of business—many of which compete with other large firms across the economy. For example, Amazon provides an online shopping and logistics company. But it also runs a major cloud services and internet infrastructure company, AWS, which shares little business model DNA with its consumer shopping site, yet which competes against offerings from Oracle, Google, Microsoft, and others. Microsoft also owns the business-focused social media platform LinkedIn. Facebook offers hardware VR devices through Oculus. Google is researching self-driving cars. Amazon owns Whole Foods, a grocery store.

Another problem with defining the tech sector by the use of technology is that a wide and expanding category of businesses use these same technologies. In some sense, all companies are becoming tech companies.

In short, “tech” is not a sector. There is no general “tech” market or industry, or even a “digital platform” market or industry. Consumers are not searching for tech companies or digital platforms. In fact, these companies’ platforms serve very different consumer needs. Beneath the superficial similarity that these companies are big, use a lot of data, and often offer tools that connect people, defining the relevant industry is not so easy.

b. Tech Companies Share Characteristics with Each Other, but Also with Many Other Parts of the Economy

The proposals generally acknowledge that the big tech companies are quite different from each other.³⁶ But, as they point out, tech companies clearly share some characteristics. For example, the CMA report identifies the following common characteristics:

- network effects and economies of scale;
- consumer decision making and the power of defaults;
- unequal access to user data;
- lack of transparency;
- the importance of ecosystems; and
- vertical integration, and resultant conflicts of interest.³⁷

The other proposals offer similar lists.³⁸ However, these dimensions cannot define

³⁶ Feld, *supra* note 11, at 31; Stigler Report, *supra* note 7, at 7.

³⁷ CMA Report, *supra* note 3, at 11.

³⁸ Feld, *supra* note 11, at 21 (defining digital platforms as those that provide access through the internet, operate as multi-sided platforms that facilitate consumer-generated content and sell directly to consumers, and possess Reed or Metcalf network effects); Wheeler et al, *supra* note 15, at 36-37 (“[D]igital platforms are

a sector for the purposes of justifying a new agency. Many of these characteristics are common to all consumer-facing digital businesses, and many are also evident in non-digital businesses such as electronic payment systems,³⁹ airlines,⁴⁰ and even retail.⁴¹ As the Stigler Center report, which offers a similar list, admits, “From an economic perspective, there is no single new characteristic that would make competition in digital platforms different from more traditional markets.”⁴² Feld makes a similar point about his own slightly different list of characteristics, admitting “other successful (or even dominant) businesses [in other sectors] will replicate some of the features” of digital platforms, like Walmart did in expanding retail into groceries and pharmaceuticals.⁴³

If these characteristics do not differentiate so-called digital platforms from other companies, what comparative advantage would a new agency possess? A general consumer protection and competition agency like the Federal Trade Commission has expertise in each of the characteristics the CMA lists. The FTC also has actual experience in evaluating these characteristics, including investigations of each of the GAFAM companies.⁴⁴ The FCC has less experience in consumer decision making, user data access,

different,” because they “galvaniz[e] the power of network effects, economies of scope and scale, and massive amounts of data.”); Stigler Report, *supra* note 7, at 34 (“[T]he platforms with which this report is most concerned demonstrate extremely strong network effects, very strong economies of scale, remarkable economies of scope due to the role of data, marginal costs close to zero, drastically lower distribution costs than brick and mortar firms, and a global reach.”).

³⁹ Seth Priebatsch, *The Hidden Monopoly Behind All Those Whizbang New Ways to Pay for Stuff*, FAST COMPANY (Apr. 10, 2013), <https://www.fastcompany.com/3008076/hidden-monopoly-behind-all-those-whizbang-new-ways-pay-stuff>.

⁴⁰ David Koenig & Scott Mayerowitz, *Analysis: Consolidation of U.S. Airline Industry Radically Reducing Competition*, SKIFT (Jul 14, 2015), <https://skift.com/2015/07/14/analysis-consolidation-of-u-s-airline-industry-radically-reducing-competition/>.

⁴¹ *Monopoly by the Numbers*, OPEN MARKETS, <https://www.openmarketsinstitute.org/learn/monopoly-by-the-numbers>. (listing 36 other industries with market concentration concerns).

⁴² Stigler Report, *supra* note 7, at 34.

⁴³ Feld, *supra* note 11, at 34.

⁴⁴ “GAFAM” stands for “Google, Amazon, Facebook, Apple, and Microsoft.”

and transparency, but plenty of experience in the other dimensions, albeit in the telecommunications sector. The CMA factors do not differentiate these companies sufficiently to demonstrate a need for new expertise.

The Stigler Center report claims that the difference is in scale and overlap of these issues.⁴⁵ Similarly, the CMA argues that these characteristics are “mutually reinforcing and in combination provide an unassailable incumbency advantage.”⁴⁶ Thus the argument seems to be that a Digital Authority would specialize in the unique overlap of conventional expertise. However, existing agencies already in possession of that conventional expertise would seem to be well-positioned to study and specialize in the overlap of those areas of expertise.

c. None of the Proposals Define a Differentiated Sector that Justifies a New Expert Agency

Given the wide variation of tech companies’ business models, it is no surprise that the proposals struggle to define the sector which a new agency would regulate. Only one, Feld, makes a serious attempt to do so. The rest adopt definitions without any substantial justification—a narrow and specific definition, in the case of the CMA report, or expansive and vague definitions, as in the Shorenstein and Stigler reports.

While the CMA report lists some broadly applicable characteristics, as noted above, those characteristics are not how it defines the sector. Instead, perhaps recognizing the problems with sweeping such vastly different companies into the same sector, the CMA report focuses exclusively on “platforms funded by digital advertising.”⁴⁷ That definition includes the core businesses of Google and Facebook. But it excludes the core businesses of companies like Amazon and Apple, which the report characterizes as

⁴⁵ Stigler Report, *supra* note 7, at 34.

⁴⁶ CMA Report, *supra* note 3, at 11.

⁴⁷ *Id.* at 5.

“transaction-based platforms.”⁴⁸ It also excludes Microsoft. This definition helps the CMA report narrow its analysis (it is by far the most empirical of the proposals). And this definition does offer a differentiated area of expertise. But the report does not explain why it drew the lines so narrowly. In fact, the exclusive focus on Google and Facebook suggests the CMA believes other big tech companies are in different sectors.

Of all the proposals, Harold Feld’s offers the most overt definition of digital platforms. In fact, as demonstrated above, Feld appears to have thought more deeply about the importance of a clear sector definition than have the others. Feld defines the digital platforms as services that:

- provide access through the internet,
- operate as multi-sided platforms that
- facilitate consumer-generated content and sell directly to consumers, and
- possess Reed or Metcalf network effects.⁴⁹

This is a broad definition—certainly broader than CMA’s. But Feld’s definition still has ascertainable contours. For example, Feld argues that Netflix is not a digital platform under his definition because its primary business does not facilitate consumer-generated content.⁵⁰

In a later section of his report, Feld notes that some attack the very premise of his proposal by arguing that “[d]igital platforms do not form a distinct sector of the economy” and that the characteristics of digital platforms that Feld identified “are merely aspects of a business model rather than features that define a sector in need of sector-specific supervision.”⁵¹ In other words, they challenge his definition as a low quality

⁴⁸ *Id.* at 43.

⁴⁹ Feld, *supra* note 11, at 21.

⁵⁰ *Id.* at 31.

⁵¹ *Id.* at 190-91.

clustering. Somewhat surprisingly, having acknowledged this fundamental challenge, Feld barely engages with it. He instead just flatly asserts that “[d]igital platforms are now a distinct sector of the economy that impinges on nearly every aspect of our lives.”⁵² His lengthy discussion of how to define digital platforms does not offer much of a defense, either. The companies that fall under Feld’s definition of “digital platforms” do very different things. While the companies share some characteristics with each other, they also share these and other important characteristics with many other companies. In short, his sector definition lacks differentiation.

Another way to highlight the low-quality clustering of Feld’s definition is to consider the scope of problems he expects a new agency to address. Feld would charge a new digital agency with a wide range of different responsibilities: competition, privacy, content moderation, promotion of diverse viewpoints, public safety, disability access, and consumer protection, among others. What does this enormous range of issues have to do with the dimensions of Feld’s sector definition? Feld does connect his definition to competition issues, arguing that the features of his definition “potentially create enduring market power in ways that challenge modern antitrust analysis.”⁵³ But he fails to connect his sector definition to any of the other areas the new agency would regulate. Why, for example, would an agency expert in multi-sided platforms have a comparative advantage in addressing privacy concerns or free speech concerns? Feld does not say.

Indeed, Feld is not particularly confident in the definitiveness of his definition. He admits that “[t]he shape of the sector may not become clear for some time, and Congress may need to revisit its initial decision.”⁵⁴ Given that “sector-specific regulation requires a definition of the sector,” it would seem prudent to seek an alternative to a sector-specific

⁵² *Id.* at 191.

⁵³ Feld, *supra* note 11, at 36-41. Analysis elsewhere in this report responds to the substance of that argument.

⁵⁴ *Id.* at 190.

regulator while the shape of the sector remains unclear.⁵⁵

The Stigler and Shorenstein proposals are not nearly as selective as the CMA or Feld proposals, instead offering very broad, almost unbounded definitions. Such broad sector definitions offer little guidance as to the expected expertise of the proposed new agency.

The Shorenstein Center's report defines the regulated industry as "consumer-facing digital activities of companies with significant strategic market status."⁵⁶ This broad category arguably includes any large consumer company with an online presence, and almost certainly retailers like Walmart and Target. Can any agency be an expert in such a wide swath of the economy? The expertise required is even broader when one considers that determining "significant strategic market status," will require the agency to understand the markets more generally; they cannot focus only on the biggest companies.

The Stigler Center recommends "establishment of a sectoral regulator" called the Digital Authority (DA) to govern "Digital Platforms," which it acknowledges "lacks a consistent definition" but under which it includes Google, Facebook, Amazon, Apple, and Microsoft.⁵⁷ The report argues that the DA's "scope of regulatory power . . . must include digital businesses that facilitate transactions of any kind (including the sale of advertising)."⁵⁸ And "in order to prevent firms subject to regulation from evading its oversight," the DA needs "broad authority over digital business models. . . ."⁵⁹ It is difficult to identify any online business that doesn't fall within these broad definitions.⁶⁰

⁵⁵ *Id.* at 4.

⁵⁶ Wheeler et al, *supra* note 15, at 16.

⁵⁷ Stigler Report, *supra* note 7, at 7, 100.

⁵⁸ *Id.* at 105.

⁵⁹ *Id.*

⁶⁰ The Stigler Center's policy brief focuses primarily on Google and Facebook, suggesting they believe these companies raise the biggest issues or are the most representative of the universe of problems. *Id.* at 7 (noting

To “specialize” in such a broad swath of online activity is to not specialize at all.

Perhaps the difficulty that these proposals face in defining a sector is not surprising. Since each proposal argues that these companies have significant or even dominant market power, they must walk a tightrope. Claiming that these companies are part of same industry suggests that they compete, undermining such allegations of market power. However, acknowledging that the companies serve different markets suggests there may not be a common expertise that would justify a new agency. Still, no proposal for a new agency can make a compelling case for a new regulator without adequately defining the sector to be regulated, and none of these proposals do.

B. The Proposals Fail to Explain Why Enhancing Existing Agencies is Inadequate

Existing agencies already have expertise relevant to the issues that the proposals raise. Notwithstanding this, each proposal argues that current agencies lack the resources, expertise, or authority to govern the relevant companies.⁶¹ But only two of the proposals expressly argue that such resources, expertise, and authority would be best deployed in a new agency—and one of those, Feld, concludes that, while desirable, a new agency probably is not politically feasible.

1. The Shorenstein Center Seeks a Novel Regulatory Approach that Could Work in a New Agency—but Could Also Work in an Existing Agency

The Shorenstein Center report unequivocally argues that we need a new agency.

that, of the largest companies, market power concerns apply to Google, Facebook, Amazon, Apple, and Microsoft while concerns about news media and democracy are more concentrated on Google and Facebook.) The emphasis on Google and Facebook would be consistent with the elsewhere-stated views of economist Fiona Scott Morton, chair of the Stigler Center’s Subcommittee on Market Structure and Antitrust; she has worked for Amazon and Apple and stated that “I work for companies that I’m comfortable are not breaking the law.” See David McLaughlin, *Star Critic of Big Tech Has Side Gig Working for Amazon, Apple*, BLOOMBERG (June 17, 2020), <https://www.bloomberg.com/news/articles/2020-07-17/amazon-apple-hire-one-of-big-tech-s-most-prominent-u-s-critics>.

⁶¹ See Stigler Report, *supra* note 7, at 12; CMA Report, *supra* note 3, at 332, ¶7.41; Wheeler et al, *supra* note 15, at 38-39; Feld, *supra* note 11, at 191.

We should “not bolt on authority to an existing agency,” the report argues, because “[e]xisting agencies, as a result of their statute, staff, tradition and jurisprudence are infused with an inherently analog DNA” when what is needed is “digital DNA.”⁶² “Old agencies (even if their statutes are updated) are saddled with legacy precedents . . . ,” it claims.⁶³ Existing agencies are also stretched thin executing their current duties. Therefore, “[r]ather than bolt on to and dilute an existing agency’s responsibilities, it is preferable to start with a clean regulatory slate and specifically established congressional expectations.”⁶⁴

The core of the Shorenstein Report’s case for a new agency, then, boils down to the claim that “digital oversight must be different.”⁶⁵ Different how?

What sets the DPA apart from traditional agencies is twofold: (1) its combination of agile regulatory operations with the kind of public participation required in the APA, and (2) its focus on concerns that flow from network effects, the power of data collection and exploitation, and the winner-take-all nature of digital platforms.⁶⁶

Applying the taxonomy of agency expertise set out previously, the first invokes *process expertise* (*how* the agency will regulate) and the second invokes *industry expertise* (*what* or *whom* the agency will regulate). We have already looked at the Shorenstein report’s weaknesses in identifying industry expertise: the report defines covered entities so broadly as to offer little insight into what new expertise a new agency would bring.

What about the need for new process expertise? The authors propose an entirely “new approach to regulation.”⁶⁷ This approach has at least three serious internal tensions. First, it criticizes using “statutory expectations established in the industrial era” to regulate novel digital platforms yet would impose common law principles that are much

⁶² Wheeler et al, *supra* note 15, at 19.

⁶³ *Id.* at 20.

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.* at 51.

⁶⁷ Wheeler et al, *supra* note 15, at 49.

older—and already apply to these companies.⁶⁸ Second, common law principles are flexible specifically because courts apply them *ex post*, on a case-by-case basis; yet the report laments a lack of *ex ante* rules and calls for the new agency to regulate.⁶⁹ Finally, the report proposes to keep up with fast-changing digital technology through “agile regulatory operations” that would “supplement the traditional notice and comment rule-making of a federal agency.”⁷⁰ The report details this workflow but does not explain how adding a layer of procedure to the current rulemaking process would expedite that process.⁷¹

Still, regardless of whether this new approach would be effective, it certainly would require a novel kind of procedural expertise. Existing agencies have some relevant experience: the FTC has expertise in applying broad standards in a flexible manner, and other agencies such as the National Telecommunications and Information Administration (“NTIA”) have expertise in stakeholder consensus processes. But no existing agency would have a substantial comparative advantage over a new agency in implementing this new regulatory approach.

The Shorenstein report specifically rejects the Federal Trade Commission as a candidate for new authority, but its arguments are not strong. The report argues that the FTC is not suited to governing digital platforms because its authority has been constrained by Congress in the past.⁷² But creating a new agency would also require an act of Congress. The report does not explain why Congress would rather embrace and sustain a new agency with broad authority rather than expand the FTC’s authority. The

⁶⁸ *Id.* at 41.

⁶⁹ *Id.* at 8.

⁷⁰ *Id.* at 57-58.

⁷¹ *Id.* at 58-59.

⁷² *Id.* at 45.

report further claims that “the FTC’s resources are already spread thin.”⁷³ This criticism also rings hollow. In fact, it would be easier for Congress to allocate additional funds and resources to an established agency than it would be to structure and fund a new agency.

The Shorenstein report makes a related but distinct argument that “add[ing] oversight of digital platform activities to [the FTC’s] portfolio would defocus the agency from its essential tasks.”⁷⁴ Implicitly, the report is acknowledging that agencies charged with deploying many different, unrelated types of tasks have little comparative advantage over more focused distributions of responsibilities. The Shorenstein proposal itself is vulnerable to this criticism, given the amorphous definition of the sector it wants to regulate and the vast range of problems its preferred digital regulator would cover. But given the broad expertise required for the Shorenstein center’s proposed agency, there would be overlap with the FTC’s competition and consumer protection missions, offering mild synergies.

In sum, the Shorenstein report makes a plausible case that a new agency could build a comparative advantage in process expertise. The question, then, is whether any benefits of this novel process expertise in a new agency outweigh the detriments of a poorly defined industry expertise that overlaps with expertise in existing agencies.

2. Harold Feld’s Argument for a New Agency Hinges on his Problematic Sector Definition, and Even He Gives it Up

In his proposal for a “Digital Platform Act,” Harold Feld argues that existing federal agencies lack the expertise to regulate the largest digital platforms, and that “the cleanest solution to the question of implementation is to start fresh.”⁷⁵

Feld compares three options: amending the Federal Trade Commission, amending

⁷³ Wheeler et al, *supra* note 15, at 38.

⁷⁴ *Id* at 19.

⁷⁵ Feld, *supra* note 11, at 194.

the Federal Communications Commission, and starting fresh with a new agency. Again, Feld puts forth the most thoughtful analysis of the proposals. As he notes, “any agency—whether existing or created for the purpose of implementing and enforcing the DPA—will need to hire new staff and acquire new skills.”⁷⁶ The question is which approach will be “cheaper and more effective” at implementing his recommendations?⁷⁷

Feld advances four arguments for a new agency. Three depend on the unfounded assumption that the sector has been clearly defined. First, he argues that a new agency would have “fresh eyes” with which to view the unique characteristics of companies in the sector.⁷⁸ Even if novice observation were preferable to experience, this assumes there are unique characteristics that identify these companies. But as discussed earlier, every elements of Feld’s digital platform definition also characterizes companies in other identifiable sectors—there are no unique characteristics for a new agency to specialize in. At best, there may be a unique overlap of characteristics. Second, he argues that a new agency would not be distracted by issues outside of this important sector. But because the characteristics that define this “sector” are not unique and therefore other agencies already have relevant expertise, it would be a benefit, not a distraction, to bring such expertise to bear. Third, he claims that a new regulator dedicated entirely to digital platforms would be better at identifying and carefully judging the differences between various platforms. This could be true if the sector was sufficiently distinct so that a new agency could develop a comparative advantage. But Feld’s sector definition overlaps sufficiently with the expertise of other agencies that it is not obvious that a new agency would be more discerning.

Feld also argues that “[t]here is already more than enough work to justify creation

⁷⁶ *Id.* at 193.

⁷⁷ *Id.* at 191.

⁷⁸ *Id.* at 194.

of a separate agency.”⁷⁹ But the volume of work cannot alone justify the creation of a new agency rather than expanding an existing agency.

In any case, Feld observes that a new agency faces difficult political barriers due to greater expense and potential jurisdictional battles with existing agencies. Expanding the jurisdiction of the FTC or the FCC (Feld’s preference) might be more plausible. Ultimately, he concludes that “[r]ather than rushing to answer the question, Congress should instead focus on drafting a suitable, comprehensive Digital Platform Act and then determine based on the content of the DPA which path to follow.”⁸⁰

* * *

In sum, the proposals fail to make a compelling positive case for a new agency to regulate big tech. They struggle to even define the to-be-regulated sector, leaving it unclear what expertise the new agency would develop. The two proposals that make a case for a new agency (rather than just suggesting it as a possible alternative) offer benefits of a new agency that are, at best, very slight and mostly speculative.

IV. AN AGENCY FOCUSED ON BIG TECH WOULD MAKE THINGS WORSE

The proposals offer only the slightest reason to believe that a new agency to regulate big tech would be superior to other reforms, such as modifying existing agencies. Most do not at all consider the risks of creating a new agency; a few do, but only in passing. Yet there are good reasons to worry that creating a new big tech regulatory agency would actually make things worse by leading to regulatory capture and by wasting taxpayer money.

A. A “Big Tech” Regulator Would be Captured by Big Tech

The biggest problem with creating a specialized agency is that such agencies are

⁷⁹ *Id.* at 194.

⁸⁰ *Id.* at 27.

more vulnerable to regulatory capture. Instead of creating a new, separate agency to regulate big tech, Congress should assign any new authority and expertise to existing agencies, particularly to generalist agencies like the Federal Trade Commission, which—as even the Stigler Center report acknowledges—have proven relatively resistant to regulatory capture.⁸¹

1. All Agencies Tend Toward Capture

The basic idea of regulatory capture was explained by Nobel Memorial Prize-winning economist George Stigler, who argued that “regulation is acquired by the industry and is designed and operated primarily for its benefit.” In his foundational paper, “The Theory of Economic Regulation,” he warned that any regulated industry has strong incentives to form close connections with its regulators to seek favors. The inevitable result is that the industry disproportionately influences the agency’s agenda, shapes its rulemaking and even supplies it with personnel.⁸² Captured agencies do not hold companies accountable; instead, they act to benefit the industry’s established players, disadvantaging newer firms and the public at large.

The forms and causes of regulatory capture vary, and regulatory capture is nearly always a question of degree.⁸³ The most egregious forms of regulatory capture are government “oversight” organizations occupied and controlled by the regulated entities themselves. For example, state boards responsible for setting the rules for the practice of dentistry should not be (but often are) dominated by practicing dentists.⁸⁴

⁸¹ Stigler Report, *supra* note 7, at 18 (“[T]he FTC [is], an across-industry authority with a better-than-average record of avoiding capture.”).

⁸² See Neil Chilson, *Creating A New Federal Agency To Regulate Big Tech Would Be A Disaster*, WASH. POST, (October 30, 2019), <https://www.washingtonpost.com/outlook/2019/10/30/creating-new-federal-agency-regulate-big-tech-would-be-disaster/>.

⁸³ Nicholas Bagley, *Agency Hygiene*, 89 TEX. L. REV. 1, 5 (2010).

⁸⁴ N.C. State Bd. of Dental Exam'rs v. FTC, 574 U.S. 494 (2015). For more on these types of organizations, and occupational licensing more generally, see Maureen Ohlhausen, *Occupational Licensing in Digital*

But regulatory capture occurs even when agencies are populated by government officials who are independent. Public choice scholars have explained how agency leaders will act in rational self-interest by seeking to keep their position and to expand the power and budget of the agency and to secure prestigious or profitable positions after leaving leadership.⁸⁵ This requires currying favor with influential politicians and powerful interest groups, usually by employing the tools of the regulator in favor of those groups' interests.⁸⁶

Capture can happen in less cynical and more subtle ways. Agency expertise requires experience or long-term interest in the regulated industry, and individuals with that background will tend to view issues from the perspective of that industry, want that industry to thrive, and draw information from industry sources. "Thus, even a benign, well-intentioned industry expert will be inclined to render decisions that favor the industry he regulates."⁸⁷

Regulatory capture undermines the agency's oversight mission, shifting the benefit away from the public and toward the regulated industry. Perhaps most concerning, regulated incumbents can use the power of the captured agency to establish a significant barrier against competition. For example, industry participants might directly convince regulators to subsidize their businesses, giving them an advantage against would-be competitors. More subtly, large firms might support costly compliance regimes that disproportionately disadvantage smaller firms. In either case, this type of "public competition" is a particularly pernicious type of rent-seeking.⁸⁸

Markets, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁸⁵ Jeffery J. Rachlinski & Cynthia R. Farina, *Cognitive Psychology and Optimal Government Design*, 87 Cornell L. Rev. 549, 567-68. For more on public choice theory, see Thom Lambert, *Rent Seeking and Public Choice in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁸⁶ Rachlinski & Farina, *supra* note 85.

⁸⁷ Macey, *supra* note 29, at 103.

⁸⁸ Joshua Wright, *Regulation in High-Tech Markets: Public Choice, Regulatory Capture, and the FTC*, FED. TRADE

Even absent overt acts by the regulated firms, regulation and incumbent business models will naturally co-evolve to fit each other. Disruptive business models that do not fit into the current regulatory boxes will face significant regulatory risks in this circumstance. Some have called this the “procrustean problem” of regulation after the ancient Greek myth in which a rogue blacksmith stretches or amputates human visitors to fit his iron guest bed.⁸⁹ Regulators need to fit and classify companies according to regulatory categories, and this naturally benefits incumbent business models while disadvantaging novel and experimental approaches.

This type of regulatory capture creates a status quo bias. The mismatch between existing regulation and a new business model can mean that innovative ways of accomplishing certain goals may be legally risky to pursue not because they are dangerous or harmful but because they were not contemplated when the regulation was developed. At best, innovators in this situation will have to educate regulators and potentially pursue regulatory changes. At worst, innovators will be warned off by their lawyers and investors, will choose to pursue less legally uncertain endeavors, and the agency will not even know the chilling effect its framework is having.

2. The Risk of Regulatory Capture is Higher for Specialized Agencies

Regulatory capture is a problem that all agencies face. However, a sector-specific regulator of big tech is more likely to be captured than are generalist agencies like the Federal Trade Commission.⁹⁰ Yale Law Professor Jonathan R. Macey examines this issue in depth in his article, “Organizational Design and Political Control of Administrative

COMM’N (2015), <https://www.ftc.gov/public-statements/2015/04/regulation-high-tech-markets-public-choice-regulatory-capture-ftc>.

⁸⁹ Maureen K. Ohlhausen, *The Procrustean Problem With Prescriptive Regulation*, 23 COMMLAW CONSPECTUS 1 (2014) https://www.ftc.gov/system/files/documents/public_statements/606381/141222commlaw.pdf.

⁹⁰ Wright, *supra* note 88, at 27 (“Second, unlike . . . commissions that exist to regulate a specific industry, the FTC has economy-wide jurisdiction.”).

Agencies,” where he analyzes the outcomes from “the most fundamental choice of agency design: whether to create a single industry regulatory agency or a multi-industry agency.”⁹¹ As he explains:

Where a regulatory agency represents a single ‘cliente,’ the rules it generates are far more likely to reflect the interests of that clientele than the rules of an agency that represents a number of clienteles with competing interests.⁹²

That is, the smaller the number of companies under a regulator’s jurisdiction, the easier it is for those companies to capture the regulator. This is because the pressures toward regulatory capture are amplified for more specialized agencies. Although James Madison was comparing forms of national government rather than forms of agencies, his discussion of factions in Federalist 10 helps explain why narrowly specialized agencies face heightened risks of capture:

[T]he fewer the distinct parties and interests, the more frequently will a majority be found of the same party; and the smaller the number of individuals composing a majority, and the smaller the compass within which they are placed, the more easily will they concert and execute their plans of oppression.⁹³

In other words, a small group with similar interests and perspectives can more easily bend government action to its benefit. When a small interest group has a dedicated regulator, the risk of regulatory capture is at its peak. “The interest group that is regulated by a single regulatory agency will be able to influence that agency to a far greater extent than the interest groups that must ‘share’ their agency with a variety of other interest group,” argues Professor Macey.⁹⁴ By contrast, government actors with jurisdiction over a wide range of conflicting interests are “beholden to many but captured by none.”⁹⁵

⁹¹ Macey, *supra* note 29, at 93

⁹² *Id.* at 94

⁹³ THE FEDERALIST NO. 10 (James Madison).

⁹⁴ Macey, *supra* note 29, at 99.

⁹⁵ Rachlinski & Farina, *supra* note 85, at 34. This claim is often made in support of a more unitary executive that would more directly control administrative agencies, for example. The argument is that the President, with the largest electoral constituency, highest visibility, and therefore greatest degree of accountability, best insulates the agency decisionmakers from interest group pressure. See Lawrence Lessig & Cass R.

Incumbents regulated by a specialized agency can more easily weaponize regulation against new competitors, often with the regulator's help. Competitive threats to a sector also threaten the sector-specific regulator. In fact, "[t]he creation of administrative agencies helps insure against an industry's obsolescence by creating a regulatory body with incentives to pass rules that increase the probability of the industry's survival," Macey explains.⁹⁶ For instance,

[L]ong after there was any economic need for a savings and loan industry, thrift regulators took extraordinary steps to ensure the industry's survival. The regulators acted as they did, not to further the public interest, but because they understood that the survival of the industry was crucial to their own professional survival.⁹⁷

In such situations, outside innovators can face a unified front of incumbents and regulators seeking to control disruption in their own interest, not in the public interest. This weaponization of a regulatory agency by incumbents is particularly harmful in industries with the potential for rapid and disruptive innovation, where the existential threat is heightened.⁹⁸

For these reasons, the decision to create a new, sector-specific agency should not be taken lightly. "[T]he ability to structure the initial design of an agency," Macey argues, "may well be the most powerful device available to politicians and interest groups" to shape the future path of an agency after its creation.⁹⁹ Specifically, when Congress chooses between a "single-interest" or "multi-interest" design for an agency, it affects

Sunstein, *The President and the Administration*, 94 COLUM. L. REV. 1, 93-106 (1994); Dennis W. Carlton & Randal Picker, *Antitrust and Regulation*, at 27-28 (Nat'l Bureau Econ. Res. Working Paper 12902, Feb. 2007), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=963735 ("The FTC, unlike industry specific regulatory bodies, deals with industry in general. Perhaps this explains why, at least to date, we are unaware of claims that the FTC has been captured by any industry or special interest group.")

⁹⁶ Macey, *supra* note 29, at 96.

⁹⁷ *Id.* at 97.

⁹⁸ Carlton & Picker, *supra* note 95, at 29 ("[W]e need to recognize the inefficiencies that can arise as regulators cater to special interests or make mistakes. That is an especially strong problem in industries undergoing rapid technological change, where mistakes can impose huge costs.").

⁹⁹ Macey, *supra* note 29, at 100

which groups will be influential repeat dealers and which will be infrequent and thus less influential.¹⁰⁰ Macey compares single interest agencies like the Securities and Exchange Commission with multi-interest agencies like the Occupational Safety and Health Administration. He provides example after example of the SEC, the Commodities Futures Trading Commission and other sector-specific agencies serving the interests of the firms they regulate.¹⁰¹

Establishing a sector-specific agency comes with significant risks that the agency will serve the interests of the regulated industry rather than the public interest. In contrast, “[t]he FTC, unlike industry specific regulatory bodies, deals with industry in general. Perhaps this explains why, at least to date, we are unaware of claims that the FTC has been captured by any industry or special interest group.”¹⁰²

3. The Proposals Offer No Defense from Capture—and One Proposal Appears to Encourage It

Regulatory capture is the biggest risk in creating a new sector-specific regulator. But the proposals hardly address this risk; when they do, they offer superficial solutions; and one proposal seems almost purpose-built to encourage regulatory capture. If the proposals honestly grappled with the risk of regulatory capture, their arguments for a new agency would be more persuasive. As it is, however, they have only counted the benefits and ignored the single biggest cost.

Neither the CMA report nor the Shorenstein report even mention regulatory capture. Feld’s disdain for the language of public choice theory fairly oozes from the pages of his proposal; he only refers to “agency capture” to dismiss it as “dogma” or as

¹⁰⁰ *Id.*

¹⁰¹ *Id.* at 104-107

¹⁰² Carlton & Picker, *supra* note 95, at 27.

an “outsized influence on public policy.”¹⁰³ He does raise capture concerns about embedding the digital regulator within the FCC, although he doesn’t use that language.¹⁰⁴ But he does not mention any potential concerns about regulatory capture of a new agency.

The Stigler Center (yes, named after the father of regulatory capture studies, George Stigler) does only marginally better. It eagerly recommends a new agency throughout the body of the report.¹⁰⁵ It expresses generic capture concerns in a few locations.¹⁰⁶ But the only mitigation it suggests is a two-sentence fix in the cover Policy Brief.¹⁰⁷ That proposed fix: transparency and “at least initially—to have the Digital Authority as a subdivision of the FTC, an across-industry authority with a better-than-average record of avoiding capture.” That is, the Stigler Center recommends fixing regulatory capture concerns of a new agency by *abandoning* the recommendation of a new agency. While the report deserves credit for reaching a reasonable conclusion, I have argued separately:

This is not strong evidence of a thoughtful approach to regulatory capture. Instead, . . . this tack-on paragraph looks more like someone raised last-minute concerns that George Stigler might have objected to creating an entire new agency.¹⁰⁸

In further evidence of a failure to grapple with the challenge of regulatory capture, the Stigler Center report claims that the FCC “may offer the best guidance for how to

¹⁰³ Feld, *supra* note 11, at 77

¹⁰⁴ *Id.* at 192-93.

¹⁰⁵ See, e.g., Stigler Report, *supra* note 7.

¹⁰⁶ See, e.g., *Id.* at 101, 104; The Policy Brief claims that “The [subcommittee] Reports discuss a range of different institutional design mechanisms that can be explored to protect the Digital Authority from capture.” I have addressed this claim elsewhere, noting that “there isn’t much in the subcommittee reports either.” See Neil Chilson, *Thank you, Stigler Center, for the Compliment. Now Here’s Why You’re Wrong*, TRUTH ON THE MARKET (Mar. 13, 2020), <https://truthonthemarket.com/2020/03/13/thank-you-stigler-center-for-the-compliment-now-heres-why-youre-wrong/>.

¹⁰⁷ Stigler Report, *supra* note 7, at 18.

¹⁰⁸ Chilson, *supra* note 106.

approach public accountability for digital platforms.”¹⁰⁹ Several of the other proposals also draw upon the example of the FCC.¹¹⁰ Yet the history of the FCC is a history of regulatory capture. At nearly every turn, with every new potentially disruptive communications innovation, the FCC (and its predecessor, the Federal Radio Commission) did the bidding of the best-connected incumbents. As I have written elsewhere,

For example, almost immediately after its creation, the Federal Radio Commission sided with industry players when it rejected the expansion of AM radio bands at the behest of existing commercial broadcasters. Later, the agency slowed the development of FM radio to protect AM radio manufacturers. It cracked down on early “community antenna television” (cable TV) to protect the broadcast television industry; conducted “beauty contests” to parcel out valuable broadcast licenses, sometimes to the politically connected (such as President Lyndon Johnson’s wife); and slowed approvals and imposed onerous regulations on satellite radio services to protect traditional radio stations.¹¹¹

As former FCC chairman Michael Powell said, “[T]he history of the FCC is, when something happens that it doesn’t understand, kill it. We tried to kill cable. We tried to kill long-distance. When [MCI founder] Bill McGowan start[ed] stringing out microwave towers that threatened AT&T, the FCC tried to stop him. The FCC tried to kill cable because it was going to threaten broadcasting.”¹¹² While the FCC didn’t completely halt technological progress or competition, it often slowed progress for years, and occasionally by decades.¹¹³

The Stigler Center report briefly acknowledges the FCC’s long and sordid history of regulatory capture but offers no suggestions for how to prevent that history from

¹⁰⁹ See Stigler Report, *supra* note 7, at 101-104.

¹¹⁰ Caves & Singer, *supra* note 23 at 21; Feld, *supra* note 11, at 192-194

¹¹¹ See Neil Chilson, *Creating a New Federal Agency to Regulate Big Tech Would be a Disaster*, WASH. POST (Oct. 30, 2019), <https://www.washingtonpost.com/outlook/2019/10/30/creating-new-federal-agency-regulate-big-tech-would-be-disaster/>; See generally, THOMAS HAZLETT, *THE POLITICAL SPECTRUM: THE TUMULTUOUS LIBERATION OF WIRELESS TECHNOLOGY, FROM HERBERT HOOVER TO THE SMARTPHONE* (2017).

¹¹² Nick Gillespie et al, *The Reluctant Planner*, REASON (2004), <https://reason.com/2004/12/01/the-reluctant-planner-2/>

¹¹³ See generally, HAZLETT, *supra* note 111.

reoccurring in a digital regulator.¹¹⁴

But while the other proposals largely pretend regulatory capture does not exist, the Shorenstein Center report almost seems to actively embrace it. The report suggests an architecture for a Digital Platform Agency (DPA) that appears particularly vulnerable to regulatory capture for two reasons. First, it encourages personnel likely to have broad alignment with industry. The report calls for the DPA to be led by commissioners and staff with “digital DNA,” that is, subject matter expertise as well as management experience.¹¹⁵ The largest source of these types of individuals will be from industry, of course, and as discussed earlier even independent-minded individuals with this kind of background will still tend to operate within the industry paradigm.¹¹⁶

Second, it proposes a cooperative regulatory model that will inherently benefit incumbents. To “mitigate[e] the traditional complaint of regulatory overreach and lack of agility” the Shorenstein Report proposes that a “Code Council” of industry and public representatives cooperatively develop codes of behavior for digital companies.¹¹⁷ Such codes would be then circulated for public comment on an accelerated timeframe and then considered by the DPA commissioners for adoption as binding rules. Giving private interests an elevated role in rulemaking and the ability to set the agenda while compressing the time for public review likely increases the already significant risk of regulatory capture that this kind of sector-specific agency would face. Indeed, this proposal sounds similar to the “offeror process” that Congress created for the Consumer Product Safety Commission—a process that was so “dominated by industry” that

¹¹⁴ Stigler Report, *supra* note 7, at 103-04.

¹¹⁵ Wheeler et al, *supra* note 15, at 51.

¹¹⁶ See Stigler Report, *supra* note 7, at 290 (warning against “cultural capture” in situations of complex industries where the most or only qualified regulators come from industry).

¹¹⁷ Wheeler et al, *supra* note 15, at 57-58.

“Congress viewed [it] as a failure and abolished it.”¹¹⁸

Several of the proposals acknowledge that a new digital regulator would share jurisdiction with other agencies, particularly the antitrust agencies, and that this would require the various agencies to coordinate with each other. But if Congress creates such jurisdictional conflicts, it may generate a new problem. As Professor Macey puts it, “these conflicts tend to align the interests of the regulatory agency with the firms it regulates.”

¹¹⁹ In other words, a digital regulator would have strong incentives to expand its jurisdiction at the expense of other agencies—and this expansion is in the regulated firms’ interest as well. It could be that the new digital regulator becomes big tech’s biggest defender from antitrust enforcement.

B. A New Regulator Would Be Unnecessarily Expensive

Creating an entirely new agency would also be costly in practical dollar terms. Many of these are straightforward administrative costs. Compared to enhancing an existing agency, creating a new agency would have significant start-up costs as well as duplicative ongoing expenses. These costs can be substantial. Money that could be allocated to substantive roles would instead pay for staff and resources that support the substantive work at the new agency. (For example, around 20% of Federal Trade Commission employees are support or management.¹²⁰) And the flip side of starting with a clean slate is that a new agency has little or no experience to draw upon. To the extent the experience that is missing is related to the specific new problems the agency is intended to solve, the new agency is not disadvantaged relative to other agencies. Yet there are many other types of experience, including administrative procedures, human

¹¹⁸ Barkow, *supra* note 29, at 67-68.

¹¹⁹ Macey, *supra* note 29, at 106.

¹²⁰ *Federal Trade Commission Fiscal Year 2021 Congressional Budget Justification* 43, FED. TRADE COMM’N (Feb. 20, 2020), https://www.ftc.gov/system/files/documents/reports/fy-2021-congressional-budget-justification/fy_2021_cbj_final.pdf.

relations, press relations, litigation, and others where a new agency will need to build institutional competencies.

More substantively, creating a new agency with a mission and jurisdiction that overlaps with one or more existing agencies will incur several other types of costs. If both agencies retain jurisdiction, there will be coordination costs on future investigation, enforcement, and regulation. If the new agency displaces the old agency's jurisdiction, there will be the cost to transfer knowledge and talent from the old agency to the new one.

This overlap cost is highest for the broad proposals like Feld's and the Stigler Center, which envision a new agency that comprehensively regulates the subject companies on everything from privacy to antitrust to content moderation. Given that there are already agencies that specialize in many of those issues, the overlap will be significant and eliminating or accommodating it will be costly.

For example, the Federal Trade Commission has for twenty years been the primary federal protector of consumer privacy, bringing hundreds of enforcement actions, including against many of the biggest tech companies.¹²¹ If, as the Stigler Center report suggests, a new regulator would address these issues for the biggest tech platforms, there would be a complicated series of negotiations necessary to hand off governance from the FTC to the new agency. Transferring personnel from the FTC to a new agency would create its own problems. For example, because the FTC is responsible for enforcing privacy across the entire economy, cannibalizing its staff to create an agency focused only on the privacy of some subset of internet companies would leave the FTC shorthanded as it protects privacy in every other sphere of the economy.

¹²¹ *Privacy & Data Security Update: 2019*, FED. TRADE COMM'N, <https://www.ftc.gov/system/files/documents/reports/privacy-data-security-update-2019/2019-privacy-data-security-report-508.pdf>.

CONCLUSION

I noted early on in this chapter that these proposals were generally ambivalent about creating a new agency. It turns out this is for good reason: there are few benefits and significant risks. A new agency may have a mild comparative advantage in procedural expertise if an entirely new regulatory approach is adopted. Still, it will be very difficult to find that expertise and establish a focused mission for a regulator of such a diverse and dynamic collection of companies. To the extent additional expertise is needed for regulation, it can more easily and more efficiently be placed in existing agencies, especially generalist agencies. Perhaps most importantly, a new agency specialized on big tech would be more vulnerable to capture than existing generalist agencies. And finally, the practical costs of creating and maintaining a new agency would be higher than enhancing existing agencies.

In short, “big tech” might need new regulation; but it does not need a new regulator.

Essential Facilities Doctrine: Access Regulation Disguised as Antitrust Enforcement

Tad Lipsky

INTRODUCTION

As digital platforms have become ubiquitous, introducing novel services, revolutionizing business methods and triggering enormous changes throughout the economy and society, calls for limits on (and even breaking up) the largest digital platforms have emerged. Complaints range over a broad spectrum—privacy and data security, working conditions and freedom of expression, just to name a few. Concerns sounding in antitrust have also appeared on the long list of asserted grievances: Do platforms unlawfully squelch competitors, or tilt online markets toward their own products at the expense of independent suppliers? A wide variety of antitrust investigations, cases, and legislative proposals attempt to address these complaints. Some rely on well-recognized antitrust approaches; others seek to stretch or supplement current law, or even to create entirely new regulatory regimes.

Within the legal cauldron stirred up by the pervasive impact of digital platforms, there exists a class of complaints seeking to mandate access to the resources of the platforms. Legislative and regulatory proposals in a variety of jurisdictions (including the US) would substantially expand obligations for digital platforms to provide competitors or other third parties with access to various elements of the platforms' businesses—their networks, services, accumulated data and the algorithms and other mechanisms they employ to manage the flow of information and transactions.

Among the legal tools potentially available under U.S. antitrust law to those seeking such access is the essential facilities doctrine (EFD). First identified by name in 1977, a classic formulation of EFD holds that a competitor establishes illegal exclusionary conduct by a monopolist under Sherman Act Section 2 by showing:

1. the monopolist controls access to an essential facility;
2. the facility cannot be duplicated practicably by the competitor;
3. the monopolist has denied access to the competitor, and
4. it was feasible for the monopolist to grant such access.¹

This chapter describes the emergence of the EFD and reviews its development against the background of major trends in the continuing evolution of federal antitrust law. It then analyzes recent Supreme Court cases that have questioned and thereby undermined EFD, even though lower courts claim to derive the doctrine from the Court's earlier precedents. The main focus is on the emerging recognition by the Court that ongoing economic regulation of a monopoly business under the guise of antitrust is neither consistent with the fundamentals of the federal antitrust statutes, nor with basic institutional capacities of courts and antitrust enforcement agencies, as distinct from legislatures and the purpose-built agencies that engage in economic regulation pursuant to statute. The conclusion suggested by this analysis is that EFD is no more useful as a response to concerns about access to digital platforms than to the other situations that have led to the Court's profound doubts regarding EFD. The asserted competitive problems targeted by EFD claims may change as technology and business practices evolve, but the fatal weaknesses of EFD persist. If and to the extent digital platforms can be objectively shown to demonstrate any need for mandatory access by customers, competitors or others, mandatory access remedies should be addressed—if justified by responsible and conscientious policy analysis—through rules and institutions distinct from those of antitrust.

¹ *MCI Commc'ns Corp. v. American Tel. and Tel. Co.*, 708 F.2d 1081, 1132-33 (7th Cir. 1983), *cert. denied*, 464 U.S. 891 (1983).

I. ORIGINS OF EFD

EFD initially emerged in the US as a lower-court gloss on three Supreme Court antitrust decisions: *United States v. Terminal Railroad Association*,² *Associated Press v. United States*,³ and *Otter Tail Power Co. v. United States*.⁴ The first known judicial use of the phrase “essential facilities doctrine” did not occur until 1977, in *Hecht v. Pro-Football, Inc.*⁵ The emergence of EFD is not a simple story, as one might guess from the basic fact that it took 65 years after *Terminal Railroad* before lower courts identified EFD as a distinct theory of Sherman Act liability. Over that same period both the antitrust statutes (notably, the enactment and strengthening of the Clayton Act) and the Court’s basic approach to antitrust-law interpretation underwent several important refinements. Moreover, several of these key advances in antitrust doctrine occurred just following the last of the three fundamental decisions (*Otter Tail*) in 1973. Each of the three Supreme Court cases involved both factually and legally complex disputes and all are widely separated by time, circumstances, and key characteristics. As a result, it takes a bit of scholarly *gasconade* to claim that they are united by any single doctrine. Even if such a unifying theme could be elicited from these early cases, it is far from clear that the central meaning of the trilogy survives the post-1973 developments outlined below.

Although the doctrine is said to be based on early Supreme Court precedents, the Supreme Court has never validated or endorsed the doctrine, despite at least two clear opportunities to do so. The first opportunity was in *Aspen Skiing v. Aspen Highlands Skiing*,⁶ in which EFD was one of two lower-court monopolization theories that were

² 224 U.S. 383 (1912).

³ 326 U.S. 1 (1945).

⁴ 410 U.S. 366 (1973).

⁵ 570 F.2d 982 (D.C. Cir. 1977), *cert. denied*, 436 U.S. 956 (1978).

⁶ 472 U.S. 585 (1985).

brushed aside in a cursory footnote.⁷ Subsequently EFD was the target of a skeptical *dictum* by Justice Breyer in a Communications Act case, *AT&T Corp. v. Iowa Utilities Board*.⁸ These brief mentions of EFD provided a limited but nevertheless tangible indication that the Court would distance itself from the doctrine, especially given that Justice Stevens (who wrote for a unanimous Court—Justice White not participating—in *Aspen*) had, and Justice Breyer has, a strong background in antitrust. Moreover, both Justices were (and Justice Breyer remains) free of any reasonable suspicion of habitual favoritism to antitrust defendants, or more specifically, that they subscribe to any prodefense dogma regarding antitrust law and/or economics. Finally, in *Verizon Communications v. Trinko*,⁹ the Court cast significant doubt on the viability of EFD, based *inter alia* on the considerations identified by Justice Breyer in *Iowa Utilities Board*. As will be explained below, the early cases usually cited as the source of EFD would probably reach very different results if assessed using present-day antitrust standards. Thus, viewing the evolution of EFD in its overall context strongly reinforces the view—long advocated by leading scholars—that EFD should not be recognized as a theory of federal antitrust liability.

A. Terminal Railroad—and Terminal Railroad II, III and IV

Terminal Railroad arose from a comprehensive consolidation of entities that owned and operated facilities used to provide railroad transportation services in and around St. Louis, Missouri and East St. Louis, Illinois—cities that face each other from opposite banks of the Mississippi River.¹⁰ In the late 19th and early 20th centuries—the heyday of American railroading—two dozen railroads converged on this geographic area, making it a significant hub for both passenger and cargo transportation by rail. The main relevant

⁷ See *id.* at 600 n.26; see *id.* at 611 n.44.

⁸ 525 U.S. 366, 388, 428 (1999).

⁹ 540 U.S. 398, 410-11 (2004).

¹⁰ *United States v. Terminal R.R. Ass'n*, 224 U.S. 383, 391-92 (1912) (*Terminal Railroad*).

features of the St. Louis/East St. Louis railroad transportation complex were as follows: numerous independent railroad lines terminated on the Missouri (West) side of the river, and numerous others terminated on the Illinois (East) side.¹¹ Access by the railroads to the extensive track and terminal facilities in the area and to its many commercial and industrial sites (warehouses, factories, *etc.*) had generally been provided by independent terminal lines operating over the intricate local rail network. Finally, rail transport across the Mississippi River was available through three functionally distinct facilities: two railroad bridges and a railroad ferry.¹² (The closest alternative river crossings were more than 200 miles distant up- and down-river.) The Terminal Railroad Association, a consortium of railroads (critically, less than all of them) led by notorious Gilded-Age financier Jay Gould, managed to acquire control of all of these facilities—tracks, terminals and other assets used to provide services throughout the St. Louis/East St. Louis complex, including all three Mississippi River crossings.¹³

The conduct of the Association in disadvantaging non-member railroads by manipulating rates and imposing special charges led the Attorney General to file federal antitrust claims under Sections 1 and 2 (conspiracy to monopolize) of the Sherman Act. The complaint was initially dismissed by an equally divided four-judge Circuit Court (the court having original jurisdiction of the case, given the government's designation of the suit under the now-repealed Expediting Act¹⁴). On direct appeal under the Expediting Act, the Supreme Court upheld both government claims, holding that to combine all of

¹¹ *See id.* at 392-93.

¹² *See id.*

¹³ *See id.* at 391-92.

¹⁴ Prior to its repeal in 1984, the Expediting Act, 15 USCA 28, a procedural antitrust innovation successfully promoted by “trust-busting” President Theodore Roosevelt, allowed the Attorney General to designate any antitrust case brought by the US for hearing by a panel consisting of a minimum of three judges (chosen pursuant to a specified protocol from among judges of the circuit court and the district court having jurisdiction of the matter) rather than before a single district court judge, and to appeal the final judgment directly to the Supreme Court, thus eliminating one step in the typical federal appellate progression.

the terminal facilities of the area under the ownership of less-than-all of the railroads dependent on them was illegal given the imposition of discriminatory terms on non-member railroads.

The Court did not accept the government's proposal for a dissolution of the Association; rather, considering the "public advantages of a unified system,"¹⁵ the Court remanded for formulation of a decree that would "permit the proper and equal use [of the system] by nonproprietary companies, and abolishing the obnoxious practices in regard to transportation of merchandise."¹⁶ The Court itemized several requirements for an acceptable decree, and specifically warned that it would order dissolution of the Association should the parties fail to arrive at a decree that would "reorganize the contracts unifying the terminal facilities . . ."¹⁷ As matters evolved, however, it appears that no mutually agreeable decree was ever fully implemented. Moreover, despite three subsequent appeals following remand, the Court declined to dissolve the Association or to order any divestitures.

The Supreme Court's remedy involved two basic requirements for reformation of the Association's organic contractual arrangements, plus three prohibitions on specific competitive practices. The reformations required the Association (1) to offer any non-owner railroad the option to become an owner in the Association on terms equal to those of the present owners, and, (2) for railroads electing not to become owners, to allow use of the Association's facilities on "just and reasonable" terms so as to create "as nearly an equal plane as may be" for owner and non-owner railroads.¹⁸

¹⁵ *Terminal Railroad*, 224 U.S. at 390.

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ The full text of the remedial elements prescribed by the Supreme Court regarding ownership and use is as follows:

[First, b]y providing for the admission of any existing or future railroad to joint ownership and control of the combined terminal properties, upon such just and reasonable terms as shall place

In addition to reformation of the Association's basic arrangements for ownership and use, the Court prohibited three specific competitive practices by the Association: (1) exclusive dealing provisions governing the proprietary railroads, (2) "billing to East St. Louis, or other junction points, and then rebilling traffic destined to St. Louis or to points beyond," and (3) imposing any "charge for the use of the terminal facilities in respect of traffic originating within the so-called 100-mile area that is not equally and in like manner applied in respect of all other traffic of a like character originating outside of that area."¹⁹

The Supreme Court also included administrative and jurisdictional provisions. Any disputes regarding admission to ownership in or access to facilities of the Association would be subject to resolution by the district court, with any appeal to be treated as part of the same case (and therefore presumably subject to Supreme Court review).²⁰ There was also a clause preserving the exclusive jurisdiction of the Interstate

such applying company upon a plane of equality in respect of benefits and burdens with the present proprietary companies.

Second. Such plan of reorganization must also provide definitely for the use of the terminal facilities by any other railroad not electing to become a joint owner, upon such just and reasonable terms and regulations as will, in respect of use, character, and cost of service, place every such company upon as nearly an equal plane as may be with respect to expenses and charges as that occupied by the proprietary companies.

Id. at 411.

¹⁹ The full text is as follows:

Third. By eliminating from the present agreement between the terminal company and the proprietary companies any provision which restricts any such company to the use of the facilities of the terminal company.

Fourth. By providing for the complete abolition of the existing practice of billing to East St. Louis, or other junction points, and then rebilling traffic destined to St. Louis, or to points beyond.

Fifth. By providing for the abolition of any special or so-called arbitrary charge for the use of the terminal facilities in respect of traffic originating within the so-called 100-mile area that is not equally and in like manner applied in respect of all other traffic of a like character originating outside of that area.

Id. at 411-12.

²⁰ The full text is as follows:

Sixth. By providing that any disagreement between any company applying to become a joint owner or user, as herein provided for, and the terminal or proprietary companies, which shall arise after

Commerce Commission to regulate railroad rates and practices under the Interstate Commerce Act and related legislation.²¹

Finally, the Supreme Court specified the main elements of the divestiture that would be imposed if the parties failed to agree on decree terms meeting the Court's other requirements. Specifically, in that event the Court would require "complete disjoinder of the three systems [*i.e.*, the two bridges and the ferry], and their future operation as independent systems"²²

This mandate proved easier to state than to implement. The case returned to the Supreme Court on three separate occasions over the next twelve years, with the last occurring in 1924.²³ Although the behavioral remedies prescribed by the Court were

a final decree in this cause, may be submitted to the district court, upon a petition filed in this cause, subject to review by appeal in the usual manner.

Seventh. To avoid any possible misapprehension, the decree should also contain a provision that nothing therein shall be taken to affect in any wise or at any time the power of the Interstate Commerce Commission over the rates to be charged by the terminal company, or the mode of billing traffic passing over its lines, or the establishing of joint through rates or routes over its lines, or any other power conferred by law upon such Commission.

Id. at 412.

²¹ *Id.*

²² The full text is as follows:

Upon failure of the parties to come to an agreement which is in substantial accord with this opinion and decree, the court will, after hearing the parties upon a plan for the dissolution of the combination between the terminal company, the Wiggins Ferry Company, the Merchants' Bridge Company, and the several terminal companies related to the Ferry and Merchants' Bridge Company, make such order and decree for the complete disjoinder of the three systems, and their future operation as independent systems as may be necessary, enjoining the defendants, singly and collectively, from any exercise of control or dominion over either of the said terminal systems or their related constituent companies through lease, purchase, or stock control, and enjoining the defendants from voting any share in any of said companies or receiving dividends, directly or indirectly, or from any future combination of the said systems in evasion of such decree or any part thereof.

Id. at 412-13.

²³ Ex parte United States, 226 U.S. 420 (1913) (*Terminal Railroad II*); United States v. Terminal R. Ass'n, 236 U.S. 194 (1915) (*Terminal Railroad III*); Terminal R. Ass'n v. United States, 266 U.S. 17 (1924) (*Terminal Railroad IV*).

never fully implemented, no divestiture was ever ordered. A brief summary of this history follows: The second Supreme Court decision in the case resulted from some procedural quirks unique to that time, as summarized in the footnote.²⁴ Once the case was back on track before a lower-court panel appointed under the Expediting Act, the government and the defendants disagreed over several key issues regarding implementation of the mandate. As relevant to whether *Terminal Railroad* serves as a precedent for EFD, the government argued for an explicit prohibition on the Association's ability to levy a transportation charge known as an "arbitrary" (referred to in item five of the Court's decree requirements), imposed on traffic originating within 100 miles of the Association's facilities but destined for delivery outside that area.²⁵ The final decree entered by the lower-court panel rejected this government request.²⁶

This led to the third direct appeal to the Court, *Terminal Railroad III*.²⁷ The government tried to leverage the disagreement with defendants over implementation of the mandate, insisting that the dispute over the prohibition of "arbitraries" (among other issues) triggered the Supreme Courts' dissolution option. The Court, however, dismissed this as a hyper technical reading of the mandate and thus did not consider any divestiture.²⁸ As to the requested prohibition on "arbitraries," the Court showed no

²⁴ It happened that the federal Circuit Courts had been abolished while *Terminal Railroad* was first pending in the Supreme Court. (The Circuit Courts were succeeded by the appellate bodies now known as the U.S. Courts of Appeals for the various geographically-designated circuits, currently numbering twelve.) The case was remanded to the Eastern District of Missouri where it had first been filed, and assigned to a district court judge. But the government insisted that since the case had been designated as a proceeding subject to the Expediting Act (not directly affected by the legislation abolishing the Circuit Courts), it must continue as such, requiring appointment of a (minimum) three-judge panel for the proceedings on remand. The district court did not adopt the government's view on this issue, but left the government to petition the Supreme Court for a writ of prohibition, requiring appointment of a panel pursuant to the Expediting Act. This writ was granted in *Terminal Railroad II*, 226 U.S. at 420.

²⁵ See *Terminal Railroad I*, 224 U.S. at 411-12.

²⁶ See *Terminal Railroad II*, 226 U.S. at 425.

²⁷ *Terminal Railroad III*, 236 U.S. at 194.

²⁸ See *id.* at 207-09.

hesitation in concluding that the government’s proposal was the type of interference with Interstate Commerce Commission regulation that had been anticipated and prohibited in the original mandate (in item seven).²⁹

The Court’s unhesitating dismissal of a proposed decree provision binding the Association to a particular course of action with regard to transportation rates (the so-called arbitraries) seems inconsistent with item five of the mandate. The government’s proposal for limitations on the Association’s rates was rejected as “plainly repugnant to the provisions of the [Interstate Commerce] Act, and contrary to the exercise by the state authorities of their power over charges of the terminal company”³⁰ This ruling has had its own durable influence on antitrust jurisprudence, specifically with respect to the standard for implied antitrust immunity for the conduct of regulated firms. Henceforward, the test for implied immunity has been whether application of an antitrust standard would be “plainly repugnant” to the operation of a regulatory scheme enacted by Congress—a standard that still governs.³¹ Thus, while the Court has refused any recognition of EFD (as explained later), the “plain repugnancy” test for implied antitrust immunity endures.

The case reached the Supreme Court for the fourth and final time in a dispute between different groups of “proprietary” lines, with one group alleging that the other lines, “through the domination and control of the board of directors of defendant the Terminal Railroad Association of St. Louis and its subsidiaries” had been forcing the complainants to pay certain charges that the latter did not themselves pay for the same services.³² The complaining lines charged that this was in contempt of the decree entered

²⁹ *Id.*

³⁰ *Id.* at 207.

³¹ *Credit Suisse Securities v. Billing*, 551 U.S. 264 (2007). For a broader discussion of both *Credit Suisse* and the plain repugnancy standard, see Bruce H. Kobayashi & Joshua D. Wright, *Antitrust and Ex-Ante Sector Regulation*, in *THE GAI REPORT ON THE DIGITAL ECONOMY* (2020).

³² *Terminal Railroad IV*, 266 U.S. at 28.

following remand from *Terminal Railroad III*.³³ The lower court appointed an examiner to review the impugned conduct, and that review essentially confirmed the allegation.³⁴ On the fourth direct appeal to the Court, however, the order embodying the examiner's finding and requiring the offending railroads to make good on the missed payments was rejected.³⁵ The main point of interest in the Court's reasoning is its repeated emphasis on the sanctity of the ICC's exclusive regulatory authority: "In the exercise of its powers under existing law, the [Interstate Commerce] Commission is untrammelled by the decree, and may make and regulate rates on through freight and the divisions thereof."³⁶ Again, and for the final time (so far as research discloses), the Court was clear in its determination to prevent any aspect of the decree from interfering with the ICC's authority to regulate railroad rates and other terms of service.³⁷ This was to remain a matter for the ICC (and state regulators), not the courts.

B. Associated Press

The second case cited in the EFD lineage is *Associated Press v. United States*.³⁸ Associated Press (AP), with a membership of more than 1,200 newspaper publishers at the time of the case, had been formed (beginning in 1846 with a cost-sharing arrangement among five New York City newspapers) to provide a network for the collection and dissemination of news throughout the US and worldwide.³⁹ Access to this network enabled member newspapers to provide news about events in other locations. (It is important to recall that prior to the advent of inexpensive long-distance data

³³ *Id.* at 26.

³⁴ *Id.*

³⁵ *See id.* at 26-27.

³⁶ *Id.* at 31.

³⁷ *See id.* at 30-31

³⁸ 326 U.S. 1 (1945).

³⁹ *See id.* at 3-4.

communication post-World War II, the newspaper business was a local business, given the technologies available for the production and transportation of newspapers in mass quantities. It would have been prohibitively expensive for a newspaper in one locality to provide regular coverage of news arising in many distant places.) AP prohibited members from supplying news reports to non-members, and allowed each member a *de facto* veto of any application for membership by any competing newspaper (*i.e.*, a newspaper serving the same locality).⁴⁰ When the government challenged these practices under Sections 1 and 2 (conspiracy to monopolize), a panel of judges appointed pursuant to the Expediting Act granted it summary judgment in a split decision.⁴¹ On direct appeal the Supreme Court affirmed 5-3. The various opinions in *Associated Press*—both the lower court and the Supreme Court -- offer meandering and to some extent conflicting assessments of the issues and rationale.

An especially consequential point is that the panel granted a summary judgment for the government—finding liability without trial.⁴² The competitive position of AP was a disputed issue, so the panel could not assume that AP possessed monopoly power. Moreover, given the procedural posture, the court lacked any basis to conclude that AP members possessed a competitive advantage over local rivals who did not have access to AP news stories due to the exclusivity requirement and membership-veto provision. The lower court nevertheless seemed to assume that by virtue of AP's greater size and scope relative to other similar news services (of which there were many—the larger of which included United Press and International News Service) and the tendency of many

⁴⁰ See *id.* at 4.

⁴¹ The trial-court decision was rendered by a panel consisting of three judges drawn from the Second Circuit Court of Appeals, including Judge Learned Hand, his cousin Augustus Hand, and Thomas Swan. This is the same panel that rendered the historic Section 2 decision in *United States v. Aluminum Co. of America*, 148 F.2d 416 (2d Cir. 1945) (*Alcoa*), which served as the final decision due to lack of a quorum in the Supreme Court in that matter. Judge Learned Hand wrote both *Associated Press* and *Alcoa*, with Swan dissenting in *Associated Press*.

⁴² *United States v. Associated Press*, 52 F. Supp. 362, 357 (S.D.N.Y. 1943).

successful newspapers to be AP members, the effect of the AP's arrangements was to create at least some competitive advantage for its members in comparison to non-members.⁴³ Seizing on the First Amendment role of the newspaper industry, Learned Hand's majority opinion reasoned that it was especially important to apply a strict Sherman Act standard to such organizations. The lower court therefore decreed that henceforward AP was forbidden to base admission decisions on whether the applicant competed with any existing member.⁴⁴ By holding that an agreement creating a competitive advantage for its participants relative to non-participants would automatically be unlawful under the Sherman Act—absent any showing of monopoly power, regardless of any business rationale, and without any demonstration that AP membership was necessary for successful competition by individual publishers or by groups of publishers forming their own news-agency arrangements—the district court strongly suggested that it was imposing a kind of public utility obligation on AP.

Judge Swan dissented, based on considerations that would be in reasonable accord with present-day antitrust analysis of competitor collaborations.⁴⁵ He pointed out that there is nothing suspect in an agreement between newspapers to exchange news reports on an exclusive basis, and that any purported effect of the AP restrictions was disproven (or at least remained subject to dispute at the summary judgment stage) as to news-gathering services by the durable and continuing prosperity of competing press syndicates United Press, International News Service, and a variety of other similar organizations, and as to newspapers by the fact that no newspaper was ever known to have failed due to denial of AP membership.⁴⁶ Judge Swan also emphasized that on the summary judgment record there could be no reliance on the notion that AP (or its

⁴³ *See id.* at 337.

⁴⁴ *Id.* at 375.

⁴⁵ *See id.* at 375-77 (Swan, J., dissenting).

⁴⁶ *Id.* at 375.

members) held monopoly power or any particular advantage over competitors.⁴⁷ Finally, in Judge Swan's view the panel majority had relied improperly on the notion that AP should be regarded as a public utility—a determination that should in any event be left to legislatures rather than courts.⁴⁸ Reviewing analogous public utility cases involving railroads, stock exchanges, cotton warehouses, and stockyards, Judge Swan found support in a dissent by Justice Brandeis in an earlier case involving AP itself, warning of the dangers of judicial encroachment into the field of public utility regulation:

Courts are ill-equipped to make the investigations which should precede a determination of the limitations which should be set upon any property right in news or of the circumstances under which news gathered by a private agency should be deemed affected with a public interest. Courts would be powerless to prescribe the detailed regulations essential to full enjoyment of the rights conferred or to introduce the machinery required for enforcement of such regulations.⁴⁹

Thus, Judge Swan, following Justice Brandeis, relied on key distinctions between the institutional capacities of legislatures and regulatory agencies on the one hand versus courts and antitrust law on the other. As discussed further *infra*, these distinctions were critical to the Supreme Court's inclination to undercut EFD when it finally considered the matter more than a half-century later.

The key points of tension in the panel split were reflected in the Supreme Court decision to affirm, by a 5-3 vote (Justice Jackson not participating).⁵⁰ For the Court, Justice Black seemed to endorse the lower-court panel majority's approach, holding that AP must be required to admit any applicant without regard to its competitor status—essentially the “public utility” approach.⁵¹ Justice Douglas, in a separate concurrence,

⁴⁷ *Id.* at 377.

⁴⁸ *Id.*

⁴⁹ *Int'l News Serv. v. Associated Press*, 248 U.S. 215, 267 (1918) (Brandeis, J., dissenting).

⁵⁰ *Associated Press v. United States*, 326 U.S. 1 (1945).

⁵¹ *Id.* at 19.

denied that any form of utility regulation was involved,⁵² but an additional concurrence by Justice Frankfurter seemed to state precisely the opposite, focusing on the protected First Amendment status of newspaper publishers as a particular justification for obligating AP to treat all applicants without regard to their status as competitors of other AP members.⁵³ Dissents by Justice Roberts (joined by Chief Justice Stone) and Justice Murphy generally followed the themes of the Swan dissent to the lower-court panel decision.⁵⁴

C. Otter Tail

The last of the Supreme Court cases in the EFD lineage is *Otter Tail Power Co. v. United States*.⁵⁵ *Otter Tail* marks a distinct departure from both *Terminal Railroad* and *Associated Press*. The opinions do not cite *Terminal Railroad*, and Justice Douglas' majority opinion (a 4-3 vote, Justices Blackmun and Powell not participating) cites *Associated Press* only in support of the innocuous contention that efforts to protect or extend a monopoly may be illegal even when the defendant "had not yet achieved a complete monopoly."⁵⁶ In the earlier cases defendants were associations controlling a resource of competitive significance (asserted but indeterminate competitive significance, in *Associated Press*) to their members and their members' competitors—in one case (*Terminal Railroad*) rail facilities essential to competition in identifiable markets (railroad transportation in and through the St. Louis/East St. Louis complex) and in the other (*Associated Press*) a news exchange among newspapers published in distinct localities throughout the US and around the world. By contrast, *Otter Tail* involved only unilateral conduct by a single

⁵² *Id.* at 24-25.

⁵³ *Id.* at 28.

⁵⁴ *See id.* at 30 (Roberts, J. dissenting); *See id.* at 50 (Murphy, J. dissenting).

⁵⁵ 410 U.S. 366 (1973).

⁵⁶ *Id.* at 378 (citing *Associated Press v. United States*, 326 U.S. 1,13 (1945)).

defendant, Otter Tail Power Co. (OTP), a public utility engaged in generating and transmitting wholesale electrical energy within a substantial contiguous territory in the upper Midwest.⁵⁷ OTP also operated a number of retail power distribution systems pursuant to franchises granted by numerous individual localities within OTP's wholesale service area.⁵⁸

The impugned conduct mainly involved OTP's efforts to prevent four such municipalities from distributing their own local retail power—an opportunity that arose as OTP's local franchise expired for each town. Two of these had access to power from other sources, and were faced with aggressive litigation efforts by OTP to prevent initiation of their own retail distribution service.⁵⁹ The other two were more geographically isolated within OTP's wholesale distribution network, and had to rely either upon sales of power to them by OTP, or on OTP's willingness to “wheel” power from other available sources over OTP's distribution lines to a point of connection to their local systems.⁶⁰ OTP refused all such requests—either to sell power at wholesale, or to wheel power from other sources to a point of connection to the towns. Aside from OTP's litigation tactics, the case therefore presented as a refusal to deal monopolization claim. Relying on other cases in that line, the Court affirmed (with one exception involving the *Noerr-Pennington* doctrine) the district court judgment finding OTP liable for monopolization, and ordering it to provide or to wheel power to municipalities subject to rates, terms, and conditions to be approved by the Federal Power Commission (the federal agency with jurisdiction over the electric power industry, including OTP, at the time).⁶¹ As things worked out OTP eventually recaptured the local franchises in three of

⁵⁷ *See id.* at 368.

⁵⁸ *See id.* at 368-69.

⁵⁹ *Id.*

⁶⁰ *Id.* at 369.

⁶¹ *See id.* at 381-82.

the four towns in dispute, while one managed to construct its own generating facility and to obtain orders from the FPC for a permanent connection to the OTP grid.

The Court's mandate for a compelled course of dealing to be regulated by the FPC elicited a dissent from Justice Stewart, joined by Chief Justice Burger and Justice Rehnquist, pointing out that in fashioning the Federal Power Act Congress had specifically rejected proposals to authorize the FPC to require electric utilities to act as common carriers obligated to supply power on request, or to order the wheeling of electric power as the Court's mandate required.⁶² The policy concern underlying that legislative choice was that the imposition of such service and interconnection mandates on regulated utilities could jeopardize their financial soundness—a critical consideration in utility regulation in light of the substantial long-term financial obligations required to build and operate facilities that generate and distribute power, as well as the critical importance of affordable power to so many activities in our society.⁶³ Thus, it seemed that the majority had ordered precisely what Congress had intentionally refused to authorize—creating an apparent direct conflict with the relevant federal regulatory legislation. The dissent also emphasized the fact—obvious in the circumstances of the case—that the retail supply of electric power would be a monopoly regardless whether OTP or the affected municipality would be the supplier. It was therefore unclear what antitrust interest was ultimately at stake in the dispute.

II. EFD'S FOUNDATIONAL CASES AS SEEN THROUGH A POST-SYLVANIA LENS

Taking these three cases together, it is difficult to perceive any consistent theme. *Otter Tail* involved single-firm conduct and two vertically related markets, each destined to be served by a regulated monopolist; viewed in terms of its ultimate competitive impact, the case at most involved a squabble regarding the identity of the monopolist that

⁶² See *id.* at 383-85 (Stewart, J., dissenting).

⁶³ See *id.* at 392.

would occupy the downstream retail power distribution level (*i.e.*, either OTP or the local municipality).⁶⁴ By contrast, central to *Terminal Railroad* is the key (but unanswered) question whether the numerous and diverse facilities acquired and controlled by the Association should have been reestablished as a competitive sector or whether operation of such facilities by a single consolidated entity (subject to some form of shared ownership and access regulation as contemplated by the Court) was likely to be more productive—given that there already existed a comprehensive regulatory scheme administered by a powerful agency, governing the rates, terms and conditions on which the Association’s various services were offered.⁶⁵ And *Associated Press*—a limited cooperative arrangement (with obvious significant procompetitive benefits) among publications serving distinct, geographically separated markets—very likely did not involve any monopoly at all.⁶⁶

Aside from the broad diversity in the nature of the business sectors and the conduct involved in these cases, another key difficulty in relying on them for the derivation of a coherent EFD lies in the fact that all three occurred before—and therefore do not reflect—numerous important and valuable refinements of federal antitrust law. Most importantly, the Supreme Court’s approach to antitrust shifted materially beginning in the mid-1970’s. As explained briefly below, soon after *Otter Tail* the Court shifted away from antitrust rules based on legal formalism and toward rules informed by sound economic analysis.⁶⁷ *Otter Tail* came at the peak of a quarter-century-long trend expanding the use of *per se* rules in federal antitrust interpretation and enforcement. *Per se* rules deprive antitrust defendants of the ability to present any substantive arguments

⁶⁴ *Otter Tail Power Co. v. United States*, 410 U.S. 366 (1973).

⁶⁵ *United States v. Terminal R.R. Ass’n*, 224 U.S. 383 (1912).

⁶⁶ *Associated Press v. United States*, 326 U.S. 1 (1945).

⁶⁷ See, *e.g.*, *United States v. General Dynamics Corp.*, 415 U.S. 486 (1974); *Continental T.V., Inc. v. GTE Sylvania, Inc.*, 433 U.S. 36 (1977).

in defense of their conduct (lack of market power, lack of anticompetitive effect, procompetitive business justifications and effects, *etc.*) or any opportunity to explain their conduct in terms of economic analysis. *Associated Press* was arguably one of the first major antitrust decisions in this *per se* trend. As explained below, *Terminal Railroad* was decided at a time when the Supreme Court was just settling the most basic elements of antitrust interpretation, while *Associated Press* and *Otter Tail* stand at the endpoints of a relatively brief but intense later period in which antitrust interpretation became increasingly intolerant of economic reasoning. To boil down the meaning of these cases, it is helpful to review each against the background of these broader developments, and to ask how each might have been resolved applying more sophisticated and economically attuned methods of analysis that have since been championed by the Court, the antitrust enforcement agencies, and scholars over the forty-six years since the end of the *per se* craze.

As briefly mentioned above, only the most basic pattern for assessment of competitive practices under the Sherman Act had been set by several early Supreme Court cases. The earliest form of the *per se* rule as applied in *United States v. Trans-Missouri Freight Ass'n*,⁶⁸ and *United States v. Joint Traffic Association*,⁶⁹ had been limited to naked cartel conduct by *Addyston Pipe & Steel Co. v. United States*.⁷⁰ Although *per se* treatment was also extended to vertical price agreements in *Dr. Miles Medical Co. v. John D. Park & Sons Co.*,⁷¹ the *per se* approach made little additional headway until the 1940's. *Standard Oil Co. v. United States*,⁷² and *United States v. American Tobacco Co.*,⁷³ established that other

⁶⁸ 166 U.S. 290 (1897).

⁶⁹ 171 U.S. 505 (1898).

⁷⁰ 175 U.S. 211 (1899).

⁷¹ 220 U.S. 373 (1911).

⁷² 221 U.S. 1 (1911).

⁷³ 221 U.S. 106 (1911).

claims would be assessed under the rule of reason, allowing defendants to defend or justify their conduct according to the particular facts and circumstances of the case. The classic statement of the rule of reason is usually taken from *Chicago Board of Trade v. United States*.⁷⁴ Later cases discussed below have significantly refined the rule and explained how it is best applied to specific categories of conduct, including those at issue in *Terminal Railroad* and *Associated Press*. Notably, while the *per se* rule is still applied to practices found by repeated judicial assessment to be anticompetitive except in rare instances, more recent cases have used rebuttable presumptions and burden-shifting to streamline the search for sound evaluation of the ultimate competitive effects of conduct (other than conduct subject to *per se* condemnation).

Whatever one could say about AP, it could not by any stretch be regarded as a naked cartel, which would have qualified it for *per se* treatment. The arrangement was not limited to the fixing of prices or other terms of trade, to division of markets, or similar conduct eliminating competition without any plausible procompetitive contribution; rather, AP established an exclusive network for the exchange of news reports among publications serving geographically distinct areas. The arrangement allowed expanded national and global news coverage through cooperation of newspapers serving widely separated areas and therefore incapable of providing comprehensive news coverage on their own.⁷⁵ Thus, it had powerful indications of competitive merit. Moreover, the concessions made in the district court opinion included; (1) that there were many collective news services similar to the AP, (2) that several of these other services (United Press, International News Service) had significant scope and membership, (3) that many

⁷⁴ 246 U.S. 231 (1918).

⁷⁵ To appreciate this, it is essential to picture the information sector as it existed in the first half of the 20th Century, when there was no widespread access to means of long-distance communication other than telephone and telegraph. Such access as existed was relatively expensive and/or required costly resources such as specialized equipment and trained personnel.

newspapers participated in several such services simultaneously, and (4) that a number of significant and successful newspapers were not members of AP.⁷⁶ Nevertheless, the district court awarded summary judgment to the government.

From our contemporary viewpoint it seems astonishing that the restrictions adopted by AP would have been condemned without trial. As explained below, in a series of decisions beginning with *Broadcast Music, Inc. v. CBS, Inc.*,⁷⁷ application of the *per se* rule to collective conduct undertaken by associations like AP has been reserved for naked cartel restraints. This illustrates the profoundly different perspective that seemed to take hold in the antitrust enforcement community and the federal courts at about the time *Associated Press* was decided. Premonitions of a new and more aggressive approach could be found in two major antitrust cases brought just prior to *Associated Press*: *United States v. Aluminum Co. of America*,⁷⁸ (ultimately decided by the same panel as the lower court decision in *Associated Press*, also in 1945) and *United States v. Socony-Vacuum Oil Co.*⁷⁹ Both cases represented a surge in antitrust enforcement bravado championed by the FDR Administration, largely at the urging of then AAG for Antitrust Robert Jackson (later successively appointed Solicitor General, Attorney General, and then Associate Justice of the Supreme Court by FDR) following the Supreme Court's rejection of FDR's government-sponsored cartelization policy embodied in the National Industrial Recovery Act in *Schechter Poultry Corp. v. United States*.⁸⁰ Both antitrust cases were initiated by Jackson during his brief tenure as AAG for Antitrust and pursued to conclusion by his enthusiastic successor in the Antitrust Division, Thurman Arnold, a

⁷⁶ *United States v. Associated Press*, 52 F. Supp. 362 (S.D.N.Y. 1943).

⁷⁷ 441 U.S. 1 (1979).

⁷⁸ 148 F.2d 416 (2d Cir. 1945).

⁷⁹ 310 U.S. 150 (1940).

⁸⁰ 295 U.S. 495 (1935).

former antitrust skeptic who displayed zeal characteristic of the recent convert when he became the Administration's chief antitrust prosecutor in 1938.

Alcoa established a presumption that a monopolist is guilty of monopolization, shifting the burden of proof to the defendant to show that its monopoly power had been "thrust upon" it.⁸¹ *Alcoa* paid lip service to the notion that "the successful competitor, having been urged to compete, must not be turned upon when he wins."⁸² Contrary to the spirit of that famous epithet, however, *Alcoa* imposed liability on the defendant—indeed, mandated that the firm be broken up, as in the landmark 1911 Standard Oil case—based *inter alia* on *Alcoa's* habit of expanding capacity to meet demand. Similarly, *Socony-Vacuum*, while outwardly a conventional application of the *per se* rule to a straightforward example of horizontal output allocation and price fixing, provided a very expansive statement of the price-fixing rule. A famous footnote in the Court's opinion (footnote 59) suggested that any agreement that might "tamper" with prices must be condemned out of hand even absent monopoly power or the capacity to influence market prices.⁸³ In so stating, the Court suggested that a joint venture must avoid any arrangement that could affect prices, regardless of market position, competitive effect, or procompetitive business rationale. As matters evolved, the Court actually went farther than that—holding first in *United States v. Sealy, Inc.*,⁸⁴ that any price restriction adopted by a joint venture was *per se* illegal, and then in *United States v. Topco Assocs., Inc.*,⁸⁵ that even non-price (territorial) restrictions adopted by a joint venture are *per se* illegal.

Beginning about the time of *Associated Press*, various extensions of the *per se* rule followed regularly for the next quarter century, resulting in an almost-total displacement

⁸¹ *United States v. Aluminum Co. of America*, 148 F.2d 416 (2d Cir. 1945).

⁸² *Id.* at 430.

⁸³ *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150, 224 n.59 (1940).

⁸⁴ 388 U.S. 350 (1967).

⁸⁵ 405 U.S. 596 (1972).

of the rule of reason from antitrust analysis. In 1947 patent tie-ins were moved to the *per se* category,⁸⁶ and a long list of other patent licensing practices followed during the next quarter-century, encouraged by the federal enforcement agencies. Although the Court once hesitated to subject non-price vertical restraints to the *per se* rule,⁸⁷ it soon lost its inhibitions in that regard, condemning all vertical restraints *per se* based on the early vertical price-fixing precedent *Dr. Miles Medical Co. v. John D. Park & Sons Co.*,⁸⁸ and the ancient rule prohibiting restraints on alienation of chattels. Defendants were thus precluded from appealing to economic reasoning or relying on any substantive defense with regard to vertical restraints.⁸⁹

In the same vein, a rigid structural presumption against horizontal mergers was adopted in *United States v. Philadelphia National Bank*,⁹⁰ and applied even to mergers involving entities of no competitive significance in *United States v. Von's Grocery Co.*,⁹¹ and later cases—establishing a virtual *per se* rule against mergers. *Alcoa* became the rule where monopolization was concerned, placing the burden of proof upon monopolists to show that their success had been “thrust upon”⁹² them, even if their conduct had been “honestly industrial”⁹³ and not otherwise wrongful. Arguably the high-water mark of the *per se* trend was reached in *United States v. Topco Assocs., Inc.*,⁹⁴ a then-recent case cited by the majority in *Otter Tail*.⁹⁵ In *Topco* the Court not only disregarded economic justifications

⁸⁶ *International Salt Co., Inc. v. United States*, 332 U.S. 392 (1947).

⁸⁷ *White Motor Co. v. United States*, 372 U.S. 253 (1963).

⁸⁸ 220 U.S. 373 (1911).

⁸⁹ *United States v. Arnold, Schwinn & Co.*, 388 U.S. 365 (1967).

⁹⁰ 374 U.S. 321 (1963).

⁹¹ 384 U.S. 270 (1966).

⁹² *Id.* at 429.

⁹³ *Id.* at 431.

⁹⁴ 405 U.S. 596 (1972).

⁹⁵ *Otter Tail Power Co. v. United States*, 410 U.S. 366, 378 (1973).

for the particular arrangement (a joint venture among independent grocery stores to establish their own private-label brand to respond competitively to those offered by the large national chain stores such as A&P), but the opinion openly mocked the idea of relying on economic analysis in assessing the legality of even non-price restrictions (territorial restrictions) in a joint venture agreement.⁹⁶

Fortunately, the Court began to turn away from this brutalist approach to competition analysis almost immediately after *Otter Tail*. The intensifying reliance on *per se* rules and heavy presumptions of liability from about 1945 until the 1972 decision in *Topco* attracted broad criticism from respected scholars of antitrust law and economics. Worsening economic conditions in the U.S. during the early 1970's—a period of high inflation, low growth, and loss of U.S. competitiveness in key economic sectors such as automobiles and consumer electronic products—created an environment in which a broad range of U.S. economic and regulatory policies (including antitrust) were subject to focused reexamination. In *United States v. General Dynamics Corp.*,⁹⁷ decided in the term following *Otter Tail*, the Court began to display sensitivity to the need for antitrust rules to reflect sound economic analysis. The Court accepted economic arguments to overcome the rigid structural presumptions established by its merger cases from the 1960's. The government had challenged a merger in the coal industry, relying on recent production data in calculating market shares for purposes of measuring concentration and claiming the presumption of illegality.⁹⁸ The Court noted, however, that in the particular sector involved—supply of coal to electricity generation facilities—available uncommitted reserves rather than recent production were far more meaningful in weighing the competitive significance of particular firms.⁹⁹ (Since coal purchasers were electric-power

⁹⁶ See *United States v. Topco Assocs.*, 405 U.S. 596, 609-10 (1972).

⁹⁷ 415 U.S. 486 (1974).

⁹⁸ *Id.* at 493-96.

⁹⁹ *Id.* at 502.

utilities requiring very long-term commitments from their fuel suppliers, a coal supplier lacking uncommitted reserves was incapable of competing, regardless of past and present rates of output.) Then the situation was clarified and a powerful new approach established with *Continental T.V., Inc. v. GTE Sylvania, Inc.*,¹⁰⁰ a case involving run-of-mill vertical territorial restrictions on the distribution of consumer electronic products. *Sylvania* overruled *Schwinn*, removing non-price vertical restraints from the *per se* category.¹⁰¹ Eventually, virtually all vertical restraints (including price limitations) were restored to rule-of-reason status.¹⁰² More fundamentally, the case turned *Topco* around 180 degrees on the question of using economic analysis to assess competitive effects. Whereas *Topco* had exalted the need for legal certainty and mocked the use of economics in antitrust analysis, *Sylvania* observed that “an antitrust policy divorced from market considerations would lack any objective benchmarks.”¹⁰³ *Sylvania* decisively rejected strict legal formalism as a basis for assessment of competitive effect.

Otter Tail missed the transition that ended this antitrust prosecutor’s/plaintiffs’ utopia by a whisker: It may be the last Supreme Court case to base antitrust liability on a monopolist’s use of sharp business tactics without any persuasive demonstration that such conduct would or could result in a material anticompetitive effect. The author of the four-Justice majority in *Otter Tail*, Justice Douglas, was a committed New Deal Democrat, well-connected at the highest levels of FDR’s Administration. He had been heavily promoted by FDR “brain trust” member Justice Louis Brandeis as his successor on the Court when Brandeis retired in 1939. As a Justice, Douglas was generally an enthusiastic supporter of the *per se* trend. He authored the majority opinion in *Socony-Vacuum*. The

¹⁰⁰ 433 U.S. 36 (1977).

¹⁰¹ *Cont’l T.V. v. GTE Sylvania*, 433 U.S. 36, 59 (1977) (overruling *United States v. Arnold, Schwinn & Co.*, 388 U.S. 365 (1967)).

¹⁰² See generally, *State Oil Co. v. Khan*, 522 U.S. 3 (1997)(maximum vertical price agreements); *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007)(minimum vertical price agreements).

¹⁰³ *Sylvania*, 433 U.S. at 53 n.21.

same year he decided *Otter Tail*, he wrote (in a concurrence) one of the most expansive interpretations of antitrust policy and the nature of merger control in the history of antitrust, and aligned himself with the Brandeis view that the antitrust laws should be construed to protect local control of business even if that approach requires economic sacrifice.¹⁰⁴ However, in a notable albeit limited departure he authored the Court's *White Motor* opinion,¹⁰⁵ declining an opportunity to place all non-price vertical restraints into the *per se* category—a step the Court took, with Douglas' support, a few years later in *Schwinn*.¹⁰⁶

It is therefore unsurprising that Justice Douglas' majority opinion in *Otter Tail* shows little regard for careful analysis of tangible competitive effects, based on balanced evaluation of diverse economic understandings offered by the parties. It had been characteristic for some time for the relevant markets involved in *Otter Tail*—wholesale and retail distribution of electricity—to be subject to public utility-style regulation at both

¹⁰⁴ Excerpt is as follows:

By reason of the antitrust laws, efficiency in terms of the accounting of dollar costs and profits is not the measure of the public interest, nor is growth in size where no substantial competition is curtailed. The antitrust laws look with suspicion on the acquisition of local business units by out-of-state companies. For then local employment is apt to suffer, local payrolls are likely to drop off, and responsible entrepreneurs in counties and States are replaced by clerks.

A case in point is Goldendale in my State of Washington. It was a thriving community -- an ideal place to raise a family -- until the company that owned the sawmill was bought by an out-of-state giant. In a year or so, auditors in faraway New York City, who never knew the glories of Goldendale, decided to close the local mill and truck all the logs to Yakima. Goldendale became greatly crippled. It is Exhibit A to the Brandeis concern, which became part of the Clayton Act concern, with the effects that the impact of monopoly often has on a community, as contrasted with the beneficent effect of competition.

A nation of clerks is anathema to the American antitrust dream. So is the spawning of federal regulatory agencies to police the mounting economic power. For the path of those who want the concentration of power to develop unhindered leads predictably to socialism that is antagonistic to our system.

United States v. Falstaff Brewing Corp., 410 U.S. 526, 543 (1973).

¹⁰⁵ *White Motor Co. v. United States*, 372 U.S. 253 (1963).

¹⁰⁶ *Schwinn*, 388 U.S. at 365.

the federal (wholesale) and state (retail) level. Under no foreseeable conditions could competition occur between OTP and the local municipal utilities involved. Power was provided locally by a single franchisee in each case—only the identity of the monopolist was at stake.

Following identification of EFD in *Hecht*, private litigants showed exceptional creativity in finding “essential facilities” to which they could claim access through litigation. Numerous cases considered and sometimes applied the EFD in a broad variety of circumstances following *Hecht*. Despite a great deal of lower-court activity involving EFD, specific claims involving the doctrine managed to avoid Supreme Court review until an unusual matter arose due to a competitive stand-off between the two leading ski resorts in Aspen, Colorado. There were four popular skiing mountains in the Aspen area, three controlled by Aspen Skiing Co. and one by Aspen Highlands Skiing Co.¹⁰⁷ For some period of years, the two companies cooperated in providing an all-Aspen pass, allowing skiers the convenience of obtaining access to the full range of ski slopes in Aspen through a single transaction.¹⁰⁸ Revenues from sales of the all-Aspen pass were allocated based on random-sample surveys of the number of skiers using each mountain.¹⁰⁹ For the 1977-1978 ski season, however, Aspen Skiing conditioned its participation in the all-Aspen pass on Aspen Highlands’ agreement to accept a fixed percentage of revenues—a percentage falling below Aspen Highlands’ average historical share of revenue.¹¹⁰ The following season Aspen Highlands refused to accept a fixed and below-average percentage revenue allocation, and Aspen Skiing discontinued sale and acceptance of the

¹⁰⁷ Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 587 (1985).

¹⁰⁸ *Id.* at 589-90.

¹⁰⁹ *Id.* at 592.

¹¹⁰ *See id.*

all-Aspen pass.¹¹¹ Aspen Skiing shifted to a three-mountain pass honored at its own facilities only.¹¹²

Aspen Skiing went farther than mere termination of the previous joint all-Aspen pass arrangement—notably, it refused to sell its three-mountain pass to Aspen Highlands even when the latter offered to pay full retail price in cash. This prevented Aspen Highlands from offering its own customers the opportunity to obtain an all-Aspen experience without the inconvenience of entering into separate transactions with each company. Aspen Highlands challenged Aspen Skiing’s conduct as unlawful monopolization and obtained a favorable verdict.¹¹³ The jury had been instructed on a number of monopolization theories, including EFD. The 10th Circuit affirmed.¹¹⁴ On *cert.* Justice Stevens, writing for a unanimous Court (Justice White not participating), upheld the verdict.¹¹⁵

An initial problem in understanding *Aspen* is the petitioner’s tactical concession on appeal that it possessed monopoly power in the relevant market. Given the numerous other ski facilities in Colorado, other Rocky Mountain states, and other destinations around North America, this provides a somewhat unrealistic framework for analysis of the competitive situation. One must ignore serious doubts about the idea that any single local ski area could be a monopoly in order to look at whether Aspen Skiing was in possession of an “essential facility,” or whether its conduct was unreasonably exclusionary.

¹¹¹ *See id.* at 594.

¹¹² *Id.*

¹¹³ *Id.* at 596.

¹¹⁴ *Id.* at 599.

¹¹⁵ *Id.* at 611.

A classic antitrust analysis of a monopolist's refusal to trade with customers that patronize a competitor is provided by *Lorain Journal Co. v. United States*,¹¹⁶ involving a dominant local daily newspaper's refusal to sell advertising to customers if they also placed advertising with a local media upstart, a fledgling radio station. There is no plausible economic or technical rationale for such a refusal to deal, other than squelching the obvious competitive risk to the incumbent's business. Since that is an anticompetitive rationale, the Court had little trouble finding liability under Section 2. The key conduct in *Aspen*—especially *Aspen Skiing's* refusal to sell its own tickets to *Aspen Highlands* at their full retail price in exchange for cash—reads directly on *Lorain Journal*. Given these questions about the vitality of the decision, the Court subsequently described *Aspen*—to the extent it is construed as requiring a monopolist to engage in a course of dealings with a competitor—as lying “at or near the outer boundary of § 2 liability.”¹¹⁷ But the Court in *Aspen* engaged in no extended analysis of EFD. Instead it lightly dismissed the 10th Circuit's effort to weave its decision from the doctrinal material provided by other lower courts, including EFD (as well as the other then-prevailing lower-court method of analyzing a unilateral refusal to deal, the so-called “intent test”). In *Aspen's* concluding footnote, the Court simply observed:

Given our conclusion that the evidence amply supports the verdict under the instructions as given by the trial court, we find it unnecessary to consider the possible relevance of the “essential facilities” doctrine¹¹⁸

It required another fourteen years for the Court to further reflect on EFD, and in the event it was through a short but trenchant dictum on a related regulatory issue. That dictum has been especially influential because it came from Justice Breyer, who has had unique influence on the application of antitrust law to regulated sectors. Justice Breyer

¹¹⁶ 342 U.S. 143 (1951).

¹¹⁷ *Verizon Commc'ns., Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 409 (2004).

¹¹⁸ *Aspen Skiing*, 472 U.S. at 611 n.44.

spent early career time as a senior staff member in the Antitrust Division and then as counsel to the Senate Judiciary Committee, which has legislative oversight of antitrust enforcement. He also became a well-regarded scholar on the related subjects of economic regulation and administrative law. His tenure as Senate Judiciary Committee counsel coincided with significant legislative efforts to deregulate several major US industry sectors. He was instrumental in the specific effort to liberalize economic regulation of commercial aviation by the Civil Aeronautics Board. The CAB had been heavily criticized for blockading entry and eliminating price competition in the aviation sector for decades.

Justice Breyer joined the U.S. Court of Appeals for the First Circuit in 1980, and began to have direct influence on how the borderline between regulation and antitrust is defined for purposes of antitrust litigation. In *Town of Concord v. Boston Edison*,¹¹⁹ a ruling that foreshadowed a subsequent line of Supreme Court cases addressing the issue, then-Judge Breyer was faced with a claim that a “price-squeeze” by an electric power utility constituted unlawful monopolization. The basic claim was that Boston Edison, a power supplier operating at both wholesale and retail levels (like OTP in *Otter Tail*), kept its wholesale rates high and its retail rates low, making it uneconomical for municipalities within its service area to operate at the retail level. Just as in *Otter Tail*, wholesale rates were controlled by federal regulation, while retail rates were controlled by state utility regulation.¹²⁰ Emphasizing the complexity and likely futility of applying a layer of antitrust intervention to pricing decisions already subject to comprehensive administrative agency supervision at both state and federal levels, Breyer wrote for a panel that refused to recognize such a claim, reversing a lower-court verdict in plaintiff’s favor.¹²¹ Although the opinion defies quick summarization, Breyer’s extensive and careful

¹¹⁹ 915 F.2d 17 (1st Cir. 1990).

¹²⁰ *Id.* at 20.

¹²¹ *Id.* at 31.

reasoning traversed questions involving the likely effects (both pro- and anticompetitive) of the conduct in question, as well as the dangers of leaving antitrust courts free to ramble through the labyrinth of public utility regulation, as would have been required to administer any remedy in a case of this character.

This brings us to Justice Breyer's first explicit contribution to the EFD debate from his later position on the Supreme Court. Fourteen years after *Aspen Skiing* deftly sidestepped EFD in a footnote, *AT&T Corp. v. Iowa Utilities Bd.*,¹²² reached the Court. The case involved appellate review of rules adopted by the Federal Communications Commission (FCC) to implement the Telecommunications Act of 1996.¹²³ This legislation sought to resolve a number of significant legal and regulatory questions plaguing the communications industry for more than a decade following dissolution of the former Bell System, which had held a monopoly (subject to FCC and state regulation) on telecommunications service in much of the U.S. for most of the 20th Century. The challenged regulations had in part implemented a statutory mandate requiring the FCC to compel regulated local monopoly telephone companies (the "Baby Bells" spun off from the former Bell System) to provide various forms of network access to would-be competitors. Among numerous other claims, petitioners challenging the FCC rules asked the Court to treat these mandatory access provisions of the statute as analogous to EFD.

In construing the FCC's statutory mandate for facility sharing, Breyer began by mentioning parenthetically that EFD is "an antitrust doctrine that this Court has never adopted."¹²⁴ Having thus distanced the Court from EFD, Breyer questioned whether the statute could have intended that the FCC compel network sharing even where "a new entrant could compete effectively without the facility, or where practical alternatives to

¹²² 525 U.S. 366 (1999).

¹²³ *Id.* at 371-73.

¹²⁴ *Id.* at 428 (Breyer, J., dissenting).

that facility are available.”¹²⁵ Justice Breyer also cited an article critical of EFD by antitrust legend (and Harvard Law School faculty colleague from Breyer’s time there) Prof. Phillip Areeda,¹²⁶ then proceeded to itemize a number of risks posed by any doctrine (including the relevant provision of the Telecommunications Act) suggesting the imposition of mandatory access requirements on firms with competitively valuable resources:

Even the simplest kind of compelled sharing, say, requiring a railroad to share bridges, tunnels, or track, means that someone must oversee the terms and conditions of that sharing. Moreover, a sharing requirement may diminish the original owner's incentive to keep up or to improve the property by depriving the owner of the fruits of value-creating investment, research, or labor. . . . Nor can one guarantee that firms will undertake the investment necessary to produce complex technological innovations knowing that any competitive advantage deriving from those innovations will be dissipated by the sharing requirement. The more complex the facilities, the more central their relation to the firm's managerial responsibilities, the more extensive the sharing demanded, the more likely these costs will become serious. And the more serious they become, the more likely they will offset any economic or competitive gain that a sharing requirement might otherwise provide. The greater the administrative burden, for example, the more the need for complex proceedings, the very existence of which means delay, which in turn can impede the entry into long-distance markets that the Act foresees.

Nor are any added costs imposed by more extensive unbundling requirements necessarily offset by the added potential for competition. Increased sharing by itself does not automatically mean increased competition. It is in the unshared, not in the shared, portions of the enterprise that meaningful competition would likely emerge. Rules that force firms to share every resource or element of a business would create not competition, but pervasive regulation, for the regulators, not the marketplace, would set the relevant terms.¹²⁷

Although *Iowa Utilities Board* did not directly involve any question of antitrust law, Justice Breyer’s contribution identifies generic competitive and institutional issues that affect the wisdom of imposing mandatory access obligations on private resources of competitive value. These issues would be relevant to antitrust as well as to any other field of law in which they arise. Aside from the parties’ explicit invocation of EFD, Breyer’s opening reference to the sharing by a railroad of “bridges, tunnels, or track”—an

¹²⁵ *Id.*

¹²⁶ Phillip Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L.J. 841 (1989).

¹²⁷ *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 428-29 (1999).

unmistakable reference to *Terminal Railroad*—makes a very direct connection to antitrust.¹²⁸ As to the specific concerns identified by Justice Breyer, first, there is the cost, complexity and other burdens of regulating the prices, terms, and conditions of access, which neither courts nor antitrust enforcement agencies are equipped to consider. Second, mandatory sharing poses a threat to innovation and investment in resources that provide competitive value to the market and to the regulated entity. Finally, there is the question of whether mandatory sharing has any potential to increase competition: since regulation sets the terms of the mandatory access, the role allowed for competition between the parties is reduced to that extent, and for a fully-shared resource there is essentially no remaining competition as to the affected activity. Given these substantial risks to competition from mandatory sharing as a regulatory approach, Justice Breyer was led to conclude that “it requires a convincing explanation of why facilities should be shared . . . where a new entrant could compete effectively without the facility, or where practical alternatives to that facility are available.”¹²⁹

Five years later the Court made its most direct and recent assessment of the EFD, relying in substantial part on the same policy elements identified by Justice Breyer in *Iowa Utilities Board*, as well as his key insights on the analysis of monopolization claims in the regulated-firm context in *Town of Concord*. In *Trinko* a customer of long-distance carrier AT&T, complained that local exchange carrier Verizon (also a long-distance competitor) had unlawfully discriminated against AT&T in providing elements of local exchange access and thereby deprived plaintiff of the benefit of competition in the long-distance market.¹³⁰ But the legislation and rules adopted pursuant to the Telecommunications Act

¹²⁸ *Id.* at 428.

¹²⁹ *Id.* at 428. For more on forced interoperability generally and the interoperability requirements of the Telecommunications Act of 1996, see Gus Hurwitz, *Digital Duty to Deal, Data Portability, and Interoperability*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

¹³⁰ *Verizon Commc’ns., Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 404 (2004).

of 1996 supplied a well-elaborated regulatory structure for dealing with such complaints (involving both the FCC and state telecommunications regulators), and indeed remedies had been sought and imposed in the specific instance at issue in *Trinko*. Thus, the question in *Trinko* was whether an independent antitrust claim could proceed against Verizon for the precise conduct that had been subject to regulatory scrutiny and relief.

Justice Scalia, writing for a six-Justice majority (three Justices concurring in the judgment solely upon the distinct rationale that plaintiff *Trinko* lacked standing), followed a mode of analysis very similar to that formulated by then-Judge Breyer in *Town of Concord*: Although the Telecommunications Act was clear that no antitrust exemption was available (the Act provided no explicit immunity and it contained an antitrust savings clause, precluding implied immunity as well), nevertheless the competitive and institutional circumstances compelled the conclusion that *Trinko*'s claim could not be recognized. Justice Scalia first itemized the risks inherent in compelled access remedies involving competitively valuable private resources:

Compelling such firms to share the source of their advantage is in some tension with the underlying purpose of antitrust law, since it may lessen the incentive for the monopolist, the rival, or both to invest in those economically beneficial facilities. Enforced sharing also requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing—a role for which they are ill-suited. Moreover, compelling negotiation between competitors may facilitate the supreme evil of antitrust: collusion. Thus, as a general matter, the Sherman Act “does not restrict the long recognized right of [a] trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal.”¹³¹

This list is very similar to that provided by Justice Breyer in his analysis of the compulsory network sharing regulations in *Iowa Utilities Board*. The first two items—the disincentives to investment created by enforced sharing and the lack of regulatory capacity in the “antitrust courts”—are more or less cloned from Breyer's list.¹³² Finally,

¹³¹ *Id.* at 407-08 (citing *United States v. Colgate & Co.*, 250 U. S. 300, 307 (1919)).

¹³² *Iowa Utils. Bd.*, 525 U.S. at 428 (Breyer, J., dissenting).

whereas Breyer had noted that competition will be suppressed to the extent there is forced sharing, the Scalia list explicitly refers to the risks of collusion among joint venturers—a key element of antitrust analysis of both contractual relationships between competitors and structural transactions establishing enterprises owned in common by otherwise-independent firms.¹³³

III. CONCLUSION: EFD IS ACCESS REGULATION MASQUERADING AS ANTITRUST, AND SHOULD BE CONSIDERED SKEPTICALLY, IF AT ALL, AND ONLY AS A SECTOR-SPECIFIC REGULATORY ALTERNATIVE

Despite the Supreme Court's tendency to distance itself from and identify policy objections to EFD, the Court has not definitively rejected the doctrine in so many words. (In fact, it explicitly declined to repudiate EFD even in *Trinko*.) This has invited commentators to suggest a continuing role for the doctrine. In the 1989 article cited by Justice Breyer in *Iowa Utilities Board*, written a few years after *Aspen*, Professor Areeda assessed EFD and concluded that given the dangers of broad application and the absence of "limiting principles," EFD should be applied only in very narrow circumstances.¹³⁴ Although the respected Areeda & Hovenkamp treatise endorsed outright abandonment of EFD,¹³⁵ some scholars continue to support the legitimacy of EFD and to speculate that it might fulfill some useful role.¹³⁶

¹³³ See U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST GUIDELINES FOR COLLABORATIONS AMONG COMPETITORS (2000); *North Texas Specialty Physicians v. FTC*, 528 F.3d 346 (5th Cir. 2008), *cert. denied*, 555 U.S. 1170 (2009); *Texaco Inc. v. Dagher*, 547 U.S. 1 (2006).

¹³⁴ Phillip Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L.J. 841, 852 (1989).

¹³⁵ 3A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶1771c (2d ed. 2002) (arguing that "the essential facility doctrine is both harmful and unnecessary and should be abandoned").

¹³⁶ R. Pitofsky, D. Patterson & J. Hooks, *The Essential Facilities Doctrine Under United States Antitrust Law*, 70 ANTITRUST L.J. 443-462 (2002) (arguing that, as narrowly defined by various lower federal-court decisions, application of the doctrine is appropriate and may be needful when applied to "essential facilities" that consist of intellectual property).

Even if limited as Prof. Areeda had proposed in his 1989 article, the EFD deserves no support, and lingering speculation about remaining vitality of EFD in scholarship and lower-court decisions has become a serious liability—first, because it still inspires plaintiffs to continue filing claims based on the doctrine, and second, because it is likely encouraging foreign antitrust regimes to engage in various applications of the doctrine that do not recognize and adequately account for the substantive and institutional weaknesses of EFD.

One voice in favor of EFD is the influential Chief Judge of the Seventh Circuit, Diane P. Wood, who, like Justice Breyer, had considerable academic and governmental antitrust experience prior to becoming a federal judge. In a recent article about EFD she states:

We can see that recognition of an anticompetitive practice sometimes has preceded the formal, rigorous economic explanation of why exactly that practice is capable of harming competition and consumer welfare. My suggestion is that the essential facilities doctrine or idea, may belong in that category.¹³⁷

This suggestion is remarkable for at least two reasons: first, EFD has been under active debate—judicial decisions, extensive legal and economic scholarship, *etc.*—for more than forty years. Quite a bit of effort has been expended trying to find a “rigorous economic explanation” for why one might adopt EFD. One of the fundamental understandings to emerge from the discussion surrounding EFD is that the prerequisites for application of EFD (by its own terms, as defined by the lower-court cases and by those advocating recognition of EFD at least in some limited form) are met only when the typical conditions calling for possible implementation of economic regulation are present.¹³⁸ If a market can be served effectively only by unified control of an indivisible “facility” (accepting the possibility that an intangible asset or a complex collection of assets such as a digital

¹³⁷ Diane P. Wood, *The Old New (Or is it the New Old) Antitrust: “I’m Not Dead Yet!!”*, 51 LOY. U. CHICAGO L.J. 1, 17 (2019).

¹³⁸ J. Gregory Sidak & Abbott B. Lipsky, Jr., *Essential Facilities*, 51 STAN. L. REV. 1187, 1222-23 (1999).

platform might constitute such a facility), the adverse economic effects of that monopoly control cannot be limited by the techniques of antitrust law, which prohibit only conduct that restricts competition. If compelled access is required (as distinct from the prohibition of specific identifiable exclusionary practices by the monopolist, or a divestiture restoring or creating competition among independent firms controlling distinct parts of the “facility”), then necessarily the available public policy options are found within the realm of economic regulation, not competition law. Of course, economic regulation—like antitrust and other policy options—brings its own limitations.¹³⁹ Many are severe and often fatal—industry capture, “mission creep”, political cronyism, lack of accountability, *etc.* Thus, judgments regarding the wisdom of invoking regulatory solutions to essential facilities issues will depend upon a complex and unique set of considerations for each such “facility.”

In principle, however, the identification of an essential facility impervious to effective antitrust remedy requires that the key judgments—which business activities and entities to control, which business variables to control (price and other transaction terms, quality, output, capacity, *etc.*)—be carried out by governmental institutions most suitable for that purpose. These are primarily legislative judgments suitable for implementation (if at all) through specialized (usually administrative) forms of regulation. There is little basis to expect that antitrust courts (or enforcement agencies) have any particular competence either in deciding when the instruments of economic regulation should be applied, or in administering such regulation over the extended periods required to make any solution effective.

The second point of interest in Chief Judge Wood’s comment about EFD is the notion “that recognition of an anticompetitive practice” should ever “precede[] the

¹³⁹ Christine S. Wilson & Keith Klovers, *The Growing Nostalgia for Past Regulatory Misadventures and the Risk of Repeating These Mistakes with Big Tech*, 8 J. ANTITRUST ENFORCEMENT 10 (2020). *See also*, Kobayashi & Wright, *supra* note 31.

formal, rigorous economic explanation of why exactly that practice is capable of harming competition.”¹⁴⁰ There has been extensive commentary on and heavy criticism of the tendency of antitrust agencies and courts to treat novel forms of business conduct with suspicion, and tilt toward condemnation in the absence of any persuasive analysis tending to confirm the pro- or anticompetitive characteristics of that conduct. Thus, in this author’s view, Chief Judge Wood has reversed the appropriate order of concern about unexplained competitive conduct. Given the tremendous power of antitrust remedies, as well as the enormous cost and delay inherent in the application of the “great machinery” of antitrust enforcement (per Judge Posner), any judicial suspicion of practices not demonstrated and confirmed to pose genuine competitive risk represents a tangible threat to welfare. Better to advocate the opposite—that no practice should be condemned without persuasive reason, including empirically based economic analysis. I would therefore hesitate long and hard before suggesting that EFD should be preserved in antitrust doctrine because there is suspicion that it might someday be shown to be economically sensible. Given the demonstrable institutional weaknesses of EFD as an antitrust concept—even conceding that there are some industries whose performance may be improved by subjecting them to economic regulation—proper jurisprudential caution suggests continued resistance to any adoption of EFD by the federal courts and antitrust agencies.

¹⁴⁰ *Wood, supra* note 137, at 17.

Standards Development Organizations, Intellectual Property, and Standardization: Fundamentals and Recent Proposals

*Joanna Tsai**

INTRODUCTION

Standards development and intellectual property are cornerstones of the modern, digital economy and commerce. Many businesses rely on a variety of standards and intellectual property, and many products can be brought to market because of standards and continued innovation. As individuals, our day-to-day routine relies on 4G or 5G on our smartphones to communicate, Wi-Fi to receive and send information on our devices, and Bluetooth to connect AirPods to the various pieces of technology we own. Many of these products incorporate technologies based on standards that read on patented inventions. Because of these standards, our smartphones are able to connect with various types of wireless audio devices. Our smartphones, laptops, tablets, TVs, and even refrigerators and washing machines, can connect to the internet wirelessly through a Wi-Fi router. Our smartphones, regardless of the brand or the manufacturer, can connect to the cellular network. These standards came about through the work of Standard Development Organizations (“SDOs”), where patent owners and patent implementers collaborate as members of the SDOs to develop common standards for the different technological functions.¹ The collaborators review, discuss, and vote on which set of codes, inventions, and protocols are adopted into the standard.

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¹ SDOs are also referred to as Standard Setting Organizations (“SSOs”). For the purposes of this article, they are interchangeable.

Yet standards and intellectual property rights have been one of the most hotly debated and litigated topics in the last couple decades. Some cases involving alleged deception in the standard development process focused on an SDO participant failing to disclose patented innovations that were later incorporated into the standard, which caused the industry to become locked-in to the use of those technologies, and the patent owner collected substantial royalties from the manufacturers that practiced the standard. Other cases involve manufacturers and patent owners, that disagree on what Fair, Reasonable and Non-Discriminatory (“FRAND”) royalties should be for a patent that has been incorporated into an SDO’s standard. Finally, when it comes to the vast and complex digital economy of the modern age, there are many critical questions – many of which lack good answers – that relate to standards. In particular, do mandated open systems of standards and interoperability facilitate or deter innovation and competition?

This chapter begins with a primer on SDOs in Section I, followed by a review of the competition policy debate on SDOs and intellectual property rights in Section II. In Section III, I summarize some of the recent proposals that relate to standards and interoperability and offer my thoughts on those proposals.

I. ECONOMICS OF STANDARDIZATION, STANDARD DEVELOPMENT ORGANIZATIONS, AND STANDARD DEVELOPMENT PROCESSES

A. Background on SDOs, Membership, and Processes

SDOs are organizations in which patent holders and adopters participate voluntarily, to discuss and determine, through consensus, the technical aspects of standards. SDOs serve as a forum where industry participants perform collaborative research and discuss the merits of alternative technologies. Patent holders contribute their knowledge and technology, whereas adopters, also known as implementers, give their knowledge and input from the implementation perspective. The goal is to identify the best available solution to a given technical problem when there are gains from

coordinating on a common design. At the end of the process for a particular standard, an SDO chooses a particular technology to incorporate into the standard and issues a formal endorsement. This adoption by the SDO signals the end of deliberations and promotes industry-wide investments in the new technology.

SDOs have long been crucial to our innovation-driven economy, although their role has intensified over the last few decades as technology becomes a greater part of modern life and the economy. SDOs develop, support, and set interoperability and performance standards, which help to facilitate the adoption of new technologies.² The participating patent holders can be individuals, or individuals representing firms and other organizations including academic institutions that own patents. The firms and organizations that participate in SDOs are typically of varying sizes, large and small, and some contribute intellectual property rights (“IPRs”), while others adopt and implement the technology. Some have found that standards development is conducted primarily by personnel employed by firms active in relevant product markets. For example, studies found that several large firms in the computing, semiconductor, and electronics industries were actively engaged in 50 or more different SDOs.³

When developing standards, SDOs typically require their members to disclose the intellectual property rights they own and ask for a commitment to a FRAND royalty rate for a license to any IPRs the members contribute that become standard essential.⁴ Working groups within SDOs then review and evaluate the various contributed

² See, e.g., U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 33 (2007), <http://www.ftc.gov/sites/default/files/documents/reports/antitrust-enforcement-and-intellectual-property-rights-promoting-innovation-and-competition-report.s.department-justice-and-federal-trade-commission/p040101promotinginnovationandcompetitionrpt0704.pdf>.

³ Justus Baron & Daniel F. Spulber, *Technology Standards and Standard Setting Organizations: Introduction to the Searle Center Database*, 27 J. OF ECON. & MGMT. STRATEGY 462 (2018).

⁴ James Ratliff & Daniel Rubinfeld, *The Use and Threat of Injunctions in the RAND Context*, 9 J. OF COMPETITION L. & ECON. 1 (2012).

technologies and, through many discussions among engineers and technical experts, determine the best technology or sets of technologies for the standard. IPRs deemed essential to a standard by the working groups are known as Standard Essential Patents (SEPs). SDOs' member firms compete vigorously for inclusion into the standard during the evaluation process, in part because owners of SEPs expect to earn a steady revenue stream from licensing their IPRs to firms that manufacture products that incorporate the standard.

SDOs vary significantly in terms of size and span a variety of industry and technical categories, including aeronautics, artificial intelligence, automotive, life sciences, wireless and mobile, electronics, and many others.⁵ As of July 2020, there are 1,120 SDOs around the world. Some SDOs are focused on one industry, while others cover multiple industries. For example, the International Telecommunication Union, Telecommunication Standardization Sector ("ITU-T") is one of the oldest and largest SDOs. It covers standards solely in the telecommunications industry and has issued more than 4,700 standards. American National Standards Institute ("ANSI") and Institute of Electrical and Electronics Engineers ("IEEE"), on the other hand, cover multiple industries, each with thousands of members and standards.⁶

B. Benefits and Costs of Standards

Standards can make products more valuable for consumers and less costly for firms to produce.⁷ Interoperability standards, for example, ensure that products manufactured by different companies are compatible with one another and can also

⁵ For a list of SDOs and standards in a variety of fields, see *Standard Setting Organizations and Standards List* (last visited Aug. 15, 2020), <http://www.consortiuminfo.org/links/>.

⁶ Baron & Spulber, *supra* note 3 (using membership data from 195 different SDOs, Baron and Spulber found that the median SDO during the period studied had 114 members, and only five SDOs had membership levels greater than 1,000.)

⁷ See, e.g., U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 2, at 33.

reduce companies' costs of production by making it less costly for them to acquire technical information and simplify product design. For consumers, standards facilitate interoperability from a wide adoption of the standards, which in turn can help to protect consumers from stranding and result in greater realization of network effects.⁸ Consumer benefits from product compatibility are particularly large for network industries, where the value of a product or service to an individual consumer increases as the number of consumers that adopt compatible products rises.⁹

SDOs are not the only way by which standards are set. Standards also may be set through competition in the marketplace whereby firms compete vigorously in a "standards war," and the market eventually tips toward a single product that then becomes the *de facto* standard for an industry.¹⁰ One classic example is the competition between VHS and Beta before the market tipped toward VHS in the 1980s. Instead of a standard that was discussed and determined early on, VHS and Beta competed in the marketplace and, in a sense, the consumers helped to choose what became the standard for the industry based on their preferences and experience with the products.

Either way, firms compete against one another for their technologies to become the standard. The difference is not whether competition takes place but rather where that competition takes place—through an SDO's standard development process or in the

⁸ Consumers can be stranded if the technology they invested in becomes obsolete and/or unsupported when another technology "wins" in a standards war through competition in the marketplace. This means they may not have necessary after sales support, and/or no complementary goods to keep their technology current and enjoyable. See, e.g., Bruce H. Kobayashi & Joshua D. Wright, *Intellectual Property and Standard Setting*, in ABA HANDBOOK ON THE ANTITRUST ASPECTS OF STANDARDS SETTING 95 (2010); Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, 1 INNOVATION POL'Y & ECON. 119 (Adam B. Jaffe, Josh Lerner & Scott Stern eds., 2001).

⁹ *Id.*

¹⁰ See, e.g., U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 7, at 34; Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSP. 93, 107-08 (1994); Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CALIF. L. REV. 1889, 1899 (2002); Shapiro, *supra* note 8, at 137-38. It is also possible the market does not tip toward a single product, and multiple, incompatible products prevail in the marketplace.

marketplace. Of course, the standards that would emerge through one versus another mechanism may be different, and thus can have different consequences on efficiency and consumer welfare.

An initial industry-wide standard can have significant benefits, including a higher success rate of launching a new network and introducing important technologies to the marketplace, greater realization of network effects, increasing protection afforded to buyers from being stranded, and enabling competition within the standard.¹¹ A standard set by SDOs also avoids a standards war, where firms may have to incur significant costs in order to establish an installed base of users. Consumers may also delay purchasing until the *de facto* standard is established to avoid the costs of choosing a losing standard.¹²

The positive network externalities of standards in network industries are widely recognized. For example, in its recent report on competition policy for the digital era, the European Commission (“EC”) notes that new technologies of information are often subject to network externalities, where “the usefulness for each user of using a technology or a service increases as the number of users increases.”¹³ This is true for large social platforms, where the larger the platform, the more users will be able to find the person they want to interact with on the platform, but also for others, such as communication standards.¹⁴

There can also be costs associated with standards. SDO-set standards may impose

¹¹ See, e.g., Marc Rysman & Timothy Simcoe, *Patents and the Performance of Voluntary Standard-Setting Organizations*, 54 MGMT. SCI. 1920 (2008); Shapiro, *supra* note 8, at 138.

¹² See, e.g., Jeffrey Church & Roger Ware, *Network Industries, Intellectual Property Rights and Competition Policy*, in *COMPETITION POLICY AND INTELLECTUAL PROPERTY RIGHTS IN THE KNOWLEDGE-BASED ECONOMY* 230 (Robert D. Anderson & Nancy T. Gallini eds., 1998).

¹³ DIRECTORATE-GENERAL FOR COMPETITION, EUR. COMM’N, *COMPETITION POLICY FOR THE DIGITAL ERA* (2019) [hereinafter EC REPORT], <https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf>.

¹⁴ See, e.g., John M. Yun, *Overview of Network Effects and Platforms*, in *THE GAI REPORT ON THE DIGITAL ECONOMY* (2020); and Christopher Yoo, *Network Effects in Action*, in *THE GAI REPORT ON THE DIGITAL ECONOMY* (2020).

costs on consumers by reducing *ex ante* competition and consumer choice, and by promoting proprietary control over a closed standard.¹⁵ In the absence of property rights to standards, for example, the adoption of uniform standards may create incentives for free riding and suppress incentives for firms to improve on the current standard or create alternative standards.¹⁶ Moreover, a standard that is adopted too early in the development of a type of technology may snuff out other inventions that offer the same functionality but are superior. Adopting a standard too early may discourage competition between different inventors and suppress other innovations. Critical to the tradeoffs inherent between SDO and *de facto* standards, and to their respective effects upon competition and consumer welfare, are incentives to participate in the SDO process and, in turn, SDO contracting and IPR policies.

C. Contractual Commitments with the SDOs

There is modest but growing literature on SDOs and their IPR policies, including a small number of empirical examinations of SDOs' contract terms. Lemley (2002) offers an early and comprehensive study of SDOs and their contract terms, concluding that SDO IPR policies fundamentally change the way in which IPRs are used in practice and provide incentives to develop and commercialize IPRs in different industries.¹⁷ Lemley emphasizes the significant diversity among SDO IPR policies and examines how antitrust rules can restrict SDOs from engaging in some important procompetitive activities.

SDO IPR policies exhibit rich variation across a number of dimensions. The heterogeneity could suggest the contract terms respond and adapt to changes in the

¹⁵ Shapiro, *supra* note 8.

¹⁶ See, e.g., Luis Cabral & David Salant, *Evolving Technologies and Standards Regulation* (2014), 36 INT'L J. INDUS. ORG. 48 (2014); Kobayashi & Wright, *supra* note 8. See generally STAN J. LIEBOWITZ & STEPHEN E. MARGOLIS, WINNERS, LOSERS & MICROSOFT: COMPETITION AND ANTITRUST IN HIGH TECHNOLOGY (1999) (discussing standards competition).

¹⁷ Lemley, *supra* note 10.

competitive environment and to the specific needs of each SDO to design, incorporate, and attract the IPRs that yield the best standard for the organization. Although some SDOs have no policies at all, others have well-developed IPR policies.¹⁸ For those SDOs with IPR policies, SDO rules governing the scope of disclosure, licensing arrangements, and whether members' ownership of IPRs within a standard is prohibited, all vary considerably.

Some SDOs require royalty-free licensing before incorporating the IP into a standard, while others require "reasonable and nondiscriminatory licensing."¹⁹ Other SDOs specifically compel members to license worldwide to everyone using the standard, not just to other members of the SDO. Certain SDOs provide guidance upon the meaning of "reasonable" and specify a mechanism for dispute resolution, while others do not. The FRAND commitment itself can also take a variety of forms—it may be implicit from the patentees' participation in a standard development process (per the SDOs' bylaws), or it may be an explicit written acknowledgement of such obligations to the SDOs.²⁰ SDOs may require an IPR holder to make a uniform and specified FRAND assurance, or may allow the IPR holder the freedom to express its willingness to license on its own terms. For example, IEEE considers the letters of assurance from four different owners of SEPs for the Wi-Fi standard. One patent holder promises that the technology "will be made available at nominal costs to all who seek to use it for compliance with an incorporated standard," while another agrees to license on a "non-discriminatory basis and on

¹⁸ See, e.g., U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 7, at 47; Benjamin Chiao, Josh Lerner & Jean Tirole, *The Rules of Standard-Setting Organizations: An Empirical Analysis*, 38 RAND J. ECON. 905, 916-18 (2007); Lemley, *supra* note 10, at 1904-6, 1973-1980; Joanna Tsai & Joshua Wright, *Standard Setting, Intellectual Property Rights, and the Role of Antitrust in Regulating Incomplete Contracts*, 80 ANTITRUST L. J. 157 (2015).

¹⁹ See, e.g., U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 7, at 47; Chiao et al., *supra* note 18; Lemley, *supra* note 10, at 1904-06, 1973-80.

²⁰ See James Ratliff & Daniel L. Rubinfeld, *The Use and Threat of Injunctions in the RAND Context*, 9 J. COMP. L. & ECON. 1, 10-11 (2013).

reasonable terms including its then current royalty rates.”²¹ A third patent holder provides no benchmark at all to roughly estimate the royalty rates it would charge. In short, SDO contract terms exhibit remarkable heterogeneity quite consistent with the variation in market forces faced by their remarkably varied members and associated technologies.

Lerner and Tirole (2006) address the question of how firms choose between competing SDOs.²² They introduce competition between SDOs and IPR policies in that competition. Specifically, Lerner and Tirole demonstrate the incentives for forum shopping technology contributors to respond to “sponsor friendly,” and less rigid, IPR policies, resulting in higher quality standards. Chiao, Lerner and Tirole (2007) test these predictions by examining SDO IPR policies and find that user-friendliness is positively correlated with concessions. They also show that royalty-free licensing tends to be associated with no disclosure requirements, while RAND licenses are associated with disclosure requirements.

Layne-Farrar (2013) assesses the changes of SDOs’ IPR policies over time in response to antitrust enforcement policy changes and enforcement actions.²³ Layne-Farrar illustrates that most SDOs have responded specifically to changes in the risk of antitrust exposure by altering their IPR policies. In fact, she found several examples of proactive policy changes to prevent certain risks from materializing and many examples of reactive but still timely changes. Only a handful of SDOs fail to keep pace with the evolution of antitrust concerns. Layne-Farrar concludes that this suggests that “heavy-handed” interventions are unwarranted, but safe harbor guidelines from competition

²¹ *Id.* (citing Kamilo Feher, Dir. Digital Commc’ns Research Laboratory, Univ. of Cal., Davis, Notice of Patent Applicability (Sept. 20, 1993, rev. June 29, 1994), <http://goo.gl/F0djs>; Letter from Walter L. Willigan, Program Dir., Licensing, IBM, to Vic Hayes, Chairman, IEEE P802.11 (Oct. 10, 1995), <http://goo.gl/ioCp4>).

²² Josh Lerner & Jean Tirole, *A Model of Forum Shopping*, 96 AM. ECON. REV. 1091 (2006).

²³ Anne Layne-Farrar, *Proactive or Reactive? An Empirical Assessment of IPR Policy Revisions in the Wake of Antitrust Actions*, 59 ANTITRUST BULL. 37 (2014).

agencies in key jurisdictions may be helpful, provided that the guidelines provide sufficient flexibility to be workable across a diverse set of organizations.

Finally, Tsai and Wright (2015) find that SDOs have proven to be dynamic institutions, and that in response to threats of patent holdup, many have adopted and modified a number of contractual provisions to reduce the occurrence.²⁴ In particular, SDOs' contractual innovations to mitigate holdup include patent disclosure rules and IPR licensing terms such as the FRAND commitment. Moreover, rather than inefficiently incomplete, Tsai and Wright find that SDO contracts are an efficient outcome reflecting the costs and benefits of adding greater specificity to SDO contracts.

D. SDOs as a Platform

The significant variation in IPR policies for SDOs IPR that now exist is what one expects to see with competitive contracting in a diverse ecosystem of technologies and SDOs.²⁵ The diversity in contract terms also reflects the many different ways SDOs seek to attract valuable technology contributors as well as adopters to their standards. Although some technology companies join more than one SDO, complying with differing disclosure rules and other policies in different SDOs can be very costly to companies with IPRs, especially for those with large patent portfolios.²⁶

Competition to attract contributors does not imply SDOs would always craft IPR policies that favor contributing members, possibly leading to a higher probability of hold-up, in which a patent holder exercises its right to exclude the use of its invention unless a higher royalty rate is agreed upon. SDOs are also constrained to have policies that are attractive to adopter members and, all else equal, an SDO is more attractive to technology

²⁴ Tsai & Wright, *supra* note 18, at 158.

²⁵ See, e.g., Michael J. Schallop, *The IPR Paradox: Leveraging Intellectual Property Rights to Encourage Interoperability in the Network Computing Age*, 28 AIPLA Q.J. 195, 234 (2000) (suggesting that the variance in IP policies creates a sort of competition, with the most efficient IP rule likely to prevail).

²⁶ U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, *supra* note 7, at 43; Lemley, *supra* note 10, at 1907.

contributors with a larger base of adopters. Similarly, while an SDO with a larger base of adopters is more attractive to technology contributors, it would not attract technology contributors if its IPR policies overwhelmingly favor adopters.

SDOs thus have the features of a two-sided market, where they serve as platforms to join together contributors and adopters. As a platform, a successful SDO needs to attract members on both sides of the platform, by striking a balance for the two sides with respect to their rules and policies. The contract terms optimizing this balance will vary between and within SDOs as technological, regulatory, and market conditions facing the organization change over time.

II. COMPETITION POLICY AND SDO IPR POLICY DEBATE

Despite the benefits of standards, voluntary consensus standards issued by SDOs have become the subject of much controversy, including policy debate, regulatory enforcement, and private litigation. Much of the controversy centers upon the standards that read on patents, the potentially abusive enforcement of such IPRs against manufacturers and other users of products that incorporate such standards, and the terms on which patent holders license the use of those patents.

A. The Role of Patents and SDOs in Innovation and Competition

Patents and the granting of IPRs encourage innovation because it awards enforceable rights to the inventor and allows the invention to be widely adopted by others who can then build upon the invention. The application of intellectual property to standards can be beneficial for the same reasons that intellectual property is generally beneficial.²⁷ The IPRs provide incentives for firms to invest in the production of standards

²⁷ For more on the incentives created by granting IPRs, see Greg Werden, Luke Froeb, Bernhard Ganglmair & Steven Tschantz, *Technology Economics: Innovation, Licensing, and Antitrust*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020); and Richard A. Epstein, *Toward the Peaceful Coexistence of Patent and Antitrust Law*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

and can facilitate the licensing of IPRs as standards are adopted. Patents disclosed to SDOs are cited much more frequently and for a longer period of time than other patents, which suggests that allowing IPRs in standards plays an important role in introducing important technologies into the marketplace.²⁸ The absence of IPRs in standards can lead to the underproduction of standards. Moreover, precluding the use of IPRs in the standard development process may deter investment into research and development and reduce the quality of the final product.

That said, the inclusion of IPRs in standards can create the potential for significant market power. The adoption of a standard often requires specific investment, which can in turn leave those who have adopted the standards without feasible alternatives. If a standard becomes successful and is widely adopted, a firm that owns IPRs that are incorporated into the standard may possess significant market power. Thus, while including IPRs in standards can increase the value of the standard to consumers, standards with IPRs can also present significant risks.

Indeed, there are several articulated concerns over the use of IPRs in standards development.²⁹ An articulated concern is patent ambush, where a patent holder can fail to disclose a patent during the development of a standard, and once that patent has been incorporated and becomes essential, the patent holder may be able to “ambush” implementers of the standard.³⁰ Once implementers have made standard-specific

²⁸ Marc Rysman & Timothy Simcoe, *Patents and the Performance of Voluntary Standard-Setting Organizations*, MGMT. SCI. 1920-34 (2008) (“Our main results show that . . . citations increase substantially following standardization. These results suggest that SSOs identify promising technologies and influence their subsequent adoption.”).

²⁹ See, e.g., Layne-Farrar, *supra* note 23; Kobayashi & Wright, *supra* note 8.

³⁰ A couple of well-known cases brought by the FTC spurred the SDO patent ambush debate, including Complaint, *Dell Computer Corporation*, No. C-3658, 121 F.T.C. 616 (1996). The SDO implicated was VESA (Video Electronics Standards Association). Another is Complaint, *Rambus Inc.*, No. 9302 (June 19, 2002). The SDO implicated was JEDEC (Joint Electron Device Engineering Council), which promulgates standards for the memory chip market, DRAM in particular.

investments, they are locked-in and are subject to a “patent hold-up” because they would have no alternative but to pay patent holders what they demand. Two well-known cases brought by the Federal Trade Commission (FTC) that spurred the SDO patent ambush debate include the FTC’s Administrative Complaint *In the Matter of Dell Computer Corporation* in 1995,³¹ and *In the Matter of Rambus* in 2002.³²

Another articulated concern is over the breach of FRAND licensing commitments, where firms with essential patents (SEP holders) may attempt to charge above-FRAND rates after the patents have been incorporated into the standard, or the patent owner may attempt to seek an injunction against any licensees with whom the owner is not able to reach an agreement on royalty rates. On breach of the FRAND commitment, the allegation is that patent holders may renege on their FRAND commitments after their patents are included in a standard and SDO members have made standard-specific investments in implementing the standard, exploiting *ex post* opportunism. One of the earliest cases was *Broadcom v. Qualcomm* in 2005, in a dispute that spanned several jurisdictions.³³ The main allegations were that Qualcomm charged discriminatory royalties and collected double royalties. In *European Commission v. Qualcomm*, the EC initiated proceedings against Qualcomm, alleging that Qualcomm’s licensing terms and conditions were not FRAND.³⁴ More recently, in 2017, the FTC brought a case against Qualcomm for violating Qualcomm’s FRAND commitments. In particular, the FTC alleged that Qualcomm excluded competitors and harmed competition through policies

³¹ See Complaint, *Dell Computer Corporation*, No. C-3658, 121 F.T.C. 616 (1996); Decision and Order, *Dell Computer Corporation*, No. C-3658, 121 F.T.C. 618 (1996).

³² For a case summary and a list of the filings on this matter, see *In the matter of Rambus Inc.*, FED. TRADE COMM’N (last updated May 14, 2009), <http://www.ftc.gov/os/adjpro/d9302/index.shtm>.

³³ See Press Release, Broadcom Corporation, Broadcom Charges Qualcomm with Violating U.S. Antitrust Laws (July 5, 2005), <http://www.broadcom.com/press/release.php?id=726224&source=home>.

³⁴ See Press Release, European Commission, Antitrust: Commission Initiates Formal Proceedings Against Qualcomm, (Oct. 1, 2007), http://europa.eu/rapid/pressrelease_MEMO-07-389_en.htm.

that required customers to accept elevated royalties when using competitors' processors, refused to license its cellular SEPs to its competitors, and entered into exclusive dealing arrangements with Apple, among others.³⁵ In August 2020, the Ninth Circuit Court of Appeals vacated the District Court's judgment, and reversed the District Court's permanent, worldwide injunction in *FTC v. Qualcomm*, which prohibited several of Qualcomm's business practices. In particular, the Ninth Circuit held that Qualcomm does not have an antitrust duty to license its SEPs to its direct competitors in the modern chip markets, because none of the required elements for the *Aspen Skiing* exception were present. Moreover, to the extent Qualcomm breached any of its FRAND commitments, the remedy for such a breach was in contract or tort law, because the Court was not convinced that Qualcomm's alleged breach of its contractual commitment impaired the opportunities of rivals. Finally, the court concluded that royalties and the "no license, no chips" policy did not impose an anticompetitive surcharge on rivals' modem chip sales.³⁶ In September 2020, a district court in Texas declined to adopt the Broadcom framework in *Continental v. Avanci*, dismissing a claim based on allegedly fraudulent FRAND declarations.³⁷ Clearly, the laws on the breach of a FRAND licensing agreement as it pertains to antitrust claims have continued to develop.

On injunctive relief, the debate focuses on whether the SEP holder should have access to any form of injunctive relief. In particular, does promising to license a SEP on FRAND terms to any licensee preclude the SEP holder from seeking an injunction? On the one hand, by making a FRAND commitment the SEP holder has indicated that it is committed to grant a license to the patent, and that monetary compensation is sufficient.³⁸

³⁵ See Complaint, Fed. Trade Comm'n v. Qualcomm Inc., No. 5:17-cv-00220-LHK (Feb. 1, 2017), https://www.ftc.gov/system/files/documents/cases/0038_2017_02_01_redacted_complaint_per_court_order_dkt.pdf.

³⁶ See Fed. Trade Comm'n v. Qualcomm Inc., 969 F.3d 974, 1005 (9th Cir. 2020).

³⁷ Cont'l Auto. Sys., Inc. v. Avanci, LLC, No. 3:19-CV-02933-M, 2020 WL 5627224 (N.D. Tex. Sept. 10, 2020).

³⁸ Joseph Farrell, John Hayes, Carl Shapiro & Theresa Sullivan, *Standard-Setting, Patents and Hold-Up*, 74

On the other hand, a blanket rule against even seeking an injunction after negotiations were attempted would amount to compulsory licensing for SEPs and would place SEP holders at a significant bargaining disadvantage. Moreover, SEP holders would be subject to “patent hold-out,” in which they would have no relief if implementers refuse to pay a rightful reward to the SEP holders unless SEP holders bring a costly litigation.

B. The Department of Justice’s (DOJ) New 2019 Policy Statement on SEPs Subject to Voluntary FRAND Requirements

In the last year, the DOJ withdrew the joint statement issued by the Department of Justice and the U.S. Patent and Trademark Office (PTO) in early 2013, entitled “Policy statement on Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments.” In its place, the DOJ, PTO, and the National Institute of Standards and Technology (NIST) issued a new joint policy statement at the end of 2019.³⁹ In a speech at the Advanced Patent Law Institute, Assistant Attorney General Makan Delrahim addressed the reasons to protect the patent holder’s right to seek an injunction against infringement of its technology, even when the patent is essential to the practice of a standard.⁴⁰ Moreover, he stressed the importance of how SDOs can affect incentives to innovate when they set patent policies that govern participation in the forum.

In particular, in the AAG’s view, there has been a shift toward the view that patents might confer too much power, particularly if those patents are essential to a technical interoperability standard. The fundamental right of the patent holder to exclude

ANTITRUST L. J. 603 (2007); Lemley, *supra* note 10; Joseph Miller, *Standard Setting, Patents, and Access Lock-in: RAND Licensing and the Theory of the Firm*, 40 IND. L. REV. 351 (2007).

³⁹ U.S. Patent & Trademark Office, Nat’l Inst. of Standards and Tech. & U.S. Dep’t of Justice, Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary F/Rand Commitments (Dec. 19, 2019), <https://www.justice.gov/atr/page/file/1228016/download>.

⁴⁰ Makan Delrahim, Assistant Att’y Gen. for Antitrust Division, U.S. Dep’t of Justice, Remarks at the 19th Annual Berkeley-Stanford Advanced Patent Law Institute: “Telegraph Road”: Incentivizing Innovation at the Intersection of Patent and Antitrust Law (Dec. 7, 2018), <https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-remarks-19th-annual-berkeley-stanford>.

competitors has been questioned in this context. Even with a FRAND commitment, the test for obtaining injunctive relief against infringement is balancing incentives to innovate and benefits to the public. The relevant questions should be, what will optimize the incentive to innovate for the benefit of the public? What would be the effect of disfavoring an injunction in the case of FRAND encumbered patents? Since injunctions against infringement frequently *do* serve the public interest in maintaining a patent system that incentivizes and rewards successful inventors through the process of dynamic competition, enforcement agencies without clear direction otherwise from Congress should not place a thumb on the scale against an injunction in the case of FRAND-encumbered patents.

Moreover, discussion regarding injunctive relief should include the recognition that in addition to patent holders being able to engage in patent hold-up, patent implementers can also engage in patent hold-out, once innovators have already sunk their investment into development of valuable technology, and that both of these possibilities ought to be considered. A balanced discussion should recognize that SDOs may make it too easy for patent implementers to bargain collectively and achieve sub-optimal concessions from patent holders that undermine the incentive to innovate. There is a monopoly versus monopsony problem – a group of manufacturers within an SDO can come together to dictate licensing terms to a patent holder as a condition for inclusion in a standard, exercising collective monopsony power over the patent holder.

Finally, SDOs can and do affect incentives to innovate when they set patent policies that govern participation in the forum. If an SDO's policy is too restrictive for one side or another, it risks deterring participation in pro-competitive standard development. There is no special set of rules for exclusion when patents are part of standards. A FRAND commitment does not, and should not, create a compulsory licensing scheme. The supplemental IEEE business review letter that the DOJ recently issued also reiterates these points. In addition, the letter specifically raises the concern that IEEE's IP policy

might discourage participation in the SDO process.⁴¹

III. RECENT POLICY PROPOSALS RELATED TO STANDARDS

There have been a few recent policy proposals that relate to standards, in particular systems of open standards, protocol and data interoperability, and mandated data sharing. This section reviews those proposals and discusses them in turn from an economic perspective and in the context of the economics of standardization.

A. Proposals on Open Standards for Data and Personal Data Mobility

In a recent report on digital competition, Professor Jason Furman and others propose that a digital markets unit be charged with “enabling greater personal data mobility and systems with open standards.”⁴² Among other things, the Furman Report advocates that there are significant benefits to systems with open standards, which are built using technical specifications that are agreed in common and freely available for implementation. The open standards can thus enable interoperability and compatibility across markets.⁴³

Moreover, the Furman Report indicates that open standards are developed via processes that are transparent and open to broad participation from industry. But the

⁴¹ See Letter from Assistant Attorney General Makan Delrahim to Sophia A. Muirhead, General Counsel and Chief Complaint Officer for Institute of Electrical and Electronics Engineers, Inc. (Sept. 10, 2020), <https://www.justice.gov/atr/page/file/1315291/download>.

⁴² DIGITAL COMPETITION EXPERT PANEL, UNLOCKING DIGITAL COMPETITION: REPORT OF THE DIGITAL COMPETITION EXPERT PANEL 5 (2019) [hereinafter FURMAN REPORT], https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf (“Second, the digital markets unit would be charged with enabling greater personal data mobility and systems with open standards where those tools will increase competition and consumer choice.”).

⁴³ *Id.* at 71-72 (“Systems built using open standards are commonly referred to as those that were built using technical specifications that are agreed in common and freely available. Open standards are building blocks that enable interoperability, compatibility and consistency across markets. Open standards are publicly available and developed via processes that are transparent and open to broad participation from industry.”).

Furman Report notes that there are several obstacles to interoperability. The obstacles can be technical, due to a lack of coordination, and/or misaligned incentives between dominant companies versus the greater good.⁴⁴ The Report proposes that systems be built on open standards, so that the entire service is compatible with that offered by other third parties, and asserts that requiring systems be built on open standards can support ecosystems where competition and innovation can thrive. For example, the Report notes, innovators can build new solutions that compete directly with existing ones, or innovators can build ancillary services based on existing systems, bringing a host of new opportunities for businesses.

While there are indeed significant benefits from standards and interoperability, as we discussed in Section I, there are significant dangers with open standards and conferring the power to a digital markets unit to establish the systems of open standards. Open standards can very much be at odds with innovation and competition, for several important reasons.

First, although standards enable innovators to build upon existing inventions in a compatible manner, standards can also inhibit innovators from building inventions that could potentially be bigger and better outside of the prevailing standard. If the standards that already exist are the only standards that can be practiced, then inertia would inhibit breakthrough innovations.

Imagine if we were not allowed to have both iOS and Android systems, because whichever system came first in the eyes of the digital markets unit became the standard and Google or Apple either had to scrap the operating system it had in mind or try to build on top of the infrastructure of the other. This is likely to diminish the strengths and benefits of the system. Without the type of digital markets unit that the Furman Report contemplates to impose a rigid path leading to one standard that was available at one

⁴⁴ *Id.* at 71-75.

point in time, both iOS and Android were developed and entered to compete in the marketplace. Consumers have choices when it comes to mobile devices. While the two operating systems learn from each other in terms of the features that consumers desire, they also compete vigorously with each other. Given that there are substantial followings for both, both systems are successes, with millions of users that find one or the other more beneficial.

The parallel existence of Apple's iOS and Google's Android is an example of how a (current) regime without the interference of a digital markets unit resulted in more innovation and more competition, not less. The marketplace has two mobile operating systems to choose from, and the two systems surely resulted in more competition than there would have been with just one government- sanctioned system. Not only do the two systems offer consumers choices, they also allowed different business models to emerge. Apple's iOS only operates on Apple devices, while Android works with a number of original equipment manufacturers (OEMs), including Samsung, HTC, Motorola, and others. As a result, Android devices are not uniform as Apple devices are, and OEMs further compete on functionality such as camera, screen, and other features to gain consumer sales. In other words, the current environment allowed both intra-system competition (among OEM suppliers), as well as inter-system competition, between iOS and Android. What the digital market units would have done, in choosing a "winner" early on for the sake of interoperability, could have suffocated systems that millions of Americans prefer in their infancy.⁴⁵ Although iOS and Android are the largest mobile operating systems today, they are not the only ones nor were they the first. Before iOS and Android, we had Windows Mobile (first released by Microsoft in 2000), and

⁴⁵ According to eMarketer.com, there were 124.4 million Android smartphone users and 105.2 million iOS smartphone users in the US in 2019. *Apple Grows iPhone Share in US, Despite Overseas Challenge*, EMARKETER.COM (Mar. 12, 2019), www.emarketer.com/content/apple-grows-iphone-share-in-us-despite-overseas-challenge.

Blackberry OS, which has been around since 1999. Nokia also had a mobile operating system, Symbian OS, which was the dominant system until 2010.⁴⁶ Where would we be today if multiple mobile operating systems were not allowed to compete? As Joseph Schumpeter explained, benefits from innovation competition are achieved when innovators try to out-perform one another in order to earn the exclusive business of consumers for some period of time.⁴⁷ Competition in dynamic industries is “for the field” rather than “within the field.” This is exactly what we have seen in the mobile industry.

Second, the Furman Report seems to suggest that this proposed open standard would not incorporate patented inventions, or if it does, the holders of any patented inventions that are incorporated into the open standard would allow the use of their inventions for free (“freely available”).⁴⁸ While we all like free goods, economists have long known that there is no free lunch. Such principles violate the basic laws of economics.

Take supply and demand. Every economics student knows that consumer surplus is the difference between the value (or utility) that the consumer derives from the good or service (as shown by the demand curve) and the price the consumer pays for that good/service. While consumer surplus, and in turn consumer welfare, would be largest if the cost of the good to the consumer were zero, we know that is unsustainable. Why? At the price of zero, no producer would be willing, nor would she be able to provide the good. There is a cost to provide the good and producers cannot justify selling a good without recuperating marginal cost in the short-run and average total cost in the long-

⁴⁶ Marko Milijic, *CRAZY Android vs iOS Market Share Discoveries in 2020*, LEFTRONIC (Nov. 15, 2019), <https://leftronic.com/android-vs-ios-market-share/#:~:text=Between%202012%20and%202019%2C%20the,Android%20devices%20around%20the%20world.>

⁴⁷ See Gilbert, Richard, *Looking for Mr. Schumpeter: Where Are We in the Competition-Innovation Debate?*, 6 INNOVATION POL’Y & ECON. 164-67 (2006).

⁴⁸ FURMAN REPORT, *supra* note 42, at 71. (“Systems built using open standards are commonly referred to as those that were built using technical specifications that are agreed in common and freely available.”).

run. Producers do not get raw materials, electricity, and other essential inputs to production for free. Producers also need to be compensated for time and investments. Why? Because the individual's economically rational choice is to devote time and effort to activities that compensate the best. Intellectual property is no different. If the supply of a good must be at a price of zero, the quantity supplied would be forced to zero.

Put another way, while my enjoyment of the latest generation mobile device might be highest if I did not have to pay for it, would a producer be able or willing to provide it for free? Forcing inventions to be free would similarly result in no intellectual property owners with valuable inventions willing to contribute to a standard, which would hurt consumers in the long run. The consequence of forcing goods and inventions to be free is forcing the quantity supplied to be zero. As a society, do we want to have innovative goods and services, and pay for them, or do we want to not pay for and not have innovative goods and services? The two are undetachable.

Not all developers and product innovations are successful and many ventures fail.⁴⁹ The incentive to innovate is the difference in profit that a firm can earn if it invests in R&D compared to what it would earn if it did not invest.⁵⁰ The incentive thus depends on many factors that drive that difference in profit, including the characteristics of the

⁴⁹ For example, some have suggested that 70 to 80 percent of technology-based start-ups do not see the projected return on investment, and 30 to 40 percent of the start-ups end up with investors losing most or all the money they put into the company. See Carmen Nobel, *Why Companies Fail-and How Their Founders Can Bounce Back*, HARV. BUS. SCH. WORKING KNOWLEDGE (2011), hbswk.hbs.edu/item/why-companies-failand-how-their-founders-can-bounce-back; see also Deborah Gage, *The Venture Capital Secret: 3 Out of 4 Start-Ups Fail*, WALL ST. J. (Sept. 20, 2012), www.wsj.com/articles/SB10000872396390443720204578004980476429190.

In addition, between 1991 and 2010, only 19.3% of potential new drugs entering phase I trials were eventually approved for medical use. See Tohru Takebe, Ryoka Imai & Shunsuke Ono, *The Current Status of Drug Discovery and Development as Originated in United States Academia: The Influence of Industrial and Academic Collaboration on Drug Discovery and Development*, 11 CLINICAL & TRANSLATIONAL SCI. 597 (2018).

Moreover, roughly one third of engineering R&D projects funded through innovation programs at the US DoD, US DoE, NIH, NSF, and NASA, failed or were discontinued by the research team. See Albert Link & Mike Wright, *On the Failure of R&D Projects*, 62 IEEE TRANSACTIONS ON ENG'G MGMT. 442 (2015).

⁵⁰ Gilbert, *supra* note 47, at 162-63.

invention and the strength of intellectual property protection, among others. The strength of intellectual property protection is an important determinant of the profit from invention because it determines the extent to which the inventor can exploit the potential of her discovery to add value, including the benefit from licensing the invention. If the inventor cannot license to others, or cannot do so with appropriate compensation, the difference in profit with and without R&D would be small or nil, which in turn could reduce the incentive to innovate.

Similar economic logic explains why the Furman Report's recommendation with respect to personal data mobility could be problematic and stifle rather than enhance competition and innovation. In the Report, Furman et al. recommended that "[t]here may be situations where opening up some data held by digital businesses and providing access on reasonable terms is the essential and justified step needed to unlock competition."⁵¹ This recommendation is based on the observation that data are of key importance and a driver of concentration and barrier to competition in digital markets. Most would agree that in the digital age, data are important, but it is not clear why requiring companies to share their data would be good policy. Data are an asset, similar to production capacities or know-how, that companies invest in. As many are aware, not all data are valuable, raw data are not necessarily valuable, but retrieving the right data and organizing the data in an informative manner can require significant investment. A policy that requires mandatory sharing of data held by digital businesses not only risks significant privacy concerns, it may also have other unintended consequences. For example, if businesses are forced to share their assets with their competitors, this could reduce (or possibly deplete) the difference in profit that they could earn if they invest in data, compared to what they could earn if they did not invest. This, in turn, could dampen (or eliminate, depending on the degree) the incentive to continue to invest. For businesses

⁵¹ FURMAN REPORT, *supra* note 42, at 9.

that have yet to invest, the difference in profit they could earn if they invest in data compared to what the business could earn if it did not invest, could also fall (or disappear). They could obtain access to the asset “on reasonable terms” without investing. We would have a “free-rider” problem. The combined effect is that instead of a race to the front, in investing and collecting the best database (asset), businesses would prefer to drag their feet to finish last in the race. We need to ask ourselves; would this be good for innovation and competition?

B. Proposals on Data and Protocol Interoperability

In 2019, the European Commission issued a report on competition policy for the digital era that, among other topics, discussed data and protocol interoperability, and argued that there is a case for imposing duties to grant protocol interoperability and data interoperability upon dominant platforms.

1. Protocol, Data, and Full Protocol Interoperability

Recognizing the increasing importance of data, the EC Report discussed data regulation in the context of promoting competition on platforms.⁵² In particular, in addition to data portability (to avoid data-driven lock-ins), there are three types of interoperability: protocol, data, and full protocol. Protocol interoperability would allow two services or products to interconnect, technically, with one another. Data interoperability, on the other hand, would allow continuous and potentially real-time access to user data. Full protocol interoperability refers to standards that would allow substitute services to interoperate, for example, in messaging systems.

Protocol interoperability allows for the development of complementary services and competition on the merit of those services, but may require the development of

⁵² EC REPORT, *supra* note 13, at 58-59.

standards.⁵³ Importantly, the EC Report recognizes that if the development of standards is defined too narrowly or too early, it could hinder innovation, as discussed earlier in Section III.A.

The EC Report indicates that data interoperability allows for complementary services to platforms or to other services to be developed in a larger range of cases than protocol interoperability. While it can also favor multi-homing, allowing users access to several services or platforms along with complementary services and fostering competition in mature markets, the Report cautions that data interoperability “can also have some anti-competitive consequences by limiting the incentives for new forms of collection of data.” Indeed, and as discussed in Section III.A., a policy that requires mandatory sharing of data held by digital businesses with competitors could dampen or eliminate the incentive to continue to invest, facilitate a “free-rider” problem, and reduce rather than increase competition.

Similarly, the Report also discusses that while “full protocol interoperability has the benefit that positive network effects stemming from the larger user base of one platform extend to other platforms,”⁵⁴ it can come at a high price. Full protocol interoperability needs strong standardization across competing platforms, which could significantly dampen the platforms’ ability to innovate, and to differentiate the types of services they provide.⁵⁵ Indeed, as discussed earlier, although standards enable

⁵³ *Id.*

⁵⁴ *Id.* at 59. (“Full *protocol interoperability* has the benefit that positive network effects stemming from the large user base of one platform extend to other platforms in other words, through the imposition of interoperability requirements, the benefits of positive network effects can be shared among direct competitors. In this perspective, interconnection could be an efficient instrument to address concentration tendencies.”).

⁵⁵ *Id.* (“On the other hand, *full protocol interoperability* can come at a high price: the need for strong standardisation across several competing platforms could significantly dampen their ability to innovate and to differentiate the type(s) of service(s) they provide. One of the most important grounds for continuing competition between platforms, and possibly for competition for the market, could therefore be weakened or even eliminated. Furthermore, the need for coordination between the firms affected by the requirement

innovators to build upon existing inventions in a compatible manner, standards can also inhibit innovators from building inventions that could potentially be bigger and better outside of the prevailing standard. Inertia could inhibit breakthrough innovations.

That said, in a later chapter about mergers and acquisitions in the digital field, the EC Report argues that there is a case for imposing duties to grant protocol interoperability and data interoperability upon dominant platforms.⁵⁶ Specifically, the Report argues that data interoperability can be a remedy against anti-competitive leveraging of market power into markets for complementary services.⁵⁷ Further, the Report states that data interoperability may be a good alternative to the break-up of firms. The reason, the Report argues, are that we may be less concerned about appropriability of profits and more concerned with behavior that maintains or increases power, and that in turn lowers the likelihood and incentive for “disruptive and complementary innovation.”⁵⁸

Protocol interoperability would allow two or more services or products to interconnect, technically, with one another. Allowing technical interconnectivity can be pro-competitive, as users can switch from one platform to another, if the technical interconnectivity does not require either platforms to adopt the standards of one platform at the expense of its own innovation or innovative features. An example is the type of

would provide opportunities for collusive behaviour, for instance to limit innovation.”).

⁵⁶ *Id.* at 60.

⁵⁷ *Id.* at 125 (“We have discussed the role that data interoperability may play: with a view to dominant platforms, it can be a remedy against anti-competitive leveraging of market power into markets for complementary services. Where vertical and conglomerate integration and the rise of powerful ecosystems may raise concerns, requiring dominant players to ensure data interoperability may be an attractive and efficient alternative to calling for the break-up of firms – a way that allows us to continue to benefit from the efficiencies of integration.”).

⁵⁸ EC REPORT, *supra* note 13, at 127. (“In a setting in which the barriers to entry are high and the position of dominance is entrenched, we may, therefore, be less concerned about appropriability of profits and more concerned with behaviour that fortifies or expands positions of power and that decreases both possibilities and incentives for disruptive and complementary innovation. Attempts to precisely compute and balance innovation effects will frequently be futile and we consider that ensuring the persistence of competitive pressure to the benefits of users is a sound pro-innovation competition policy.”).

interoperability between Apple's operating system for Mac, macOS, and Microsoft Office products. The Apple and Microsoft products are both company inventions without compromises, but because Microsoft offers its Office suite for Mac users, users who prefer MacBooks to PCs are able to enjoy the functions and features of MacBooks, and still use Microsoft Word, Excel, and other Microsoft Office products. Such interoperability can create more intense competition between Apple's and Microsoft's operating systems, as well as between Apple and PC hardware manufacturers, as users that rely on Microsoft's Office Suite have both as options. Such interoperability was not mandated, but Apple and Microsoft decided to collaborate as it made business sense to both. From Apple's perspective, all else equal, the interoperability can induce more users – in particular those who were hindered from choosing Mac – to choose Mac over PC. From Microsoft's perspective, the interoperability allows it to increase its sales of Microsoft Office to Mac users, in addition to PC users. The result is a win-win situation, in which Apple, Microsoft, and users can all benefit from the interoperability.

Protocol interoperability that benefits consumers can and does occur without mandate. A blunt mandate to impose protocol interoperability across the board on dominant platforms could do so without assessing whether in each specific case the result would be win-win all around, and importantly whether the result would be a win for consumers. Although it may be hard to compute and balance innovation effects, it is hard to know the overall consumer welfare effects without taking into account the effect a protocol interoperability mandate would have on not only static but dynamic innovation. While technical interconnectivity could allow more competition in the short-term, it could reduce competition and innovation in the longer-term, especially if it required the adoption of the standards of one platform at the expense of a firm's own innovation or innovative feature. Other questions relevant to consumer welfare include: how the technical interconnectivity required by such a mandate would affect innovation of either products or services? Interoperability can work in both directions in terms of its effects

on dominant platforms and smaller players: would it reduce the incentive and ability of the smaller competitor to differentiate its product or services?

Data interoperability on the other hand would allow continuous and potentially real-time access to user data. Imposing duties to grant data interoperability upon dominant platforms is essentially mandating data sharing, which I will discuss next.

2. Mandated Data Sharing

Notably, the European Commission recognizes that competition is driven by the search for opportunities for profitable investments, and that competition law “must not kill economic actors’ incentives to invest and innovate.”⁵⁹ Competition law thus must take incentive effects into account before imposing a duty to grant access to data. The EC Report indicates that sharing of data with competitors may promote competition and innovation in the industry when data are produced as a by-product of another activity, and incentives to generate such data will persist regardless of whether competitor access is mandated. Where the essential business model of the platform is premised on acquiring a large user base and a large amount of data, data collection cannot be considered a mere by-product of another activity.⁶⁰ In this case, the incentives to invest in new products and acquire consumers is intrinsically linked to data acquisition. However, the EC Report cautioned, in platform settings platforms have superior ability to monetize data, and this ability itself generates huge incentives to invest.⁶¹ The EC Report argued that data-driven

⁵⁹ *Id.* at 105. (“Competition is driven by the search for opportunities for profitable investments. Irrespective of dominance, competition law must not kill economic actors’ incentives to invest and innovate. In a data-driven economy, this is also true with regard to investment in data collection and processing. Thus, competition law must take the incentive effects into account before imposing a duty to deal, or more specifically a duty to grant access to data.”).

⁶⁰ *Id.* at 106.

⁶¹ *Id.* (“However, in these platform settings, another aspect may gain in relevance, namely the strong indirect network effects that such platforms – and in particular dominant ad-funded platforms – seem to be able to generate through their superior ability to monetise data. This ability appears to generate huge incentives to invest; incentives which do not vitally depend on engaging in a data-driven leveraging of

feedback loops would tend to further entrench dominance, and the benefits for competition and innovation with mandated data sharing may outweigh the negative effects on the dominant firm.

While many digital platforms today monetize data through advertising revenues, that is their only source of revenue to fund the investments they make and the ongoing costs they incur to attract users to the platforms. To attract users to the platform, platform owners often make significant investments to be able to offer free services to users, whether it is search, text messaging, social media, or driving directions. These investments are costs to the platforms, not dissimilar to other businesses, to build production capacity or attractive store fronts in order to attract customers. The difference for digital platforms is that (1) given it is an innovation industry, investments in some projects succeed while others fail, and (2) the industry exhibits direct and indirect network effects.

A feature of the innovation industry is that not only do revenues need to cover ongoing costs, they also need to cover fixed costs, including investment costs. In the pharmaceutical sector or the music industry, for instance, revenues often exceed ongoing, marginal costs of production. It is understood that revenues are necessary to recoup fixed cost and investment costs for successful and failed drugs or music titles. The fact that revenues exceed ongoing costs does not imply that if revenues were reduced, the same effort and innovation would still take place, because that level of revenue might just be enough for the current level of effort and investments. In digital platforms, the fact that platforms are able to monetize data alone does not mean it has “huge incentives to invest,” and that data sharing would not hinder the platforms’ incentives to invest. To fully understand how data sharing might affect the incentives of platforms, we would need to fully take into account their costs, including operating costs, investment costs,

market power to additional aftermarkets.”).

and the opportunity costs of the investments.

With respect to the effect of indirect network effects and the data-driven feedback loops that the EC Report notes would tend to further entrench dominance, there are self-disciplining effects by virtue of the two-sided nature of platforms. While more users, and more data collected on one side of the platform makes the platform more attractive to advertisers, and the revenues from advertisers help to make the platform more attractive to draw in more users, network effects can also work against the dominant platform when it does not balance the interests of both sides of the platform. Television stations could lose viewers when they do not provide the quality viewers expect or show too many advertisements (perhaps part of what helped contribute to success of streaming services like Netflix and Hulu). Text messaging or social media apps could lose users when they do not adequately protect the privacy of their users. Similar to SDOs, due to the two-sided nature of platforms, the rules that platforms make need to balance the interests of both sides of the platforms, as they require both sides to function and grow.

Network effects can cut both ways. While network effects can be the reason for a platform's rocket-like rise, they can also be the reason for its meteoritic fall. With multi-homing and low switching costs, users are able to move from platform to platform easily, which makes the barriers to entry low to challenge even dominant platforms. We have seen evidence that users can switch quickly to alternative platforms. For example, WhatsApp was used by 90% of Brazil's internet population. When WhatsApp was banned in Brazil, Brazilian users signed up for alternative services in a matter of hours.⁶² While Skype was arguably one of the first to market in video calls and conferencing almost two decades ago (and owned by tech giant Microsoft since 2011), the emergence of Zoom was massive and fairly instantaneous when the COVID-19 pandemic hit, and

⁶² See, e.g., Mike Murphy, *Brazil Shut Down WhatsApp for Roughly 100 Million People for 12 Hours*, QUARTZ, <https://qz.com/576485/brazil-has-shut-down-whatsapp-for-roughly-100-million-people/>.

video conferencing became a necessity for both work and personal applications.⁶³

Any drastic measures such as one that imposes mandatory data sharing on dominant platforms ought to be considered only after having carefully and comprehensively examined the empirical evidence on whether such mandates are truly necessary, and with an understanding of the effect that they would have on competition and innovation in the short and long term.

⁶³ See, e.g., Chris Stokel-Walker, *How Skype Lost Its Crown to Zoom*, WIRED (May 12, 2020), <https://www.wired.co.uk/article/skype-coronavirus-pandemic>.

Competition, Regulation, and 5G

*Babette E. Boliek**

INTRODUCTION

Most mobile phone users have heard that a new technology, 5G, is coming soon. Indeed, mobile network operators (MNOs)—AT&T, Verizon, and T-Mobile—have actively advertised the coming wonders of 5G. The new 5G, or fifth generation, mobile networks promise to launch dramatic changes in many industries with potential impacts on competition review and regulatory action. Although not yet deployed, 5G’s advent has affected how regulators and antitrust enforcers think about growth and innovation for MNOs, mobile virtual network operators (MVNOs), and the network equipment manufacturing market. Also, at the forefront of policy choices is how to facilitate 5G coverage and the growth of consumer access to telemedicine and online education. In short, 5G is already a disruptive new technology.

This chapter examines how the influence of 5G affects competition and, in turn, affects regulatory and antitrust decisions. Because the mobile telecommunications industry is dependent on spectrum licenses¹, 5G deployment will implicate Federal

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¹ See Applications of T-Mobile US, Inc., and Sprint Corporation for Consent to Transfer Control of Licenses and Authorizations, Memorandum Opinion and Order, Declaratory Ruling, and Order of Proposed Modification, 34 FCC Rcd. 10,578, 10,580 ¶ 1 (Oct. 16, 2019), https://docs.fcc.gov/public/attachments/FCC-19-103A1_Rcd.pdf [hereinafter T-Mobile/Sprint Transfer] (where T-Mobile and Sprint filed an action with the Federal Communications Commission under section 214 and 310(d) of the Communications Act of 1934 “seeking Commission consent to the transfer of control of the licenses, authorizations, and spectrum leases held by Sprint and its subsidiaries to T-Mobile”). Section 310(d) requires application to the Commission prior to transfer of licenses and the Commission must find that the transfer will serve “the public interest, and convenience, and necessity.” 47 U.S.C. § 310(d). For well-defined purposes, the cell phone industry is considered a common carrier. 47 U.S.C. § 201 (Title II of the Communications Act). As 5G’s greatest impact will be felt in the increase of high-speed broadband services (Title I) rather than common carrier services,

Communications Commission (FCC) regulation and merger review.² In addition, as a traditional telecommunications industry, MNOs and other related industries are subject to antitrust scrutiny by the Department of Justice (DOJ), Antitrust Division.³

As both the FCC and the DOJ make many decisions based on the state of competition in an industry,⁴ considering the potential competitive impacts of 5G development is an important exercise. Indeed, the importance of guarding potential procompetitive innovation is often as important to federal agencies as is preventing or prosecuting anticompetitive conduct. This has already played out in the approved 2019 merger of Sprint and T-Mobile where the prospect of speeding the spread and adoption of 5G technology encouraged joint DOJ and FCC approval.⁵ The following discussion

the regulatory discussion in this article will concentrate on the former type of regulation.

² Title II of the Communications Act of 1934 (47 U.S.C. 201) gives the FCC wide-spread power to regulate the communications industry. Babette E.L. Boliek, *FCC Regulation Versus Antitrust: How Net Neutrality is Defining the Boundaries*, 52 B.C. L. REV. 1627, 1643 (2011), <https://lawdigitalcommons.bc.edu/bclr/vol52/iss5/2/>. The FCC can “perform any and all acts, make such rules and regulations, and issue such orders, not inconsistent with [section 4 of the Communications Act of 1934], as may be necessary in the execution of its functions.” *Id.* 1631 n.11 (quoting 47 U.S.C. § 154(i) (2006)). See also Memorandum from the RSFI and OGC on Current Guidance on Economic Analysis in SEC Rulemakings to Staff of the Rulewriting Divisions and Offices at 1, (Mar. 16, 2012), https://www.sec.gov/divisions/riskfin/rsfi_guidance_econ_analy_secrulemaking.pdf (discussing the importance of high-quality economic analysis to SEC rulemaking and how a rule’s potential benefits and costs are important to determine if the rule is in the public interest).

³ Under Section 7 of the Clayton Act, the Antitrust Division’s review analyzes whether the merger is likely to lessen competition and is limited to an analysis of the competitive effects of the particular merger. 15 U.S.C. § 18.

⁴ See *supra*, note 2. The Sherman Act (15 U.S.C. §§ 1–7), established in 1890, is the United States’ commitment to a free market economy, benefitting consumers. ANTITRUST ENFORCEMENT AND THE CONSUMER, DOJ 2 (2005), <https://www.justice.gov/atr/file/800691/download>. The Clayton Act (15 U.S.C. §§ 12–27 (2006)), passed in 1914 and amended in 1950, prohibits mergers and acquisitions “likely to lessen competition.” *Id.* Persons considering a merger or acquisition must notify the DOJ and the FTC. *Id.* at 2. The Federal Trade Commission (FTC) Act (15 U.S.C. §§ 41–58 (2006)) created the FTC and prohibits unfair competition in interstate commerce. *Id.* at 3.

⁵ See T-Mobile/Sprint Transfer, *supra* note 1, at 10,672–73, ¶ 215–16 (applicants state the combination of Sprint and T-Mobile will better position the US to lead the race for nationwide 5G deployment); Statement of Ajit Pai, Chairman of the FCC, Applications of T-Mobile US, Inc. and Sprint Corporation for Consent to Transfer Control of Licenses and Authorizations, 34 FCC Rcd. 10,578, 10,842–43 (Oct. 16, 2019), https://docs.fcc.gov/public/attachments/FCC-19-103A1_Rcd.pdf (agreeing that the merger is in the public

focuses on the importance of 5G in competition review in various contexts.

The first part of this chapter puts forward a brief background on technology. The second part examines the use of 5G in FCC and DOJ merger review. The third part analyzes the potential increased efficiency and decentralization of the traditional MNO and how this might impact future competition analyses. And the fourth part examines how 5G may be a factor in less traditional competitive analyses—for example in federal attempts to develop markets in underserved areas, in delivering education and telemedicine, and in increasing competition to minimize theoretic bottlenecks.

I. A BRIEF 5G BACKGROUND

A. *What Is 5G*

5G is a general-purpose technology. No mere update to 4G, 5G is a major, architectural innovation, capable of helping many other complementary innovations take root. The most promising aspects of the technology are increased capacity (bandwidth), increased data upload and download speeds, decreased latency (delay) in data transmissions, and greater input efficiency.⁶ With the anticipated capacity increases, 5G may enable connections to “everything, always (24/7) and everywhere connectable to networked digital communication, computing, and storage resources wherever and

interest by helping to enable the US leadership in the race to 5G deployment); U.S. Dept. of Justice, *Court Enters Final Judgment in T-Mo/Sprint Transaction*, JUSTICE NEWS (Apr. 1, 2020), <https://www.justice.gov/opa/pr/court-enters-final-judgment-t-mobilesprint-transaction> (quoting Assistant Attorney General Makan Delrahim of the Justice Department’s Antitrust Division stating “the end result [of the merger] will be strengthened competition with high-quality 5G networks that will benefit American consumers nationwide”).

⁶ WILLIAM LEHR, *THE FUTURE OF BROADBAND COMPETITION IN A 5G WORLD* 6–7 (Aug. 15, 2018), <https://ssrn.com/abstract=3240191>. 5G is anticipated to offer data rates in the 100s of Megabits per second (Mbps) or more compared to an estimated 10s of Mbps that 4G currently offers. *Id.* at 6. Latency is anticipated to decrease from 10 milliseconds (ms) to 1 ms. *Id.* Enhanced mobility across radio nodes is expected and will be important because small cells will likely result in increased hand-offs between radio nodes. *Id.* Since the number of devices per person is increasing, these devices need to be connected to the network, likely causing increased connection density. *Id.* Improved spectral and energy efficiency are also expected to help lower costs. *Id.* at 7.

whenever wanted.”⁷ Looking at a few anticipated changes, architectural changes are likely to increase consumer quality, increases in spectral and other efficiencies will decrease costs, and new technological options will expose manufacturing markets to increased competition.

To bring about these benefits, the MNO will change the architecture of the underlying network. One such change will be the “densification” of mobile networks. MNOs will increase the number of small cells, densifying the spread of cells in any given area.⁸ These small cells, often the size of a pizza box, amplify the broadcast from towers and may be installed, for example, directly on tall buildings. Tall buildings are notorious for obstructing radio signals that create dead spots and lead to lost signals. The small cell densification of urban areas will decrease these signal problems and increase quality.

Another architectural innovation of 5G is that it increases spectral efficiency. 5G is sufficiently robust that it can use a large variety of different spectrum frequencies, even some frequency bands that were commercially unusable by previous network technology. Usually, the mid-level band frequencies are the most fertile for mobile transmissions, but the 5G technology allows even higher bands, that are more abundant, to be productively used in the network.⁹ For example, 5G will facilitate the use of new

⁷ *Id.* at 4–5.

⁸ Christopher S. Yoo & Jesse Lambert, *5G and Net Neutrality*, FACULTY SCHOLARSHIP AT PA. L. 6 (2019), https://scholarship.law.upenn.edu/faculty_scholarship/2089. 5G densification could be as high as one base station per twelve (12) homes or even as small as a single home router, meaning one per user. *Id.* This use of small cells could allow multiple users to use and share the same spectrum, resulting in more efficient use of existing spectrum. *Id.*

⁹ Low-band spectrum, or spectrum below 1 gigahertz (GHz) can be used to cover a wide range or area, but at lower speeds of about 30-250 Mbps. GSMA, *5G Spectrum*, GSMA PUBLIC POLICY POSITION at 6, (Mar. 2020), <https://www.gsma.com/spectrum/wp-content/uploads/2020/03/5G-Spectrum-Positions.pdf> [hereinafter *5G Spectrum*]; Jeremy Horwitz, *The Definitive Guide to 5G, Low, Mid, and High Band Speeds*, VENTURE BEAT (Dec. 10, 2019, 1:29PM), <https://venturebeat.com/2019/12/10/the-definitive-guide-to-5g-low-mid-and-high-band-speeds/>. This type of spectrum will be useful to provide 5G rural coverage. *5G Spectrum, supra*, at 6. Mid-band spectrum ranges between 1 and 6GHz, Sue Marek, *5G Spectrum Bands Explained—Low, Mid and High Band*, FUTURITHMIC (Feb. 11, 2020), <https://www.futurithmic.com/2020/02/11/why-spectrum-bands-matter-in-a-5g-world/#:~:text=Low%2Dband%20spectrum%20is%20any>

radio frequencies above 6 GHz, maximizing transmission, latency, and reliability over previous generations.¹⁰ This permits increased spectral efficiency.

Additional 5G cost efficiencies will come in part from the increase of data capacity of the network. Data capacity increases are of course desirable for consumers, but it also helps operators design a more efficient network architecture. For example, with 3G and 4G, each MNO runs as many as 10 or 12 “separate” subnetworks. Each network is used for a specific purpose or customer group—general consumers, business consumers, etc. Increased capacity allows these multiple networks to run on one infrastructure and share valuable, limited spectrum—potentially saving administrative, engineering, and other operator costs as well.¹¹

.low%2Dband%20800%20MHz%20spectrum.&text=T%2DMobile%20also%20plans%20to.in%20the%20millimeter%2Dwave%20band, and can be used to cover a several-mile range from about 100–900 Mbps. Horwitz, *supra*. High-band spectrum is ideal for high speed mobile broadband delivering about 1–3 gigabits per second (Gbps), *5G Spectrum, supra*, at 6, however it covers a smaller range of about a mile. Horwitz, *supra*. High band spectrum is in the range above 24 GHz. *5G Spectrum, supra*.

¹⁰ James E. Prieger, *An Economic Analysis of 5G Wireless Deployment: Impact on the U.S. and Local Economies*, ACT ONLINE, 5 (Feb. 2020), <https://actonline.org/wp-content/uploads/ACT-Report-An-Economic-Analysis-of-5G-FINAL.pdf>. While higher spectral bands are more abundant than lower bands, they are less able to pass through barriers or support “non-line-of-site” (NLOS) connectivity. LEHR, *supra* note 6, at 12 n.31; *see also* Prieger, *supra*, at 5 (explaining how the use of small cells could help solve this problem). Small cells are smaller, lower-power stations than macrocells, and therefore will need to be 10 to 100 times more prevalent. Prieger, *supra*, at 5. By making the cells smaller, the cells become easier to install and more available, therefore facilitating the use of higher bands of spectrum. LEHR, *supra* note 6, at 13.

¹¹ 5G is anticipated to influence and facilitate growth in the equipment sector and communication sector. Doug Brake, *Economic Competitiveness and National Security Dynamics in the Race for 5G between the United States and China*, ITIF 1, 9 (Aug. 2018), <https://ssrn.com/abstract=3142229>. The US competes with China regarding the information and communication technology (ICT) services such as radio equipment, chipsets, software, and handsets. *Id.* While less expensive Chinese equipment might enable a faster 5G roll-out, some commentators fear that this could also result in a decrease in US competitiveness in the sale and development of ICT services. *Id.* In addition, two Chinese companies, Huawei and ZTE, are suspected to be influenced by the Chinese government and there is concern that the use of these companies’ equipment inside US telecommunication networks could pose a security threat. *Id.* at 21–22 (external citation omitted). For example, Huawei has been charged with stealing trade secret information and copyrighted works as well as other intellectual property in an attempt to grow and operate Huawei’s business. *Chinese Telecommunications Conglomerate Huawei and Subsidiaries Charged in Racketeering Conspiracy and Conspiracy to Steal Trade Secrets*, JUSTICE NEWS (Feb. 13, 2020), <https://www.justice.gov/opa/pr/chinese-telecommunications-conglomerate-huawei-and-subsidiaries-charged-racketeering>. In May, President Donald Trump “extended for another year an executive order signed in May 2019 declaring a national

Perhaps most exciting, and discussed at greater length below, is the potential move from the current standard of Radio Access Network (RAN) technology to Open Radio Access Networks (O-RAN). This move may decrease costs, increase network efficiencies, and increase competition in the mobile network equipment and software market. In the standard RAN technology, the hardware provider also provides embedded software for the network. With 5G and O-RAN, network software is decoupled from network hardware. This permits greater flexibility in network design. As noted, one result may be increases in network efficiency by permitting network hardware to serve many different customers. This “network slicing” or “softwarization” of the underlying hardware is revolutionary.¹² Not only new efficiencies, but also new market entrants in both the software supply chain and end-user markets might develop.¹³

B. What Benefits and Innovations Might Come

It is reasonable to ask if 5G will live up to the hype. Put another way: What benefits and innovations might consumers reasonably expect in a 5G future?¹⁴ The prospective benefits to consumers fall into three general categories. First, 5G raises the possibility that

emergency and barring U.S. companies from using telecommunications equipment made by firms posing a national risk.” David Shepardson & Karen Freifeld, *Trump Extends U.S. Telecom Supply Chain Order Aimed at Huawei, ZTE*, REUTERS (May 13, 2020, 9:18AM), <https://www.reuters.com/article/us-usa-trade-china-trump/trump-extends-order-on-u-s-telecom-supply-chain-security-until-2021-idUSKBN22P2KG>.

¹² See Yoo & Lambert, *supra* note 8, at 12–13 (discussing how network slicing enables rapid reconfiguration of resources to meet end users’ needs, allowing more efficient sharing and use of resources and enabling greater flexibility and customizability of the communication network).

¹³ CHIH LIN ET AL., O-RAN: TOWARDS AN OPEN AND SMART RAN 6, (O-RAN Alliance 2018), <https://static1.squarespace.com/static/5ad774cce74940d7115044b0/t/5bc79b371905f4197055e8c6/1539808057078/O-RAN+WP+Final+181017.pdf>. Mobile operators must meet increased capacity demands brought about by 5G while controlling costs and, at the same time, offering more to consumers. *Id.* The goal of the O-RAN Alliance is to “bring cloud scale economics” and “agility to the RAN.” *Id.* The openness of the network enables smaller vendors to modify the network to fit their individual needs. *Id.* at 7. In addition, the intelligence embedded in the RAN architecture will optimize efficiency. *Id.*

¹⁴ The expected benefits are of course just predictions, not certainties. And “[i]t’s tough to make predictions, especially about the future.” Yogi Berra.

mobile broadband will become a compelling alternative to cable, DSL, and satellite broadband. Second, there is strong potential that the switch to 5G will usher in new innovations yet unknown, much like the change from 3G to 4G saw the rise of the app economy and a new industry of streaming video. Third, the cost savings and efficiencies of 5G may release capital and resources to invigorate innovation in other parts of the economy.

First, 5G may make mobile broadband, and mobile provided fixed broadband, vigorous competitors in the high-speed broadband market. Several commentators have expressed concern that cable providers dominate the high-speed broadband market. This dominance is largely traceable to superior quality characteristics of cable over other technologies. These attractive qualities are exactly those that 5G promises to improve on mobile networks: increased speeds, faster data rates, fewer delays in streaming (decreased latency), increased mobility, and greater connection density.¹⁵ Even before 5G, mobile operators have seen massive jumps in consumer demand for streaming video that relies on high quality broadband connections.¹⁶ By increasing quality, mobile operators providing mobile and fixed broadband access will be better positioned to compete with other broadband technologies.

¹⁵ See LEHR, *supra* note 6.

¹⁶ *Id.* at 11–12; see also Communications Marketplace Report, Report, FCC Rcd. 12,558, 12,624–26, ¶ 124–26 (Dec. 12, 2018), https://docs.fcc.gov/public/attachments/FCC-18-181A1_Rcd.pdf (stating in 2016–17 traditional cable Multichannel Video Programming Distributors (MVPDs) lost subscribers while virtual MVPDs and large Online Video Distributors (OVDs) that offered video on demand (VOD) gained subscribers). In 2017, the global market for video on demand was \$43.9 billion and is expected to reach \$87.1 billion at the end of 2025. Summary of *Video On Demand Market Size, Share and Industry Analysis by Technology (SVOD, TVOD, AVOD), Content Type (Sports, Music, TV Entertainment, Kids, Movies), and Regional Forecast 2018-2025*, FORTUNE BUSINESS INSIGHTS, (Apr. 2019), <https://www.fortunebusinessinsights.com/industry-reports/video-on-demand-market-100140>. Additionally, since the COVID-19 pandemic, total Internet hits have increased between 50% and 70% and streaming is estimated to have increased by 12%. Mark Beech, *COVID-19 Pushes Up Internet Use 70% and Streaming More Than 12%, First Figures Reveal*, FORBES (Mar. 25, 2020 3:49PM EDT), <https://www.forbes.com/sites/markbeech/2020/03/25/covid-19-pushes-up-internet-use-70-streaming-more-than-12-first-figures-reveal/#3e42e60c3104>.

Second, based on experiences with the move from 3G to 4G, the move from 4G to 5G will usher in yet unknown innovations. With the switch from 3G technology to 4G analysts noted a fantastic uptick in applications (apps), programs, and other innovations not previously seen in the industry.¹⁷ A prominent example is the creation and growth of a mobile, streaming video market. Given that the move from 3G to 4G was a technological update compared to the architectural shift to 5G, excited expectations abound. One of the best guesses for 5G, is that it will facilitate killer innovations in the Internet of Things (IoT).¹⁸ More than just smart refrigerators that nag you to buy more broccoli,¹⁹ anticipated new services include “smart highways and vehicles, smart energy grids, smart healthcare, smart supply chains, smart agricultures and natural resource management, and smart finance and payments.”²⁰ The benefits and the multiplier effect of such innovations are theoretical but reasonably anticipated.²¹

Third, intertwined with the demand-pushing innovation story, there is a cost-saving efficiency story in the move to 5G. 5G promises to permit companies to reduce redundant infrastructures and to use spectral assets more efficiently.²² To be sure, cost

¹⁷ Jeffrey A. Eisenach & Robert Kulick, *Economic Impacts of Mobile Broadband Innovation: Evidence from the Transition to 4G* 14–15 (AEI Econ., Working Paper No. 2020-05, 2020), <https://www.aei.org/wp-content/uploads/2020/06/Eisenach-Kulick-Mobile-Broadband-Innovation-WP.pdf>. The transition from 3G to 4G brought about the development of services such as music and video streaming due to improvements in data speed and capacity, and applications like Lyft and Uber. *Id.* at 15.

¹⁸ While it is difficult to predict the exact course 5G will take, there is some guidance based on analysis of the path taken by 3G and 4G. *Id.* at 15–16. Economic benefits are expected to be similar to 4G adoption with more advanced applications and new business models. *Id.* at 17.

¹⁹ See Jacob Morgan, *A Simple Explanation of ‘The Internet of Things’*, FORBES, (May 13, 2014, 12:05AM EST), <https://www.forbes.com/sites/jacobmorgan/2014/05/13/simple-explanation-internet-things-that-anyone-can-understand/#8b267e21d091> (demonstrating how on a personal level, the IoT could enable your coffee pot to turn on when your alarm goes off (something we can all appreciate) or on a broader scale, even facilitate smart cities that have the potential to reduce waste and improve efficiency).

²⁰ LEHR, *supra* note 6, at 8.

²¹ Eisenach & Kulick, *supra* note 17, at 15–16. If 5G follows the 4G adoption path, the 5G contribution to the GDP is anticipated to reach a peak of about \$635 billion in the 17th quarter after 5G adoption, *id.* at 21, and a peak of about 3 million jobs in the 18th quarter after 5G adoption. *Id.* at 20.

²² Shane Tews, *Telecom Supply Chain Security and 5G: Highlights from my Discussion with David Stehlin*, AEI

savings will not be realized for many years. As one commentator notes, to deliver, MNOs must manage diverse spectrum assets (low, mid-band), small cells, and “softwarization.”²³ “SNL Kagan estimates that the transition to 5G will require building an additional 225,000 small cells by 2021.”²⁴ However, in the near future cost efficiencies may result from the “softwarization” of the network permitting network delocalization, increased cloud services, remote control, and network slicing.²⁵ These cost savings may or may not be passed on to consumers but users can capitalize on these novel network characteristics to create truly “bespoke” services for their own needs, scale, and innovative designs.

Another exciting cost saving advance might come from blockchain. Blockchain technology can be used to counter increased costs resulting from more compact infrastructure and increased user density.²⁶ Blockchain is a technology that decentralizes data and holds it securely by storing the data in blocks. This technology utilizes smart contracts that manage the interactions and agreements between parties. It is anticipated that 5G will work with blockchain on public and private platforms.²⁷ Blockchain can be used to facilitate payment in addition to tracking and managing the active and passive

(April 24, 2020), <https://www.aei.org/technology-and-innovation/telecom-supply-chain-security-and-5g-highlights-from-my-discussion-with-david-stehlin/>. 5G will enable service providers to increase efficiency by combining many networks into two or three rather than operating ten to twelve networks, each requiring its own products, management, and team. *Id.*

²³ LEHR, *supra* note 6, at 1.

²⁴ *Id.* at 14.

²⁵ See Yoo & Lambert, *supra* note 8, at 11–13 (demonstrating how network slicing will allow resources to be reconfigured quickly to meet the needs of end users, allowing resources to be shared similarly to cloud computing); see LEHR, *supra* note 6, at 15.

²⁶ Abdulla Chaer et al., *Blockchain for 5G: Opportunities and Challenges*, IEEE GLOBECOM WORKSHOPS, 1, 1 (2019), https://www.researchgate.net/publication/335518169_Blockchain_for_5G_Opportunities_and_Challenges (explaining how blockchain technology is utilized by Bitcoin, however blockchain can also be used to control communications between parties or devices in a secure and decentralized way.) *Id.*

²⁷ *Id.* The private platform will offer more security as consumer and provider data will be publicly available on the public platform. *Id.* at 2.

sharing of network resources.²⁸ Another benefit of blockchain is that it could be used to manage spectrum sharing in a secure way without third parties and to track usage, ownership, and management of resources. In general, blockchain could open up cost saving opportunities for 5G that are secure and decentralized.²⁹

In sum, if 5G can deliver in even one of the described areas—increasing high-speed broadband competition, facilitating innovations, or reducing costs and efficiencies—it will have delivered on the hype.

II. MERGER REVIEW AND 5G

A. Sprint and T-Mobile

The most significant communications industry merger in recent memory is the 2019 merger of Sprint and T-Mobile, two of the four national, facilities based mobile networks. By tradition, mergers within the communications industry are reviewed by the Antitrust Division of the Department of Justice. Additionally, as in any merger involving the building, extension, or acquisition of a telecommunications line³⁰ or the transfer of spectrum licenses³¹, the Federal Communications Commission must also review and

²⁸ *Id.* at 3.

²⁹ *Id.* Some potential challenges associated with adopting blockchain are that blockchain is a de-standardized and de-regulated technology. *Id.* at 5. Local and international standardization may be necessary for widespread blockchain adoption. *Id.*

³⁰ Section 214(a) of the Communications Act of 1934 states:

[N]o carrier shall undertake the construction of a new line or of an extension of any line, or shall acquire or operate any line, or extension thereof, or shall engage in transmission over or by means of such additional or extended line, unless and until there shall first have been obtained from the Commission a certificate that the present or future public convenience and necessity require or will require the construction, or operation, or construction and operation, of such additional or extended line.

47 U.S.C. § 214(a).

³¹ Section 310(d) of the Communications Act of 1934 states:

[N]o construction permit or station license, or any rights thereunder, shall be transferred, assigned, or disposed of in any manner, voluntarily or involuntarily, directly or indirectly, or by transfer of control of any corporation holding such permit or license, to any person except upon application

approve the merger.

Although two agencies review a communications industry merger, each agency may emphasize different concerns due to differences in their respective standards of review. Generally, antitrust enforcement is based on the “consumer welfare standard” — a standard that seeks to answer whether the competitive gains of a given action outweigh the potential competitive losses.³² More specifically, the standard of review for the DOJ is whether the merger will “tend to lessen competition” within the relevant market (Clayton Act § 7). The standard for the FCC is whether the merger is in the “public interest”³³ — arguably a broader standard of review that encompasses not only the costs or benefits from decreased or increased competition but also expressly considers directly mandated, and non-economic factors.

In analyzing the merger, the FCC considered standard antitrust competition analysis — the FCC spectrum screen.³⁴ The merger analysis for the FCC, the DOJ, and even

to the Commission and upon finding by the Commission that the public interest, convenience, and necessity will be served thereby.

47 U.S.C. § 310(d).

³² For more on the consumer welfare standard, see Elyse Dorsey, *Antitrust in Retrograde: The Consumer Welfare Standard, Socio-Political Goals, and the Future of Enforcement*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

³³ See *id.*

³⁴ Broadly defined, the spectrum screen measures the spectrum holdings held by a particular owner in a given geographic area. T-Mobile/Sprint Transfer, *supra* note 1, at 10,618 ¶ 94.

The spectrum screen, applied on a county-by-county basis, identifies local markets where an entity would hold approximately one-third or more of the total spectrum suitable and available for the provision of mobile telephony/broadband services, post-transaction. Further, if the acquiring entity would increase its below-1-GHz spectrum holdings to hold approximately one-third or more of such spectrum post-transaction, [the FCC] appl[ies] enhanced factor review.

Id. The spectrum screen revealed that

New T-Mobile would hold 240 megahertz or more of spectrum in 356 CMAs covering approximately 82% of the population in the United States (and territories). Across those local markets, New T-Mobile would hold a maximum of 361.7 megahertz of spectrum post-transaction. Although the spectrum screen is triggered in much of the nation, we note that the combination of spectrum and other resources brought together as a result of the proposed transaction would give New T-Mobile the capability to deploy a highly robust nationwide 5G network.

the general public, was particularly of interest as it represented the first major “four-to-three” merger in US mobile telecommunications. Based on many metrics, including revenue, consumer base, and geographic coverage, this was a historic merger proposal for the industry. A cursory examination of the industry structure (four operators), the market’s Herfindahl-Hirschman Index (HHI), and the impact of the transaction, provided a naïve inference of a highly concentrated and uncompetitive market. However, as the FCC and DOJ have noted, inferring competitiveness from concentration is not dispositive and can be counter to the public interest.³⁵

Like the HHI, the merger triggered the FCC’s unique concentration metric, the spectrum screen, which measures spectrum license concentration. When a single entity holds one third of the usable spectrum in any given area, it indicates that additional, more comprehensive competitive analysis is required. In several regions, the spectrum screen was triggered. On a national level, after the merger, the undifferentiated T-Mobile spectrum holdings would exceed the holdings of both AT&T and Verizon.³⁶

The HHI and the spectrum screen were first cuts—indicators that further analysis was appropriate. Extensive and comprehensive economic analysis followed. Of special focus for the FCC and the DOJ is what impact the merger would have on quality-adjusted consumer prices, investment, and innovation. The latter two items are particularly difficult to anticipate as they involve dynamic choices—choices that may change and

Id. at 10,619 ¶ 97.

³⁵ See, e.g., *Horizontal Merger Guidelines*, US DEPT. OF JUSTICE & FED. TRADE COMM’N § 2.1.3 (2010), <https://www.justice.gov/sites/default/files/atr/legacy/2010/08/19/hmg-2010.pdf> (noting that concentration levels may lead to a rebuttable presumption).

³⁶ See Applications of T-Mobile US, Inc. and Sprint Corporation for Consent to Transfer Control of Licenses and Authorizations, Description of Transaction, Public Interest Statement, and Related Demonstrations, 101 (June 18, 2018), [https://ecfsapi.fcc.gov/file/10618281006240/Public%20Interest%20Statement%20and%20Appendices%20A-J%20\(Public%20Redacted\)%20.pdf](https://ecfsapi.fcc.gov/file/10618281006240/Public%20Interest%20Statement%20and%20Appendices%20A-J%20(Public%20Redacted)%20.pdf) [hereinafter Public Interest Statement] (stating T-Mobile and Sprint’s combined “5G network will have more capacity than any network in history—more than three times the available capacity of the standalone T-Mobile and Sprint 5G networks combined in 2024.”).

grow depending on future events, including dynamic changes to competition as competitors reposition in response to the merger and/or consumer demand. So too, consumer prices may go through various changes as competition waxes and wanes, supply costs decrease, and new applications lead to new consumer demand patterns.³⁷ Indeed, experience has demonstrated that investments in next generation technologies have led to quality adjusted price decreases.³⁸

To sum up the first blush narrative—a move from four operators to three operators could lead to consumer price increases because of increased unilateral market power and/or an increase in the incentives and ability to cooperate on price with competitors. As in any merger, that simple narrative must be validated and balanced against countervailing merger specific benefits (for example, cost decreases, increased investment, spectral efficiency), and the dynamic impacts of innovation. In this case, the latter benefits were determined to outweigh potential price increases.³⁹

Interestingly, even though the FCC and the DOJ have different standards of

³⁷ See, e.g., Edward Carlson, *Cutting the Cord: NTIA Data Show Shift to Streaming Video as Consumers Drop Pay-TV*, NTIA (May 21, 2019), <https://www.ntia.doc.gov/blog/2019/cutting-cord-ntia-data-show-shift-streaming-video-consumers-drop-pay-tv> (demonstrating how the percentage of Internet users that viewed online videos grew from 45% in 2013 to 70% in 2017).

³⁸ Gus Hurwitz et al., *Comments of ICLE in Opposition to Petitions to Deny*, ICLE, 20 & n.54 (Sept. 17, 2018), <https://ecfsapi.fcc.gov/file/10918839300242/ICLE%20-%20Comments%20-%20TMobile-Sprint%20Merger.pdf> (finding studies showing price increases that follow mergers were actually offset by efficiency gains that led to lower prices). A price decrease from increased efficiencies is a lagging effect. T-Mobile gave a [six] year deployment timeline, T-Mobile/Sprint Transfer, *supra* note 1, at 10,589 ¶ 26, that would eventually show cost efficiencies. The FCC required the company to make certain consumer price commitments to negate potential price increases during the transition period before cost efficiencies might be realized. *Id.* at 10,644 ¶ 152. A two-year time period is often used by the DOJ to consider the merger's competitive effects; however, a longer time period is appropriate for the novel innovation, and the extensive CAPEX investment required for 5G. Hurwitz et al., *supra*, at 35.

³⁹ To mitigate potential price increases the merged entity was required to enter into various voluntary commitments including: (1) agreement not to raise consumer prices for three years; (2) an agreement to sell its existing prepaid business line, Boost, (3) an agreement to support the purchaser of Boost, DISH, in its attempt to build a national network, both facilities based and virtual. See T-Mobile/Sprint Transfer, *supra* note 1, at 10,618–19, ¶ 95–97.

review, in the analyses of both the potential consumer benefits of robust, national 5G networks were pivotal to the ultimate approval of the merger.⁴⁰ The 5G benefits were calculated in two ways. First the benefits of the merged T-Mobile gaining by merger the additional spectrum and cell towers it could use to quickly deploy 5G technology. Second, by voluntary commitment, the merged T-Mobile agreed to sell spectrum to DISH and to otherwise assist DISH in building a viable national 5G MVNO. DISH in turn made extensive commitments to build-out 5G to at least 70% of the U.S. population by June 2023.⁴¹

1. Can You Build a 5G Network?

In its analysis of the market, the competitive use of spectrum licenses purchased by merger, as opposed to open auction, is of paramount concern to the FCC.⁴² That concern is rooted in the FCC's statutory basis for merger review⁴³ and by the use of the

⁴⁰

[t]he United States considered (1) the Case 1:19-cv-02232-TJK Document Filed 07/30/19 "Network and In-Home Commitments" commitments made to the FCC by T-Mobile and Sprint, and (2) the "DISH Network 5G Buildout Commitments and Related Penalties" commitments made to the FCC by DISH. These documents were determinative in formulating the proposed Final Judgment, and the Department will file a notice with the Court that includes these documents to comply with 15 U.S.C. § 16(b).

United States et al. v. Deutsche Telekom AG et al., Proposed Final Judgment and Competitive Impact Statement, Notice, 84 Fed. Reg. 39,862, 39,879–80, (Aug. 12, 2019), <https://www.federalregister.gov/documents/2019/08/12/2019-17153/united-states-et-al-v-deutsche-telekom-ag-et-al-proposed-final-judgment-and-competitive-impact>; *see supra* note 2.

⁴¹ Letter from Jeffrey H. Blum, Senior Vice President, Pub. Policy & Gov't Affairs, DISH, to Donald Stockdale, Chief, Wireless Telecomm. Bureau, FCC 3 (July 26, 2019) [hereinafter Blum Letter] (determining a nationwide 5G network was more specifically defined as having download speeds equal to 35Mbps, 15,000 deployed 5G sites, and at least 30 MHz of DISH's downlink 5G spectrum averaged over all DISH 5G sites nationwide).

⁴² Thomas W. Hazlett, Roberto E. Muñoz, and Diego B. Avanzini, *What Really Matters in Spectrum Allocation Design*, 10 NW. J. TECH. & INTELL. PROP. 93, 95 (2012) (discussing the importance of the move to auctions from the prior less efficient distribution systems of comparative hearings and lotteries); *see* T-Mobile/Sprint Transfer, *supra* note 1, at 10,617–20 ¶¶ 94–99.

⁴³ *See supra* note 33.

spectrum screen in the first instance. Although the holders of spectrum licenses are determined by auction, the FCC determines the use. That means licenses for mobile networks are a subset of all available licenses. Moreover, not all licenses are the same. For example, they vary by region and by band—low, medium, and high—each with different propagation strengths. The analysis of spectrum as a crucial input to the industry is a central part of the FCCs merger analysis. Since the US government limits licenses, aggregating the licenses necessary for coverage may be impossible if mergers (or other cooperative behavior such as roaming contracts) are not permitted.

Turning back to the Sprint T-Mobile merger, recall our first naïve narrative, that four national facilities based mobile operators defined the premerger market and the merger would take the market down to three facilities based mobile operators. However, further review of the competitive strengths of Verizon and AT&T versus T-Mobile and Sprint highlighted the latter as highly innovative but competitively ineffectual.⁴⁴ Empirical analysis of T-Mobile’s famous “uncarrier” campaign ⁴⁵ showed this to be the case. In general, T-Mobile would take consumers from Sprint but few from AT&T and Verizon. In other words, to some extent, the premerger market was differentiated into low cost carriers (T-Mobile and Sprint) and higher cost carriers (Verizon and AT&T).⁴⁶ Such differentiation is pro consumer and arguably, a healthy form of competition but the question of 5G had a clear impact on the analysis. Would the lower cost competitors be able to invest and innovate to bring consumers into a 5G world or would their customers

⁴⁴ Unlike Sprint and T-Mobile, both AT&T and Verizon are part of companies that have wired networks and investments in media content permitting customers the option of a combined broadband experience. LEHR, *supra* note 6, at 21–22. In addition, with a “wired core and access network infrastructure, both Verizon and AT&T have easier access to the back-haul transmission resources that are critical for connecting base stations into the backbone network.” *Id.* at 22.

⁴⁵ “[I]n the market for nationwide 5G networks, this transaction amounts to a 2-to-3 merger, resulting in the creation of a viable, new market entrant, instead of the 4-to-3 transaction as characterized by opponents.” Hurwitz et al., *supra* note 38, at 40.

⁴⁶ Arguably the higher costs are associated with higher quality. See, e.g., *supra* note 45.

be left behind?⁴⁷ Would it be better to permit the merger and have more robust competition among three 5G competitors (New T-Mobile, Verizon, and AT&T) than just between two (Verizon and AT&T)? When framed that way, it might be more accurate to characterize this as a “two-to-three” merger rather than a “four-to-three” merger.

T-Mobile and Sprint have complimentary spectrum holdings, with Sprint having mid-band spectrum and T-Mobile having low-band spectrum.⁴⁸ This combination is expected to work interestingly well with new 5G technology. In addition, the planned build-outs for both companies appeared to complement each other. In other words, it did not appear on its face that the companies wished to merge only to nullify an existing competitor but rather to build something new.⁴⁹

2. A Toehold for New Competition

As is common in mergers, voluntary commitments were used to limit consumer harm in the wake of merger approval. The FCC and the DOJ both required T-Mobile to divest problematic holdings to a third-party buyer, in this case DISH. DISH first

⁴⁷ See T-Mobile/Sprint Transfer, *supra* note 1, at 10,585, ¶ 18; see also Public Interest Statement, *supra* note 36, at 18–20 (demonstrating how alone, T-Mobile lacks capacity and Sprint lacks coverage to deploy a 5G network). In addition, New T-Mobile’s spectrum portfolio “will allow New T-Mobile to transition subscribers to 5G much faster than either T-Mobile or Sprint could alone and will allow more spectrum (and a higher percentage of the company’s spectrum) to be dedicated to 5G than either company could manage on its own.” *Id.* at 36–37.

⁴⁸ T-Mobile/Sprint Transfer, *supra* note 1, at 10,580 ¶ 2. Sprint also has holdings of 2.5GHz spectrum that it is unable to fully utilize at this time. *Id.* at 10,619 ¶ 98. Where Verizon and AT&T have similar spectrum portfolios, New T-Mobile will have less mmWave but more 2.5 GHz spectrum. Hurwitz et al., *supra* note 38, at 36–37. This different mix of spectrum will lead to a differently architected 5G network. *Id.* With so much uncertainty surrounding the buildout of 5G, having different markets will likely encourage competition. *Id.*

⁴⁹ See T-Mobile/Sprint Transfer, *supra* note 1, at 10,585, ¶ 18. The capacity and competitive response resulting from the merger is expected to bring consumer benefits. Public Interest Statement, *supra* note 36, at 48. New T-Mobile’s network will rely on the combined low and high-band spectrum from T-Mobile and the mid-band spectrum from Sprint. *Id.* This will allow New T-Mobile to deploy 5G nationwide, even to rural areas. *Id.* In contrast, while AT&T and Verizon have low and mid-band spectrum, they have concentrated on building 5G networks that rely on millimeter wave spectrum. *Id.* New T-Mobile’s network will likely produce a competitive response from AT&T and Verizon and ultimately benefit the consumer. *Id.* at 50.

purchased the prepaid server of Sprint, Boost.⁵⁰ In addition, the FCC and the DOJ raised concerns around the need for a facilities-based operator that could service and support other MVNOs. A third-party buyer, DISH, again provided the solution.

DISH came to the table with significant unused holdings of spectrum assigned for general IoT use.⁵¹ Those holdings, with FCC permission, can now be used to support mobile virtual networks. To succeed as a competitor in the mobile network market (in particular the wholesale market), DISH would need additional spectrum licenses and transitional support with a functioning facilities-based operator. T-Mobile agreed to sell additional spectrum holdings to DISH and to provide six years of operating support (with strict price controls and other agreements) to provide a competitive leg up to DISH.

For its part, DISH made extensive promises to the FCC and the DOJ to build out a 5G network.⁵² There is no question that the 5G build-out promises were essential to the FCC's agreement to the transfer of licenses and waiver of use restrictions. In the prepaid market, there are fewer competitors⁵³ and an independent competitor deemed essential was (potentially) found in DISH. In addition, the promise to build a 5G network incorporating open radio access network technology (see below) was particularly interesting.

⁵⁰ See T-Mobile/Sprint Transfer, *supra* note 1, at 10,603 ¶ 60 (finding while there was some question from commentators, prepaid contract features are considered a service offered as part of the mobile/telephony broadband services market rather than a separate market); Hurwitz et al., *supra* note 38, at 29–30.

⁵¹ See T-Mobile/Sprint Transfer, *supra* note 1, at 10,669 n.696; Public Interest Statement, *supra* note 36, at 112–14 (stating “DISH has announced plans to use its spectrum and other resources to start competing in wireless with a focus on IoT followed by 5G wireless service”).

⁵² By June 2023, DISH commits to “[a]t least 70% of the U.S. population having access to download speeds equal to or greater than 35 Mbps, as verified by a drive test;” “[a]t least 15,000 5G sites deployed;” and “[a]t least 30 MHz of DISH’s downlink 5G spectrum averaged over all DISH 5G sites deployed nationwide.” Blum Letter, *supra* note 41, at 3.

⁵³ See T-Mobile/Sprint Transfer, *supra* note 1, at 10,582 ¶ 9. T-Mobile and Sprint compete with each other through their prepaid brands, Boost Mobile and Metro, and the merger would likely eliminate this competition. *Id.* Therefore, the companies were ordered to divest Sprint’s prepaid assets, Boost Mobile, Sprint branded prepaid, and Virgin Mobile to DISH. *Id.* at 10,582 ¶ 12, 10,591 ¶ 33.

B. Future Mergers

The high capital investments required to build 5G infrastructure, along with the dependency on cable for small cell technology, could lead US wireless companies to merge with cable companies in the future. Cable companies have access to fiber assets that could be useful to mobile wireless companies. However, it appears that cable companies are still unsure about the effectiveness of 5G and have taken a wait-and-see approach to merger decisions. Future merger reviews will no doubt be affected by the relative success of the T-Mobile merger and the voluntary build-out commitments made by the merged company.⁵⁴

III. REGULATORY MARKET DESIGN

As noted in the discussion of merger review, both the DOJ and the FCC requirements that T-Mobile divest spectrum, sell the prepaid mobile service Boost, and enter into contracts that would facilitate the growth of DISH as an MNO demonstrated the importance of maintaining competition. In general, they were permitting a merger while simultaneously laying the groundwork for a new market participant. Except in the case of mergers where such express mandates are frequent, this direct form of industry design is an unusual role for antitrust enforcers but not for the FCC. The FCC has statutory mandates to support the building of markets in ways that Congress has defined to be in the public interest. Examples include incentivizing investment, encouraging the buildout of rural broadband connections, creating a market for the sale of spectrum licenses, and facilitating growth and connectivity for telehealth and education purposes.

Although mandated to build or shape various markets, the law permits the FCC leeway on how to accomplish these directives. As is prudent, and arguably legally

⁵⁴ Alex Sherman, *Why T-Mobile's Deal with Sprint Could be the Warmup to a Wild Decade of Mergers*, CNBC (Feb. 12, 2020, 4:36 PM EST), <https://www.cnbc.com/2020/02/12/t-mobile-sprint-merger-is-a-warmup-to-more-wireless-cable-mergers.html>.

dictated, the FCC looks to economic analysis and competitive incentives to maximize consumer benefits with the most efficient deployment of government money and resources. Examples of economic analysis are evident in FCC decisions that implicate private investment incentives, rural connections, spectrum license allocation, and telehealth and education.

A. Rural Connections

Discussing building markets by regulation in a chapter that examines competition analysis and 5G may seem counterintuitive, but a great deal of the FCC's time and work is spent on developing policies to build-out private networks (especially high speed broadband networks) in low income, rural areas.⁵⁵ It is not surprising that gaps in network provision exist in these areas. Industries such as telecommunications that require high capital investments to provide the basic industry need certain levels of demand to justify the expense. This effect is further exacerbated in that rural areas not only have lower consumer demand, they are also sometimes in areas where geographic characteristics and lack of basic infrastructure make network development even more expensive than in densely populated urban areas. In competition terms, choosing not to build in rural areas is not a "market failure" as much as it is the rational choice of a prudent operator given the low expected return on investment in rural areas.

As a policy choice, Congress has instructed the FCC to encourage the deployment of broadband services to all Americans. This may be accomplished in many ways. For example, some countries have decided to provide public networks. This has proven an overall disappointing strategy⁵⁶ but has not been the choice of the US. The FCC has used

⁵⁵ Perhaps best known is the Connect America Fund that provides funds to increase voice and broadband connectivity in rural, insular, and high cost areas. See Connect America Fund ETC Annual Reports and Certifications, Report and Order, 80 Fed. Reg. 4445, 4446, ¶ 1-3 (Jan, 27, 2015), <https://www.govinfo.gov/content/pkg/FR-2015-01-27/xml/FR-2015-01-27.xml#seqnum4446> [hereinafter Connect America Fund].

⁵⁶ See, e.g., Bronwyn Howell, *Australia Introduces 'Broadband Tax' to Foreclose National Broadband Network*

carrot regulation to incentivize build-outs in rural and less developed areas. This is accomplished by providing government subsidies to participating market operators that, ideally, will change the return on investment calculation to justify a network build-out.

To calculate the amount of subsidy required to align private incentives with public objectives is a complex competition analysis. It includes the calculation of cost factors as well as the potential demand drivers.⁵⁷ In the world of mobile, these factors are complex and, among other things, include terrain factors, road access, spectrum licenses, population, population density, and current coverage footprints.

Beyond subsidies, as noted above, during a merger review, the FCC may ask companies to make a voluntary commitment to expand their network reach into rural areas for which they hold spectrum licenses. The goal is to capture for the underserved American population some of the private benefits of the merger. The drawback is that mergers in the market—particularly mergers the size and magnitude of the Sprint T-Mobile merger—are few and the network coverage of the merging parties will vary from merger to merger.

With the advent of 5G, there is no doubt that the cost of network densification in urban areas may decrease.⁵⁸ However, it is not clear that costs would decrease in rural,

Competitors, AEI (May 28, 2020), <https://www.aei.org/technology-and-innovation/australia-introduces-broadband-tax-to-foreclose-national-broadband-network-competitors/>. Australia's National Broadband Network (NBN), built by the government after the 2008 financial crisis, has shown that governments are "not the best owners of these networks" through "cost blowouts, delivery time overruns, technological restructuring, and overt politicization" in design and implementation. *Id.* When governments own telecommunications networks, they have the incentive and ability to monopolize the market and to use the network for other purposes. *Id.*

⁵⁷ Connect America Fund, *supra* note 55, at 4456 ¶ 74.

⁵⁸ For example, the use of small cells will likely increase costs initially due to the expected deployment of about 225,000 small cells by 2021. LEHR, *supra* note 6, at 14. However, softwarization, or "moving network functionality out of hardware and into software" may bring enhanced "flexibility, customizability, and performance" of the network and ultimately reduce costs. *Id.* at 15. Like with 4G LTE, MNOs will be able to shift from specialized hardware and therefore be able to separate radio and data network functionality and facilitate the move to IP data network. *Id.*

lightly populated areas. If the network is a new build (a green field), investment costs will still be high, and it is unclear that building direct to 5G would be lower in cost than transitioning to 5G from existing 4G.

A potential benefit to 5G deployment in rural areas is that 5G will rely on small cell sites as opposed to macro cell towers. This, however, could lead to increased pressure on local authorities to approve applications. This process could benefit from uniform and predictable application and approval processes with fast turnaround times.⁵⁹ Along with subsidies, voluntary commitments, and other mechanisms, the FCC has attempted to align certain local ordinances to match FCC objectives.

B. Spectrum Policy and 5G

When speaking of regulatory market development, the most significant regulation for broadcast technologies is spectrum policy. Spectrum is the essential input to all broadcast—broadcast television, radio, satellite, and mobile. The FCC has complete control over the distribution of licenses for nongovernmental use. The FCC not only approves the allocation of licenses—the “who” of the license—but it also takes a strict approach to the use permitted by the license—the “what” of the license. The manner these two are determined is vital to competitive and innovative growth.

The manner in determining the “who” of licenses has evolved overtime. Originally, the FCC held “comparative hearings” and made subjective determinations of which candidate was most deserving. The process, as might be expected, favored incumbents and stifled growth. Perhaps the greatest regulatory innovation of the FCC was the move to auctions to match the pre-designated license to its highest value user.⁶⁰

⁵⁹ *Investing in America’s Broadband Infrastructure: Exploring Ways to Reduce Barriers to Development: Before the S. Committee on Commerce, Science and Transportation*, 115th Cong. (67) (2017) (statement of Larry Downes, Project Director, Georgetown Center for Business and Public Policy). The FCC has accounted for and codified this concept. 47 C.F.R. § 1 (2018).

⁶⁰ Evan Kwerel & Alex D. Felker, *Using Auctions to Select FCC Licensees*, FCC OPP WORKING PAPER SERIES, 26-27 (May 1985), https://transition.fcc.gov/Bureaus/OPP/working_papers/oppwp16.pdf. A comparison

Although there has been tremendous increase in the allocative efficiency of licenses, the FCC's control of the use designation for licenses has seen less development. There have been changes—moves to flexible use licenses, reallocation of some fallow spectrum, and an incredibly successful “reverse auction” to move broadcast licensees off their underutilized spectrum holdings. The advent of 5G and the economic importance of mobile technologies in general have spurred additional innovations in reallocating spectrum holdings for mobile network use.⁶¹ One such move is the C-Band auction. As FCC Chairman Ajit Pai explains,

[t]he C-band is a 500-megahertz swath of spectrum from 3.7 GHz to 4.2 GHz. It's mostly used by fixed satellite companies to beam content to video and audio broadcasters, cable systems, and other content distributors. This mid-band spectrum is well-suited for 5G because it combines good geographic coverage and good capacity. And we can make available much of it because satellite companies don't need all 500 megahertz to continue providing the services they are providing today.⁶²

After facing some legal challenges from incumbents⁶³ the C-band auction is ready

between auctions, lotteries, and comparative hearings determined auctions were lower in private applications costs, delay costs, and FCC costs. *Id.* at 26.

⁶¹See, e.g., Drew FitzGerald, *White House to Retool Pentagon Airwaves for 5G Networks*, THE WALL STREET JOURNAL (Aug. 10, 2020 6:41PM, ET), <https://www.wsj.com/articles/white-house-to-retool-pentagon-airwaves-for-5g-networks-11597088639?mod=searchresults&page=1&pos=1>. The Trump administration recently developed a plan to allow the FCC to auction 100 megahertz of mid-band spectrum. *Id.* This mid-band spectrum currently used by the military for “naval radar systems, missile control and air traffic” is expected to be auctioned off in December 2021 allowing telecommunication companies to bid on the spectrum. *Id.* Mid-band spectrum is “ideal” for 5G because of its “extensive bandwidth and reach.” *Id.* According to FCC Chairman Ajit Pai, this is “a key milestone in securing United States leadership in 5G.” *Id.*

⁶² Statement by Ajit Pai, FCC Chairman, Save the Date (Feb. 6, 2020 2:50PM), <https://www.fcc.gov/news-events/blog/2020/02/06/save-date>. The FCC decided to make the lower 280 megahertz of the C-band (3.7GHz to 4.2 GHz) available for 5G use. Ajit Pai, *The Need for Speed*, FCC (July 15, 2020 1:50PM), <https://www.fcc.gov/news-events/blog/2020/07/15/need-speed>. This spectrum combines “good geographic coverage with good capacity.” *Id.* The FCC prioritized making C-band spectrum available quickly for 5G and will vote on the final draft procedures for the C-band auction scheduled for December 8, 2020. *Id.*

⁶³ See Gary Arlen, *C-Band Auction Plan Faces Challenges That May Affect December Start*, MULTICHANNEL NEWS (Feb. 7, 2020), <https://www.multichannel.com/news/c-band-auction-timetable-plan-faces-challenges>; see also Kelcee Griffis, *C-Band Lawsuits Seen as Unlikely to Derail FCC Auction*, LAW360 (June 25, 2020 4:01 PM EDT), <https://www.law360.com/articles/1286727/c-band-lawsuits-seen-as-unlikely-to-derail-fcc-auction> (stating companies, including PSSI Global Services LLC, sued the FCC stating the FCC's plan to auction

to proceed. The move reflects a federal push for 5G development and is part of a larger realignment to move both nongovernment and government licenses to higher valued uses.

C. Telehealth, Education, and 5G

Today, during the limitations brought by COVID-19, the importance of fast, robust, and capacity rich broadband connections have never seemed more important. The economy has moved online and some revealed advantages of teleworking, telemedicine, and online education, are sure to impact post-pandemic demand.

The FCC itself has moved aggressively to elevate personal and corporate connections in the fields of telemedicine and education in particular. For example, before COVID-19, the FCC had directed that \$100 million of the Universal Service Fund be allocated for building telehealth connectivity.⁶⁴ Since COVID-19, Congress directed the FCC to distribute \$200 million for telehealth, which it has done via its COVID-19 Telehealth Program.⁶⁵ For education services, the FCC has provided special spectrum licenses and government subsidized telecommunication services to qualifying applicants.⁶⁶ In both these markets, 5G may have an important role to play. In the health

part of the C-band spectrum will limit current C-band operators to 40% percent of the spectrum they currently use). It seems unlikely, however, that these lawsuits will stop the planned auction. *Id.*

⁶⁴ See Promoting Telehealth for Low-Income Consumers Notice of Proposed Rulemaking, WC Docket No. 18-213, 34 FCC Rcd. 5620, 5625 ¶ 15 (July 11, 2019), https://docs.fcc.gov/public/attachments/FCC-19-64A1_Rcd.pdf. The FCC proposed “a three-year Connected Care Pilot program [] with a \$100 million budget that would provide support for eligible health care providers to obtain universal service support to offer connected care technologies to low-income patients and veterans.” *Id.*

⁶⁵ See Promoting Telehealth for Low-Income Consumers COVID-19 Telehealth Program, Report and Order, WC Docket No. 18-213, 35 FCC Rcd. 3366, 3367 ¶ 2 (March 31, 2020), https://docs.fcc.gov/public/attachments/FCC-20-44A1_Rcd.pdf. The CARES Act provided the FCC with \$200 million to support health care providers and the FCC established the COVID-19 Telehealth Program to accomplish this task. *Id.* This is separate from the \$200 million used to enact the Connected Care Pilot Program. *Id.*

⁶⁶ Telecomm, Access Policy Div., *E-rate Schools & Libraries USF Program*, FCC, <https://www.fcc.gov/general/e-rate-schools-libraries-usf-program#:~:text=The%20schools%20and%20libraries%20universal,as%20part%20of%20a%20consortium> (“The discounts range from 20 percent to

care field, 5G will allow advancements in telemedicine that will likely become not only useful, but also necessary in the near future.⁶⁷ The faster speeds and reduced latency that 5G is expected to bring could not only make a doctor's appointment more enjoyable when the screen does not freeze, it may even make remote robotic surgery a possibility.⁶⁸ The FCC has started the process to incentivize the supply of telemedicine options and now it appears that a change in consumer demand might also be super charging the market.⁶⁹ In

90 percent of the costs of eligible services. E-rate program funding is based on demand up to an annual Commission-established cap of \$3.9 billion"). Interestingly, spectrum previously designated for use by educational entities was determined to be underused and the educational entity requirement was eliminated in part to permit 5G development. *Id.*

On July 11, 2019, the Commission released a Report and Order, FCC 19-62 [], in which it modernized the outdated regulatory framework for the 2.5 GHz band to make this swath of vital mid-band spectrum available for advanced wireless services, including 5G. The Report and Order gives incumbent entities more flexibility in how they use this spectrum and provides opportunities for other entities, including Tribal Nations, to access unused spectrum in this band. The Order eliminated restrictions on the types of entities that can hold licenses as well as educational use requirements, while preserving incumbent licensees' private contractual arrangements and provisions in existing leases. Further, the Order removed limitations on leases entered into on a going-forward basis under the Commission's secondary markets rules, which will create incentives to build out in rural areas.

Broadband Division, *Broadband Radio Service & Education Broadband Service*, FCC (Updated June 16, 2020), <https://www.fcc.gov/wireless/bureau-divisions/broadband-division/broadband-radio-service-education-broadband-service>; see *Transforming the 2.5 GHz Band, Report & Order*, WC Docket No. 18-120 (July 10, 2019), <https://docs.fcc.gov/public/attachments/DOC-358065A1.pdf>.

⁶⁷ Prieger, *supra* note 10, at 7. Advances in telemedicine could also increase access in rural areas, while creating more employment opportunities for remote workers. *Id.* As wearable devices become more common for health care, such as heart rate monitors and glucose monitoring devices, patients will likely benefit from a faster network that will provide more reliable service. *From Home Care to Health Care*, ERICSSON CONSUMERLAB, (June 2020), https://www.ericsson.com/49e91e/assets/local/reports-papers/consumerlab/reports/2017/healthcare-to-homecare_screen_aw2.pdf.

⁶⁸ Randal Kenworthy, *The 5G and IoT Revolution is Coming: Here is What to Expect*, FORBES (Nov. 18, 2019, 10:00AM EST), <https://www.forbes.com/sites/forbestechcouncil/2019/11/18/the-5g-iot-revolution-is-coming-heres-what-to-expect/#c66c5906abf6>. A doctor in Sanya, China reportedly used 5G remote surgery to insert a stimulation device in a patient's brain with Parkinson's disease, who was in Beijing, almost 1,900 miles away. Caroline Frost, *5G is Being Used to Perform Remote Surgery from Thousands of Miles Away, and it Could Transform the Healthcare Industry*, BUSINESS INSIDER, (Aug. 16, 2019, 1:49AM), <https://www.businessinsider.com/5g-surgery-could-transform-healthcare-industry-2019-8>.

⁶⁹ See Statement of Brendan Carr, Commissioner of the FCC, *Promoting Telehealth for Low-Income Consumers*, Notice of Proposed Rulemaking, WC Docket No. 18-213 (July 10, 2019), <https://www.fcc.gov/document/fcc-proposes-100-million-connected-care-pilot-telehealth-program/carr-statement> (where Commissioner Carr

addition to telemedicine, now more than ever, it is obvious how important home broadband connections are for the educational field.⁷⁰ High-speed internet access facilitated by 5G could make the educational experience more enjoyable and efficient by providing smooth communication without delays.⁷¹

IV. MONOPOLIZATION VERSUS INCREASED COMPETITION AND NETWORK DECENTRALIZATION

The ever-present concern of antitrust is the anticompetitive use of market power. Market power may be exhibited by a company's ability to charge supracompetitive prices or to decrease output to facilitate higher pricing. The coming of 5G mobile broadband is set to have a potentially significant impact in the broadband marketplace. Three potential changes come easily to mind. First, the entrance of 5G will have a direct impact on the high-speed broadband markets. Second, 5G may provide additional competition in both MNO and broadband markets by creating the conditions necessary for an increase in MVNOs. Finally, and most exciting, 5G allows for the decentralization of the mobile network. That decentralization may permit greater end-user flexibility and differentiation but more immediately will permit increased opportunities for network software designers.

The importance to the US economy of broadband access is not only self-evident, it is embedded in the Communications Act.⁷² It is the hope that broadband not only be

stated “[g]iven the significant cost savings and improved patient outcomes associated with connected care, we should align public policy in support of this movement in telehealth.”). Commissioner Carr compared the move as going from “Blockbuster to Netflix.” *Id.*

⁷⁰ See Peter Linder, *Putting the Spotlight on 5G in Rural Areas*, ERICSSON BLOG (July 28, 2020), <https://www.ericsson.com/en/blog/2020/7/5g-in-rural-areas-spotlight>; *A Personalized, Interactive K-12 Education Powered by the 5G Era*, FORBES, (Oct. 21, 2019 4:48 PM EDT), <https://www.forbes.com/sites/tmobile/2019/10/21/a-personalized-interactive-k-12-education-powered-by-the-5g-era/#1bfef8f27d54>.

⁷¹ See, e.g., *supra* note 70.

⁷² 47 U.S.C. § 1301(1). Congress' findings show “the deployment and adoption of broadband technology has resulted in enhanced economic development and public safety for communities across the Nation.” *Id.*; see also *Connecting America: The National Broadband Plan*, FCC 3, <https://transition.fcc.gov/national->

available, but that it is of high quality and competitive prices. In other words, the competitive market for broadband is important to homes and businesses across the nation. Historically DSL and cable operators have dominated this market, but if the three major mobile operators become competitive in this market it could be a game changer. Indeed, given the attractiveness of mobile access, with increased speed and network reliability, mobile may soon become the dominant player in broadband.⁷³

As previously noted, perhaps the most interesting development of 5G based networks is the potential to aggressively decentralize the hardware and software markets that provide the 5G technology.⁷⁴ Decentralization is always of interest in antitrust analysis because many potential antitrust violations are associated with centralization and increases in market power. A market power increase might come through outright monopolization by one firm, or by cooperation between and among firms. An example of the latter might be a price-fixing agreement among competitors (a per se antitrust violation) or a benign exclusive deal that increases market share of one supplier and forecloses that opportunity to competitors. The less centralized a telecommunications network, the more dispersed its supply chain. The new technology innovation to look for is O-RAN, open radio access networks.

In today's RAN marketplace, there are four dominant equipment manufacturers—Ericsson, Huawei, Nokia, and Samsung.⁷⁵ A network operator may select just one

broadband-plan/national-broadband-plan.pdf (where Congress mandated the FCC to develop the “National Broadband Plan” to ensure Americans have “access to broadband capability”).

⁷³ See *supra* note 6.

⁷⁴ *Why Edge Computing is Key to 5G in 2020*, LANNER, (Jan. 2, 2020), <https://www.lanner-america.com/blog/why-edge-computing-is-key-to-5g-in-2020/>. 5G could benefit from edge computing which decentralizes the computational power from a central location and brings it closer to resources on the “edge” and closer to the end-user. *Id.*

⁷⁵ Tews, *supra* note 22. Nokia, Ericsson, Samsung, and Huawei are the major RAN, 5G players in the world. *Id.*; see also *Telecom Equipment Market Leaders in 2019*, TELECOM STATISTICS, (Mar. 2, 2020), <https://www.telecomlead.com/telecom-statistics/telecom-equipment-market-leaders-in-2019-94293> (stating in 2019, the top four Telecom Equipment Market Leaders were Huawei with a share of 28%, Nokia

equipment system, or it may combine two, but once selected, that is the only type of gear the operator can use. The equipment includes not only the radio hardware, but the software for the hardware. O-RAN decouples the software from the hardware. One of the advantages is that as new services are demanded by consumers, the network operator can just update the software without having to change the hardware. Another advantage is the development of a less centralized software provider marketplace.⁷⁶

This mixing and mingling of different vendors for software and hardware decreases the bargaining power of any of the four major equipment makers. It also opens up opportunities for innovation in services, security, and efficiencies.

CONCLUSION

5G opens up a huge array of possibilities from simply faster video download speeds to possibly self-driving cars. While we can and are expecting great things from 5G, the bottom line is there is still much uncertainty regarding what 5G technology will enable and how a roll out will actually look. The benefits of the move to 5G can be sorted into two broad categories. The first benefits will come with direct and rapid increases in competition for broadband services. This growth in competition is set to invigorate the MNO, MVNO, and equipment manufacturing markets and move outward to service industries that rely on these network industries. The second category for benefits is those that flow from the indirect impacts of the new technologies. These benefits include those that come from increased competition (such as quality increases and price decreases), greater spread and densification of coverage, growth in IoT technologies, increased

with a share of 16%, Ericsson with a share of 14%, and ZTE with a share of 10%, closely followed by Cisco with a share of 7%).

⁷⁶ Tews, *supra* note 22. Typically, a service provider will purchase the entire system (software and hardware) from one or two manufacturers, however this limits the types of gear the provider can use to those manufacturers. *Id.* ORAN could allow service providers to obtain the software and hardware from different, and even multiple, vendors. *Id.*

practicality of telehealth and online education opportunities.

Prudent competition analyses by both antitrust enforcers and regulators will continue to include the potential impact of technological innovation in 5G. To do otherwise, to impose too much regulation or antitrust scrutiny too early about the progress of an underdeveloped technology, would discourage future innovation and the investment necessary to realize the full benefits of a 5G network.

Antitrust and Ex-Ante Sector Regulation

Bruce H. Kobayashi & Joshua D. Wright

INTRODUCTION

There have been many calls to replace or at least supplement the existing system of litigation based antitrust under the rule of reason with ex-ante regulation as a way to control anticompetitive behavior by large technology and platform firms.¹ This chapter first analyzes and explains some potential ways to distinguish ex-ante sector regulation from antitrust and competition systems based upon ex-post liability. While many have proposed that ex-ante regulation should be used in lieu of current litigation based antitrust law, this narrative is a false one—antitrust law and its institutions, throughout its history and including the present, has incorporated features of ex-ante regulations in both its laws and institutions.

Indeed, many of the proposed ex-ante approaches use traditional antitrust concepts that incorporate some components of proposals for ex-ante regulation. These include the use of ex-ante determinations of inherently and commonly unreasonable practices subject to per se condemnation, use of quick look or truncated analyses under the rule of reason, procedural changes dependent on prior information, such as the adoption of antitrust presumptions and changes to the standard of proof and the burden of proof.² Indeed, the recent history of the antitrust laws and the incorporation of economics into antitrust law has resulted in the replacement of unsupported presumptions and per se rules with a rule of reason analysis that evaluates the impact of

¹ For a detailed description of regulatory proposals, see Marco Cappai & Giuseppe Colangelo, *Navigating the Platform Age: The “More Regulatory Approach” to Antitrust Law in the EU and the U.S.* (Stanford-Vienna Transatlantic Tech. L.F. Working Paper No. 55, 2020), https://www-cdn.law.stanford.edu/wp-content/uploads/2020/04/cappai_colangelo_wp55.pdf.

² *Id.*; see, e.g., Murat C. Mungan & Joshua D. Wright, *Optimal Standards of Proof in Antitrust* (July 30, 2019). George Mason L. & Econ. Research Paper No. 19-20, 2019), <https://ssrn.com/abstract=3428771> (discussing optimal standards of proof).

a challenged behavior on competition. However, antitrust law also recognizes that not all antitrust inquiries require the same degree of fact-gathering and analysis, and currently incorporates truncated forms of analysis under the rule of reason and presumptions when supported by the evidence.³

Other proposals would go beyond the existing bounds of antitrust and use an approach based on ex-ante sector regulations used to control natural monopolies.⁴ This chapter focuses specifically on the choice to use sector-based regulation and/or antitrust to regulate competition and the implications that follow from that choice. In theory, the initial assignment of tasks between antitrust and sector regulation should reflect the comparative advantage of each regulatory approach, including the competence of the institutions set up to administer the regulatory regime.⁵ The chapter applies this principle to explain why antitrust is a relatively poor framework for price regulation and affirmative duties to deal with rivals. Based upon comparative advantage, regulation of price and affirmative duties to deal are best left to sector regulators with industry specific expertise enforcing specific ex-ante regulations containing specific duties.

We then analyze the legal and economic interaction between the antitrust laws and sector regulation. In particular, when sector regulation and the antitrust laws are used to regulate competition, the two regimes can generate conflicts. In such cases, the application of antitrust law can be limited by the implied immunity doctrine and similar judge made regulatory immunities. Similar limits on the antitrust laws apply to conflicts between the federal antitrust laws and state regulations, which are controlled by the state action doctrine. While the implied immunity doctrine and many state action cases often

³ See Timothy J. Muris, *The Rule of Reason After California Dental*, 68 ANTITRUST L.J. 527, 532–38 (2000).

⁴ See Cappai & Colangelo, *supra* note 1, at 7, 12, 22.

⁵ See Dennis W. Carlton & Randall C. Picker, *Antitrust and Regulation*, in ECONOMIC REGULATION AND ITS REFORM: WHAT HAVE WE LEARNED? 25, 33 (Nancy L. Rose, ed., 2014), <https://www.nber.org/chapters/c12565.pdf>.

illustrate the case where competition displacing regulations substitute for antitrust law, antitrust and sector regulation also can serve as complements.⁶ Antitrust law can be applied to control deregulated portions of an industry and can serve to fill unspecified gaps in the regulation. Antitrust law is also used to constrain industry capture and other public choice problems generated by sector regulations.

However, even in the case of antitrust and regulation as complements, limits on antitrust are still important, as it is critical that each regulatory approach is limited to operate in a way that supports its ex-ante assigned function. The importance of sensible limits on antitrust and sector regulation is magnified by the Court's expansion of the implied antitrust immunity doctrine that forces antitrust and regulation to function as substitutes in potential overlap areas. Moreover, achieving the right balance between antitrust and regulation in practice can be a challenging, long, and error filled process. The chapter illustrates the frictions in the economic and legal relationship between antitrust and regulation by examining the application of the antitrust laws to the conduct of pharmaceutical companies whose patents have been challenged under Paragraph IV of the Hatch-Waxman Act. The Hatch-Waxman Act represents one of the most visible forms of sector regulation of innovation. In particular, the Act, along with state generic substitution laws (GSLs), attempts to craft a specific solution to the use/creation tradeoff through specific modifications of the patent laws and the competitive relationship between branded drugs and firms producing generic versions of the drug. The imperfect regulatory structure generates incentives which are not intended or foreseen by those drafting the statute, which is first addressed through antitrust litigation, and then legislation to reallocate the assignment of tasks between antitrust and regulation. The

⁶ Howard A. Shelanski, *The Case for Rebalancing Antitrust and Regulation*, 109 MICH. L. REV. 683 (2011); see generally Charles D. Kolstad, Thomas S. Ulen & Gary V. Johnson, *Ex Post Liability for Harm vs. Ex Ante Safety Regulation: Substitutes or Complements?* 80 AM. ECON. REV. 888 (1990); Steven Shavell, *A Model of the Optimal Use of Liability and Safety Regulation*, 15 RAND J. ECON. 271 (1984); see also Kobayashi & Wright, *infra* note 76.

history of the Act and State GSL illustrates the complex and evolving relationship between imperfect regimes as well as the difficulty of designing beneficial regulatory structures to control competition.

I. EX-ANTE REGULATION VERSUS EX-POST ANTITRUST

As noted in the introduction, a common theme in many proposals to improve the regulation of competition in the 21st Century highlight the use of what their proponents label ex-ante regulatory regimes.⁷

Thus, it is critical, as a preliminary matter, to define the essential features of ex-ante regulation that differentiate this approach from traditional litigation-based antitrust enforcement. Table 1 lists several ways in which ex-ante regulation and ex-post liability approaches might differ. However, as will become clear, many of these identified differences between ex-ante regulation and ex-post litigation are less substantial in practice and of limited use as an organizing principle. As we will demonstrate, antitrust law already incorporates many features of ex-ante regulation.⁸ Instead, we find that the best approach to distinguish between antitrust and regulation, following Carlton and Picker (2014), is one that focuses upon substantive differences between antitrust and regulation, as well as the institutional competence of the regulator tasked to administer the regime.

⁷ See, e.g., Eur. Comm'n, *Single Market – New Complementary Tool to Strengthen Competition Enforcement*, <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12416-New-competition-tool> (last visited Oct. 14, 2020); MAJORITY STAFF OF H. COMM. ON THE JUDICIARY, 116TH CONG., INVESTIGATION OF COMPETITION IN DIGIT. MKTS. 386–87 (2020), https://judiciary.house.gov/uploadedfiles/competition_in_digital_markets.pdf [hereinafter House Majority Report]; STIGLER COMM. ON DIGIT. PLATFORMS, CHICAGO BOOTH SCH. OF BUS., FINAL REPORT 32 (2019), <https://www.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf>.

⁸ See, e.g., Kevin Coates, *Ex-Post and Ex-Ante Rules*, 21ST CENTURY COMPETITION (Aug. 6, 2020) <http://www.twentyfirstcenturycompetition.com/2020/08/ex-ante-and-ex-post/> (suggesting that the terms ex-ante regulation and ex-ante competition are frequently used but are “neither accurate nor particularly helpful to the discussion”).

Table 1

	Ex-Ante or Prior Regulation	Ex-Post Liability
Timing: Regulatory Instrument	Monitor Inputs and other ex-ante measurable metrics	Monitor Output/Effects
Timing: Basis for calculating corrective tax or remedy	Expected Harm or Pigouvian Taxes (Prices), Injunctions and Deterring Penalties (Sanctions)	Ex-post remedies: Damages, Disgorgement
Rules versus Standards	Ex-Ante Specific Rules, Duties	Ex-Post Enforcement of General Standards
Regulatory expertise and administration	Sector Specific	Generalist

A natural starting point for many analyses of the difference between ex-ante regulation and ex-post liability is timing. Ex-ante regulation attempts to impose its corrective incentives on the activity of economic actors before or at the same time it occurs. As a result, the two approaches differ in both the instrument and remedy used to generate incentives. Ex-ante regulation approaches focus on input levels⁹ and other ex-ante measurable metrics to impose incentives (e.g., Pigouvian taxes) or to directly regulate activity levels.¹⁰ In contrast, litigation-based liability systems focus on outputs or outcomes and use harm-based damages to shape incentives that alter the firm's behavior or activity level. In a frictionless world void of transactions and information costs, these two systems are capable of generating identical incentives.¹¹ However, in real economies with positive transactions and information costs, the performance of the two systems will differ. Because ex-post liability systems evaluate the activities of firms later in time after information on the effects of an activity has been revealed, the information advantage

⁹ See Donald Wittman, *Prior Regulation vs. Post Liability: The Choice Between Input and Output Monitoring*, 6 J. LEGAL STUD. 193 (1977).

¹⁰ See Brian Galle, *In Praise of Ex-Ante Regulation*, 68 VAND. L. REV. 1715 (2015).

¹¹ See *id.*; see generally Ronald Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

favors the use of ex-post liability systems when there is heterogeneity that is known to the regulated firms (but not the regulator) ex-ante. But this advantage may not be important when such heterogeneity is minimal or when it cannot be predicted ex-ante by the regulated firms.¹² Moreover, the absence of effective ex-post remedies may favor the ex-ante approach even with heterogeneity.¹³

While this literature successfully identifies reasons for the use and timing of particular regulatory instruments, it is less clear that it usefully distinguishes between antitrust and many proposals for the ex-ante regulation of competition. Under this definition based upon timing and regulatory instruments, there are prominent examples of ex-ante regulation of competition within antitrust law. Consider the requirements for premerger notification under the Hart-Scott-Rodino Act (HSR Act) in the U.S.,¹⁴ and similar requirements in other jurisdictions around the world.¹⁵ Under the HSR Act, parties in covered transactions must notify the U.S. antitrust agencies of the proposed transactions, file certain information, and wait a specified time period before consummating certain mergers or acquisitions.¹⁶ Prior to the enactment of the HSR act, many challenges to mergers occurred after the merger had been consummated. Agencies often lacked the evidence to prove that a transaction would lessen competition prior to the consummation of the merger, making it difficult to obtaining preliminary injunctions to prevent the parties from merging.¹⁷ While challenges to consummated mergers may

¹² Cf. Galle, *supra* note 10; see generally Louis Kaplow, *The Value of Accuracy in Adjudication: An Economic Analysis*, 23 J. LEG. STUD. 307 (1994).

¹³ See Galle, *supra* note 10, at 1728–29.

¹⁴ Hart-Scott-Rodino Antitrust Improvements Act of 1976, 15 U.S.C. § 18a (§ 7a of the Clayton Act).

¹⁵ See INT’L CHAMBER OF COMM., ICC RECOMMENDATIONS ON PRE-MERGER NOTIFICATION REGIMES 1–3 (2015), <https://iccwbo.org/content/uploads/sites/3/2017/06/ICC-Recommendations-on-Pre-Merger-Notification-Regimes.pdf> (listing the various types of premerger notification regimes worldwide).

¹⁶ See 16 C.F.R. §§ 801–03.

¹⁷ Ronald N. Johnson & Allen M. Parkman, *Premiermer Notification and the Incentive to Merge and Litigate*, 7 J.L. ECON. & ORG. 145, 146–48 (1991).

allow for the direct observation of the anticompetitive effects of the merger and mitigate the agencies' information disadvantages,¹⁸ the antitrust authorities were frequently unable to restore competition lost to a consummated anticompetitive merger due to the inability to secure timely and effective remedial relief.¹⁹

The premerger notification program under the HSR Act addressed the weaknesses of merger control based on ex-post litigation by facilitating ex-ante evaluation and regulation of certain mergers and acquisitions. First, the HSR Act narrows the information gap that would otherwise exist between pre- and post-merger evaluations of the effects of a merger. The Act requires that information be filed along with the initial HSR notification and allows the agencies to request additional information and documentary materials when they determine further inquiry is required. This facilitates a more informed ex-ante evaluation of the proposed transaction and allows the agencies to more accurately distinguish between anticompetitive transactions and those that are procompetitive or benign. Second, the waiting period and notification requirements allow the antitrust agencies to evaluate mergers before they are consummated. This allows the government to obtain preliminary injunctions to prevent consummation of the merger and facilitates the use of ex-ante structural remedies. The ability to obtain ex-ante remedies reduces the problems caused by the agencies' inability to restore competition after the consummation of anticompetitive mergers due to the lack of effective ex-post remedies.²⁰

The second factor listed in Table 1 used to distinguish ex-ante and ex-post

¹⁸ See John M. Yun, *Are We Dropping the Crystal Ball? Understanding Nascent & Potential Competition in Antitrust*, 104 MARQ. L. REV. (forthcoming 2020), <https://ssrn.com/abstract=3698210>.

¹⁹ See Kenneth G. Elzinga, *The Antitrust Law: Pyrrhic Victories?*, 12 J.L. & ECON. 43, 53–66 (1969).

²⁰ See Johnson & Parkman, *supra* note 17, at 154–59; see generally FED. TRADE COMM'N, THE FTC'S MERGER REMEDIES 2006-2012: A REPORT OF THE BUREAUS OF COMPETITION AND ECONOMICS 18–20 (2017), https://www.ftc.gov/system/files/documents/reports/ftcs-merger-remedies-2006-2012-report-bureaus-competition-economics/p143100_ftc_merger_remedies_2006-2012.pdf.

approaches is a “rules versus standards” distinction.²¹ The standard analysis of ex-ante rules versus ex-post standards incorporates the timing tradeoffs discussed above—optimal ex-ante rules often require a more complete ex-ante determination of the specific contours of the rule and the consequences of violating the rule, while ex-post standards and the remedy to be applied are given specific content only after an individual or firm acts and relevant information is revealed.²² As noted above, which of these approaches generates higher social welfare in a particular setting will depend upon information costs—including the government’s cost of acquiring and disseminating information about the applicable rule or standard to the public, and the costs of discerning whether not an individual or firm has violated the rule or standard. Moreover, these costs can change over time. For example, in dynamic industries, rapid innovation can make carefully crafted rules obsolete. In contrast, ex-post adjudications under a standard can evolve to changes and are less prone to obsolescence.²³

There is a second important dimension to the rules versus standards distinction relating to the optimal level of complexity and detail contained in the two approaches. In many analyses, this dimension is suppressed by the assumption that the relevant analysis is between simple bright line rules and more complex standards. Indeed, many of the proposals to replace “ex-post” litigation based antitrust are calls to establish lists of prohibited practices (blacklists) for certain firms (e.g., firms that meet a structural presumption or are identified as a gatekeeper).²⁴ Such bright line rules establishing conduct as illegal per se would replace complex and costly determinations of liability based upon evidence of a business practice’s anticompetitive effects.

²¹ See generally Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557 (1992) (“The central factor influencing the desirability of rules and standards is the frequency with which a law will govern conduct.”).

²² Cf. *id.* at 568–85 (discussing the tradeoffs associated with ex-ante rules versus ex-post standards).

²³ See Geoffrey Manne, *Error Costs in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

²⁴ See, e.g., Eur. Comm’n, *Single Market Tool*, *supra* note 7; House Majority Report, *supra* note 7.

But these proposals do not go outside the current or historical bounds of the antitrust laws and do not provide a useful basis for distinguishing between antitrust and regulation. The antitrust laws already recognize practices as being so inherently and commonly unreasonable that courts might dispense with an elaborate analysis and condemn them as illegal *per se*. Thus, the identification of such practices, including the identification of new practices based on strong theoretical and empirical evidence, would be consistent with the historical operation of the antitrust laws and easily accommodated by the current evidence-based system of antitrust laws. The Court has also maintained and developed truncated forms of analysis under the rule of reason, recognizing that not all antitrust inquiries required the same degree of fact-gathering and analysis.²⁵ Such an approach is broadly consistent with an economic approach to the design of the antitrust laws that seeks to balance the costs of errors and the costs of administration.²⁶

In contrast, the outright condemnation or blacklisting of practices or behaviors without such evidence would not rest easily with the current evidence-based system of antitrust laws.²⁷ Rather, the latter approach would be consistent with the abandoned approach taken during the early history of the U.S. antitrust laws, where the *per se* categorization was used extensively to condemn many procompetitive practices. In contrast, much of the recent evolution of the U.S. antitrust laws involved replacing

²⁵ See *United States v. Addyston Pipe & Steel Co.* 175 U.S. 211 (1899); *Standard Oil Co. v. United States* 221 U.S. 1, 60 (1911); *Chicago Board of Trade v. United States* 246 U.S. 231, 238 (1918). The Court has also applied a quick look analysis in three cases: *FTC v. Indiana Federation of Dentists*, 476 U.S. 447 (1986); *NCAA v. Board of Regents*, 468 U.S. 85, 100-101 (1984); *Nat'l Soc'y of Prof'l Eng'rs v. United States*, 435 U.S. 679, 692-693 (1978); see also Timothy J. Muris & Brady P.P. Cummins, *Tools of Reason: Truncation Through Judicial Experience and Economic Learning*, 28 ANTITRUST, Summer 2014, at 46.

²⁶ See Manne, *supra* note 23.

²⁷ See *Cal. Dental Ass'n v. FTC*, 526 U.S. 756, 781 (1999) (rejecting the use of quick look analysis, holding: "What is required, rather, is an enquiry meet for the case, looking to the circumstances, details, and logic of a restraint."); Geoffrey A. Manne, Hal Singer & Joshua D. Wright, *Antitrust Out of Focus: The FTC's Myopic Pursuit of 1-800 Contacts' Trademark Settlements*, ANTITRUST SOURCE, Apr. 2019, at 1, <https://ssrn.com/abstract=3304769>.

existing and unsupported presumptions and per se rules with a rule of reason analysis that evaluates the impact of a challenged behavior on competition.²⁸

Consider, for example, the recent proposal to prevent platform firms from selling their own products if they compete with offerings from non-vertically integrated sellers.²⁹ But economic evidence from forced vertical disintegration in other industries shows that similar proposals to force vertical disintegration to protect competitors reduce consumer welfare. For example, evidence from state laws that prevented gasoline refiners from operating retail gas stations found that these laws raised prices and lowered the quality of retail gasoline services in these states relative to states that allowed the use of vertical integration.³⁰ Moreover, recent evidence from the recent voluntary exit of refiners from gasoline retailing also show the opposing unilateral price effects involved in vertical integration and de-integration consistent with the approach contained in the 2020 U.S.

²⁸ See Bruce H. Kobayashi & Timothy J. Muris, *Chicago, Post-Chicago, and Beyond: Time to Let Go of the 20th Century*, 78 ANTITRUST L.J. 147, 152–53 (2012) (noting that the incorporation of economics into antitrust law resulted in the Court’s rejection of broad rules of per se illegality); see also *State Oil v. Kahn*, 522 U.S. 3, 21 (1997) (maximum resale price maintenance not per se illegal and subject to the rule of reason, with the Court noting that it has reconsidered its decisions construing the Sherman Act when the theoretical underpinnings of those decisions are called into serious question). See generally *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 900 (2007) (minimum resale price maintenance subject to the rule of reason); *Illinois Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 42–43 (2006) (no presumption of market power or rule of per se illegality for patent tie-ins); *State Oil Co. v. Khan*, 522 U.S. 3, 17 (1997) (maximum resale price maintenance subject to the rule of reason); *Cont’l T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 58 (1977) (territorial restrictions subject to the rule of reason); *Broad. Music, Inc. v. CBS, Inc.*, 441 U.S. 1, 19–25 (1979) (mandatory license pools subject to the rule of reason); *FTC v. Actavis, Inc.*, 570 U.S. 136, 159 (2013) (patent infringement settlements comprising a “reverse payment” generally subject to the rule of reason).

²⁹ See, for example, the proposals for forced de-integration of platform firms discussed in Elizabeth Warren, *Here’s How We Can Break Up Big Tech*, MEDIUM (Mar. 8, 2019) <https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c>; House Majority Report at 377–81.

³⁰ See John M. Barron & John R. Umbeck, *The Effects of Different Contractual Arrangements: The Case of Retail Gasoline Markets*, 27 J.L. & ECON. 313 (1984); Michael G. Vita, *Regulatory Restrictions on Vertical Integration and Control: The Competitive Impact of Gasoline Divorcement Policies*, 18 J. REGUL. ECON. 217 (2000); Asher A. Blass & Dennis W. Carlton, *The Choice of Organizational Form in Gasoline Retailing and the Cost of Laws That Limit That Choice*, 44 J.L. & ECON. 511 (2001) (retail prices increase due to the effect of double marginalization).

Department of Justice and Federal Trade Commission Vertical Merger Guidelines.³¹

In the more general case, the simple rules versus complex standards dichotomy may not usefully differentiate between ex-ante regulation and ex-post liability either. Rules can be complex, and standards can be enforced using simple rules. The evolution of merger enforcement illustrates both of these points. The principal U.S. antitrust law governing mergers and acquisitions, Section 7 of the Clayton Act, sets out a broad standard for the evaluation of mergers, prohibiting mergers and acquisitions “where, in any line of commerce or in any activity affecting commerce in any section of the country, the effect . . . may be substantially to lessen competition, or to tend to create a monopoly.”³²

However, at times, both the Court’s precedents and the Merger Guidelines promulgated by the federal antitrust agencies reflected the use of relatively simple rules based upon market concentration to guide merger enforcement. Under the Court’s existing precedent in *Philadelphia National Bank* (PNB), the plaintiff makes its prima facie case by showing that the proposed transaction would result in the merged firm controlling 30 percent of the market involved in the merger or acquisition. When the Court’s PNB structural presumption applies, it makes evaluation of a merger under Section 7 of the Clayton act simpler, with the Court noting that:

This intense congressional concern with the trend toward concentration warrants dispensing, in certain cases, with elaborate proof of market structure, market behavior, or probable anticompetitive effects. Specifically, we think that a merger which produces a firm controlling an undue percentage share of the relevant market, and results in a significant increase in the concentration of firms in that market is so inherently likely to lessen competition substantially that it must be enjoined in the absence of evidence clearly showing that the merger is not likely

³¹ Daniel Hosken & Christopher Taylor, *Vertical Disintegration: The Effect of Refiner Exit From Gasoline Retailing on Retail Gasoline Pricing* (FTC Bureau of Econ. Working Paper No. 344, 2020) (showing that refiner exit from retailing resulted in downward pricing pressure from the reduction in prices to non-integrated retailers, and upward pricing pressure resulting from double marginalization). See generally U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, VERTICAL MERGER GUIDELINES (2020).

³² 15 U.S.C. § 18.

to have such anticompetitive effects.³³

The problem with the PNB Court's structural approach is that market structure is not a reliable starting point for the analysis of a merger's effect on competition and thus is unlikely to effectuate the goals of the standard set out in Section 7 of the Clayton Act.³⁴ And while the Court has replaced similar misguided per se rules under Section 2 of the Sherman Act with the rule of reason over the same time period,³⁵ the Court's misguided PNB structural presumption is still good law due to the Court's decades-long hiatus from merger law.³⁶

In contrast, the evolution of merger enforcement at the agencies over the past half century illustrates the evolution toward the use of effects-based tools that attempt to effectuate the Section 7 standard. In particular, the HSR Act's premerger notification requirements discussed above, together with the regularized practice of evaluating a large volume of merger transactions each year generated a constant demand at the agencies for resources and tools to evaluate proposed transactions. The existence of hundreds of lawyers and economists in two federal agencies whose primary duties are to evaluate proposed transactions in a short time period likely contributed to the evolution of the agencies' approach to merger enforcement, both in practice and in written guidelines. While the U.S. Department of Justice's initial 1968 Merger guidelines, like the Court, incorporated the idea that horizontal mergers that increased market concentration were "inherently likely to lessen competition,"³⁷ the antitrust agencies have

³³ *United States v. Phila. Nat'l Bank*, 374 U.S. 321, 363 (1963); *see also* Douglas H. Ginsburg & Joshua D. Wright, *Philadelphia National Bank: Bad Economics, Bad Law, Good Riddance*, 80 ANTITRUST L.J. 201 (2015).

³⁴ Ginsburg & Wright, *supra* note 33, at 204, 207–08 (noting that *Philadelphia National Bank's* adoption of the structure-conduct-performance (SCP) paradigm represents the integration of economic learning into law, but its persistence ignores later theoretical and empirical work in economics exposing the flaws in the SCP approach).

³⁵ *See* Kobayashi & Muris, *supra* note 28, at 152–54.

³⁶ *See* Ginsburg & Wright, *supra* note 33, at 379.

³⁷ *Phila. Nat'l Bank*, 374 U.S. at 363.

largely moved beyond relying on market structure as the principal guide to enforcement both in practice and in later versions of the Horizontal Merger Guidelines. In particular, the 2010 Horizontal Merger guidelines deemphasize the use of simple proxies such as measures of concentration in favor of more sophisticated models to predict merger effects.³⁸

The evolution of the merger guidelines highlights the importance of institutional competence and fit in determining both the bounds of a regulatory approach as well as the allocation of tasks between approaches. Indeed, these institutional structures have been used to explain features of ex-ante sector regulation that are not commonly found in the antitrust laws. In particular, the antitrust laws are based on generally applicable standards (e.g., to insure the proper functioning of markets in order to protect the competitive process and maximize consumer welfare).³⁹ Because the common law of antitrust is produced by generalist judges with limited specific industry knowledge and expertise, they are ill suited to effectively supervise and administer price regulations, especially in dynamic industries.⁴⁰ In light of this, the antitrust laws in the U.S., with a few notable exceptions,⁴¹ have maintained a strict separation between antitrust law and

³⁸ See, e.g., Carl Shapiro, *The 2010 Horizontal Merger Guidelines: From Hedgehog to Fox in Forty Years*, 77 ANTITRUST L. J. 49 (2010).

³⁹ Cf. *Mission*, U.S. DEP'T OF JUSTICE ANTITRUST DIV., <https://www.justice.gov/atr/mission> (last visited Oct. 14, 2020) ("The goal of the antitrust laws is to protect economic freedom and opportunity by promoting free and fair competition in the marketplace . . . [which] benefits American consumers through lower prices, better quality and greater choice.").

⁴⁰ As the Court noted in *Trinko*: "Allegations of violations of [interconnection] duties are difficult for antitrust courts to evaluate, not only because they are highly technical, but also because they are likely to be extremely numerous, given the incessant, complex, and constantly changing interaction of competitive and incumbent LECs implementing the sharing and interconnection obligations." *Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 414 (2004).

⁴¹ Notable examples are the 1941 antitrust consent decrees between the American Society of Composers, Authors and Publishers (ASCAP), Broadcast Music, Inc. (BMI) and the U.S. Department of Justice. The decrees require ASCAP and BMI to issue blanket licenses and provide for a rate court proceeding before the United States District Court for the Southern District of New York when the parties cannot agree on price. For a discussion of the potential costs created by the decrees, see Bruce H. Kobayashi, *Opening Pandora's Box: A Coasian 1937 View of Performance Rights Organizations in 2014*, 22 GEO. MASON L. REV. 925

price regulation.⁴² A corollary of this separation is a cautious and limited approach to antitrust duties to deal, which would require a specification of the price at which the involuntary transaction would take place.⁴³

Because detailed and specific knowledge is required to engage in price setting through regulation, such tasks are generally allocated to specialist sector regulators administering sector specific regulations.⁴⁴ The historical use of sector regulation and sector regulators to administer price setting and duties to deal is consistent with an ex-ante choice of regulation over antitrust based on comparative advantage.⁴⁵ Because of this focus, regulatory regimes have often focused on network industries that exhibit economies of scale and issues relating to access rights and interconnection duties. While such sector specific regulatory regimes may be better suited to regulating price and interconnection duties in theory, in practice these regimes are imperfectly carried out and have often proven to be costly and ineffective. The use of industry specific regulators can result in the regulators being captured by the agencies,⁴⁶ and legislation to enact a

(2015). The DOJ opened a review of these decrees in 2019. *See* Press Release, U.S. Dep’t of Justice, Department of Justice Opens Review of ASCAP and BMI Consent Decrees (June 5, 2019), <https://www.justice.gov/opa/pr/departments-justice-opens-review-ascap-and-bmi-consent-decrees>; Makan Delrahim, Assistant Att’y Gen., U.S. Dep’t of Justice Antitrust Div., Sign of the Times: Innovation and Competition in Music, Remarks as Prepared for the National Music Publishers Association Annual Meeting (June 13, 2018), <https://www.justice.gov/opa/speech/file/1071706/download>.

⁴² *See generally* Philip Areeda & Donald F. Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 HARV. L. REV. 697 (1975) (setting forth the prevailing test for actionable predatory pricing under Section 2); OECD Directorate for Financial and Enterprise Affairs, Competition Comm. Working Party No. 2 on Competition and Regul., *Excessive Prices* (Submitted by U.S. Dep’t of Justice and Fed. Trade Comm’n), No. DAF/COMP/WP2/WD(2011)65 (Oct. 2011), <https://www.ftc.gov/system/files/attachments/us-submissions-oecd-2010-present-other-international-competition-fora/1110excessivepricesus.pdf>.

⁴³ *See* Carlton & Picker, *supra* note 5, at 26 (“[A]ntitrust is a poor framework for price setting or for establishing affirmative duties toward rivals.”).

⁴⁴ *See generally id.* Examples include the Interstate Commerce Commission (regulating the operation of interstate railroads and limiting rates to those that were “reasonable and just”), the Federal Communications Commission, the Federal Maritime Commission, and the Civil Aeronautics Board (regulating “fares and entry”).

⁴⁵ *Id.* at 26.

⁴⁶ *See* George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI 3, 3 (1971) (“[A]s a

regulatory regime often reflects the preferences of those being regulated rather than an attempt to maximize consumer welfare.⁴⁷ The result of ineffective sector regulation has often been deregulation,⁴⁸ and a return to the market and the protection of the competitive process through antitrust law.⁴⁹

II. ANTITRUST OR REGULATION AND THE DOCTRINE OF IMPLIED IMMUNITY

The choice to use sector regulation to control competition can generate conflicts between what is lawful under the regulatory statute and what is lawful under the antitrust laws. Litigation over conflicts between the antitrust laws and sector regulations began almost immediately after the passage of the Sherman Act in 1890.⁵⁰ In theory, both the legislative body that passes the law and the courts that enforce the laws can attempt to clarify what law applies to the conduct. For example, Congress can pass specific immunity from the antitrust laws⁵¹ or include antitrust savings clauses in regulatory statutes that specifically set out the ability of antitrust to reach regulated conduct.⁵² Specific immunity from the antitrust laws is costly and generally disfavored, and courts have found savings clauses “unhelpful.”⁵³ Historically, implied repeals of the antitrust

rule, regulation is acquired by the industry and is designed and operated primarily for its benefit.”).

⁴⁷ See generally JAMES M. BUCHANAN & GORDON TULLOCK, *THE CALCULUS OF CONSENT: LOGICAL FOUNDATIONS OF CONSTITUTIONAL DEMOCRACY* (2004), <https://www.econlib.org/library/Buchanan/buchCv3.html>.

⁴⁸ See Howard A. Shelanski, *From Sector-Specific Regulation to Antitrust Law for US Telecommunications: The Prospects for Transition*, 26 TELECOMMS. POL’Y 335 (2002) (describing the transition from regulation to deregulation in the telecommunications sector). See generally ALFRED E. KAHN, *THE ECONOMICS OF REGULATION* (1988).

⁴⁹ Carlton & Picker, *supra* note 5, at 58 (noting that antitrust law has been more durable than sector regulation).

⁵⁰ *Id.* at 34–37 (describing the myriad antitrust immunities carved out of Sherman Act liability in the first few decades after its passing, both by statute and judicial action).

⁵¹ See Bruce H. Kobayashi & Joshua D. Wright, *Antitrust Exemptions and Immunities in the Digital Economy*, in *THE GAI REPORT ON THE DIGITAL ECONOMY* (2020).

⁵² See PHILIP E. AREEDA & HERBERT HOVENKAMP, 1A ANTITRUST LAW ¶ 241d (4th ed. 2013 & Supp. 2020).

⁵³ *Id.*

laws due to the presence of an overlapping regulatory statute were “strongly disfavored.”⁵⁴ Over time, however, the limits on the operation of the antitrust laws in the presence of regulation has been expanded to the point where the Court has created broad limits on the application the federal antitrust laws in the presence of existing sector regulation, both in the presence and in the absence of antitrust saving clauses. As a result, the choice to use sector regulation to control competition can also be a choice to displace the antitrust laws and treat antitrust and regulation as substitutes.⁵⁵

The Court set out its approach to conflicts between antitrust and regulation in the presence of an antitrust savings clause in *Verizon v. Trinko*.⁵⁶ In that case, Trinko, a local exchange customer of AT&T, filed a class action lawsuit against Verizon claiming that its anticompetitive refusal to deal with AT&T on terms required by the Telecommunications Act of 1996 (1996 Act) violated Section 2 of the Sherman Act.⁵⁷ In particular, the 1996 Act required specific interconnection duties at reasonable and non-discriminatory prices and provided for the regulatory enforcement of these duties. Verizon had failed to comply with the regulatory duties to interconnect, and agreed to a consent decree that required

⁵⁴ Barak Orbach, *The Implied Antitrust Immunity 2* (July 1, 2014) (unpublished manuscript), <https://awa2015.concurrences.com/IMG/pdf/ssrn-id2447718.pdf> (quoting *United States v. Phila. Nat’l Bank*, 374 U.S. 321, 350-51 (1963) (“Repeals of the antitrust laws by implication from a regulatory statute are strongly disfavored, and have only been found in cases of plain repugnancy between the antitrust and regulatory provisions.”)).

⁵⁵ See, e.g., Justin (Gus) Hurwitz, *Administrative Antitrust*, 21 GEO. MASON L. REV., 1191, 1193 (2014) (noting that the Court’s recent implied immunity cases “can be read together as advancing a very broad regulatory displacement standard for federal antitrust claims in fields subject to regulation.”).

⁵⁶ *Verizon Commc’ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398 (2004).

⁵⁷ The complaint alleged:

[Petitioner] has not afforded CLECs access to the local loop on a par with its own access. Among other things, [Petitioner] has filled orders of CLEC customers after fulfilling those for its own local phone service, has failed to fill in a timely manner, or not at all, a substantial number of orders for CLEC customers substantially identical in circumstances to its own local phone service customers for whom it has filled orders on a timely basis, and has systematically failed to inform CLECs of the status of their customers’ orders with [Petitioner].

Law Offices of Curtis V. Trinko, L.L.P. v. Bell Atl. Corp., 294 F.3d 307, 313 (2d Cir. 2002).

it to pay \$3 million to the United States. Verizon also agreed to pay \$10 million to AT&T and other local exchange carriers harmed by Verizon's failure to comply with the 96 Act's interconnection requirements. In the class action, filed the day after the FCC issued the consent decree, plaintiff Trinko attempted to turn Verizon's failure to comply with the 1996 Act's regulatory duty to deal (RDTD) into a violation of §2 of the Sherman Act. The Court disagreed, finding that the 1996 Act's RDTD was distinct from antitrust duties to deal, and holding that Trinko's complaint alleging breach of a RDTD does not state a claim under §2 of the Sherman Act.⁵⁸

Because the 1996 Act also included a specific antitrust savings clause, the Court could not base its decision to grant Verizon's motion to dismiss on a finding of implied immunity.⁵⁹ In interpreting the effect of the antitrust savings clause, the Court noted that "just as the 1996 Act preserves claims that satisfy existing antitrust standards, it does not create new claims that go beyond existing antitrust standards; that would be equally inconsistent with the saving clause's mandate that nothing in the Act 'modify, impair, or supersede the applicability' of the antitrust laws."⁶⁰ As a result, the 1996 Act's extensive RDTD did not create or impose an equivalent antitrust duty to deal (ADTD). The Court then turned to the question of whether Verizon's failure to comply with the 1996 Act's RDTD violated pre-existing antitrust standards. The Court held that it did not, finding that the ADTD under existing antitrust standards (with the Court's decision in Aspen

⁵⁸ The district court twice dismissed the complaint for failure to state a claim. The Second Circuit Court of Appeals affirmed the district court's antitrust standing holding, but reversed the dismissal, holding that the plaintiff's complaint may state a claim under the essential facilities doctrine or the monopoly leveraging doctrine. *See id.* at 326.

⁵⁹ "Section 601(b)(1) of the 1996 Act is an antitrust-specific saving clause providing that 'nothing in this Act or the amendments made by this Act shall be construed to modify, impair, or supersede the applicability of any of the antitrust laws.' This bars a finding of implied immunity." *Trinko*, 540 U.S. at 406. *See also* ANTITRUST MODERNIZATION COMM'N, REPORT AND RECOMMENDATIONS 339–40 (2007) (The Court's holding in *Trinko* "is best understood only as a limit on refusal-to-deal claims under Section 2 of the Sherman Act; it does not displace the role of the antitrust laws in regulated industries.").

⁶⁰ *Trinko*, 540 U.S. at 407.

Skiing “at or near the outer bounds of §2 liability”) was limited⁶¹ and not violated by Verizon’s conduct.⁶²

As others have noted, “the significance of [*Trinko*] is not that the Court reached that result in this particular case, but in the broad reasoning through which it did so.”⁶³ A narrow decision finding that a complaint that merely pleads a violation of a RDTD is insufficient to state a claim under §2 would not be particularly noteworthy or controversial.⁶⁴ Indeed, rejection of the Second Circuit’s adoption of a very liberal pleading standard under the existing “no set of facts” standard from *Conley v. Gibson* may have surprised some at the time *Trinko* was decided.⁶⁵ But the novelty of such an approach would certainly be diminished by the Court’s 2007 decision in *Twombly*,⁶⁶ which replaced the liberal “no set of facts” pleading standard with a plausibility standard that invites a relative comparison that examines whether the plaintiff’s hypothesis is “not merely parallel conduct that could just as well be independent action.”⁶⁷ Moreover, a decision

⁶¹ The Court noted that “[T]he Sherman Act “does not restrict the long recognized right of [a] trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal.” *Id.* at 408 (citing *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919)). Furthermore,

[c]ompelling such firms to share the source of their advantage is in some tension with the underlying purpose of antitrust law, since it may lessen the incentive for the monopolist, the rival, or both to invest in those economically beneficial facilities. Enforced sharing also requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing—a role for which they are ill-suited. Moreover, compelling negotiation between competitors may facilitate the supreme evil of antitrust: collusion.

Id. at 407–08.

⁶² “We conclude that Verizon’s alleged insufficient assistance in the provision of service to rivals is not a recognized antitrust claim under this Court’s existing refusal-to-deal precedents.” *Id.* at 410.

⁶³ Shelanski, *supra* note 6, at 694.

⁶⁴ As Shelanski notes, “The clear implication is that plaintiff had pleaded neither the facts nor the basic elements of any antitrust claims in his actual amended complaint and that the [Second Circuit] was adopting a very liberal pleading standard.” *Id.* at 692.

⁶⁵ *Conley v. Gibson*, 355 U.S. 41 (1957).

⁶⁶ *Bell Atl. Corp. v. Twombly*, 550 U.S. 544 (2007).

⁶⁷ *Id.* at 557; *see also* *Tellabs, Inc. v. Makor Issues & Rights, Ltd.*, 551 U.S. 308, 324 (2007) (“A complaint will survive, we hold, only if a reasonable person would deem the inference of scienter cogent and at least as

that simply held that the petitioner's violation of the extensive RDTD does not violate the antitrust laws under the Court's existing duty to deal precedents would not be particularly controversial either. Even a well pled complaint alleging a violation of §2 based on a refusal to deal would bear a heavy burden to prove liability under the Courts current precedents.⁶⁸ Again, the surprise generated by such a holding would have been the timing of the ruling (at the motion to dismiss stage rather than at summary judgment) and not the finding that the plaintiff's claims were weak. Some argue that the Court's description of the current limits of the ADTD under current precedent was inaccurate and significantly narrowed the circumstances where an ADTD exists,⁶⁹ but even a decision that included a narrowing of the ADTD would have few if any implications for the limits on the operation of the antitrust laws in the presence of sector regulations.

The implications for the limits on antitrust in the presence of sector regulation from the Court's *Trinko* decision come from the Court's use of an analysis that would examine the marginal net benefits of applying antitrust law in the presence of regulation. The Court noted that "just as regulatory context may in other cases serve as a basis for implied immunity, it may also be a consideration in deciding whether to recognize an expansion of the contours of § 2."⁷⁰ The Court then applied an error cost analysis of the

compelling as any opposing inference one could draw from the facts alleged."). For a discussion of the effects of the Court's recent pleading cases, see Jonah Gelbach, *Unlocking the Doors to Discovery?*, 121 YALE L.J. 2270 (2012).

⁶⁸ See Shelanski, *supra* note 6, at 694:

Taken together, these facts put *Trinko*'s antitrust claim in an unsympathetic light from the outset. His section 2 claim was at best weak and duplicative of ongoing regulation; it was at worst an attempt to use antitrust law as a cover for bringing a class action suit he did not have standing to file under the 1996 act and to use that act as a basis for liability he would be unlikely to establish under antitrust law.

See also *Pac. Bell Tel. Co. v. linkLine Commc'ns*, 555 U.S. 438 (2009).

⁶⁹ See Shelanski, *supra* note 6, at 695–99.

⁷⁰ *Trinko*, 540 U.S. at 412.

Antitrust analysis must always be attuned to the particular structure and circumstances of the industry at issue. Part of that attention to economic context is an awareness of the significance of

marginal net benefits of applying antitrust law given the existence of the 96 Act,⁷¹ and found that the existence of the extensive RDTD diminished the marginal effect of antitrust enforcement.⁷² Thus, while not an implied immunity case, the Court's use of a marginal cost benefit test diminishes the reach of the antitrust laws in the presence of overlapping sector regulation, and conditions the reach of the antitrust laws on the degree to which such overlapping regulations control competition.⁷³

The Court's *Trinko* decision also affected the relationship between regulation and antitrust by providing a model for the expansion of the implied immunity doctrine, which governs the ability of antitrust law to reach conduct subject to federal regulation

regulation . . . One factor of particular importance is the existence of a regulatory structure designed to deter and remedy anticompetitive harm. Where such a structure exists, the additional benefit to competition provided by antitrust enforcement will tend to be small, and it will be less plausible that the antitrust laws contemplate such additional scrutiny.

Id. at 411–12.

⁷¹ See *id.* at 414:

Against the slight benefits of antitrust intervention here, we must weigh a realistic assessment of its cost. Under the best of circumstances, applying the requirements of § 2 "can be difficult" because "the means of illicit exclusion, like the means of legitimate competition, are myriad." Mistaken inferences and the resulting false condemnations "are especially costly, because they chill the very conduct the antitrust laws are designed to protect." The cost of false positives counsels against an undue expansion of § 2 liability. . . . Even if the problem of false positives did not exist, conduct consisting of anticompetitive violations of § 251 may be, as we have concluded with respect to above-cost predatory pricing schemes, "beyond the practical ability of a judicial tribunal to control."

(internal citations omitted).

⁷² See *id.* at 411:

It suffices for present purposes to note that the indispensable requirement for invoking the doctrine is the unavailability of access to the "essential facilities"; where access exists, the doctrine serves no purpose. Thus, it is said that "essential facility claims should . . . be denied where a state or federal agency has effective power to compel sharing and to regulate its scope and terms." Respondent believes that the existence of sharing duties under the 1996 Act supports its case. We think the opposite: The 1996 Act's extensive provision for access makes it unnecessary to impose a judicial doctrine of forced access.

(internal citations omitted).

⁷³ See Shelanski, *supra* note 6, at 714–18; Hurwitz, *supra* note 55, at 1211–16; Orbach, *supra* note 54, at 21–28.

in the absence of an antitrust savings clause.⁷⁴ The Court's most recent antitrust implied immunity holding came in *Credit Suisse v. Billing*,⁷⁵ decided three years after *Trinko*. In *Credit Suisse*, the Court dismissed a variety of class action antitrust claims brought by investors against investment banks that had formed underwriting syndicates used to sell securities in connection with an initial public offering (IPO).⁷⁶ The Supreme Court, in a 7-1 decision held that the antitrust claims against the investment banks were impliedly preempted under a "clear incompatibility" standard.⁷⁷ The influence of the Court's approach in *Trinko* is apparent, as it adopted an approach to clear incompatibility based on a cost-benefit analysis that focused on the marginal benefit of antitrust enforcement in the presence of sector regulation.⁷⁸ The Court relied on a number of factors to find that

⁷⁴ The securities laws have a general, not an antitrust-specific, savings clause. Justice Thomas dissented on the grounds that the savings clause in Section 16 of the Securities Act of 1933 and Section 28 of the 1934 Act preserves antitrust remedies. Conduct can also be immune from the antitrust laws under *Noerr-Pennington* and the state action doctrine. These doctrines are discussed in Kobayashi & Wright, *supra* note 51.

⁷⁵ *Credit Suisse Sec. (USA) LLC v. Billing*, 551 U.S. 264 (2007). The Court has also displaced federal common law in the presence of regulation. See Hurwitz, *supra* note 55, at 1216–20 (discussing *Am. Elec. Power v. Connecticut*, 564 U.S. 410 (2011)).

⁷⁶ The case involved an antitrust challenge to investment banks formation of syndicates and syndicate's use of restrictive terms to engage in tying and other conduct that was prohibited under both the antitrust and securities laws. The plaintiffs alleged that underwriting firms had violated Section 1 by conspiring to manipulate the IPO process by driving up the price of less attractive shares in the aftermarket. The district court granted the defendants' motion to dismiss on the grounds that the securities laws impliedly repealed the federal antitrust laws and the Second Circuit reversed. Bruce H. Kobayashi & Joshua D. Wright, *Federalism, Substantive Preemption, and Limits on Antitrust: An Application to Patent Holdup*, 5 J. COMPETITION L. & ECON. 469, (2009).

⁷⁷ The Court's "clear incompatibility" analysis examined four critical factors: (1) the existence of regulatory authority under the securities law to supervise the activities in question; (2) evidence that the responsible regulatory entities exercise that authority; (3) a risk that the securities and antitrust laws, if both applicable, would produce conflicting guidance, requirements, duties, privileges, or standards of conduct; and (4) whether the affected practices lie squarely within an area of financial market activity that the securities laws seek to regulate. *Credit Suisse*, 564 U.S. at 275–76. The *Credit Suisse* decision notes that only the third of these factors was at issue in the case. *Id.* at 276. Justice Stevens concurred in the judgment on the grounds that the defendants' alleged conduct would not violate the antitrust laws, but he did not join the majority with respect to its finding of implied repeal. *Id.* at 285–87. As noted, Justice Thomas dissented. *Id.* at 287.

⁷⁸ For an example of then-Chief Judge Breyer taking the same approach, see *Town of Concord v. Boston Edison Co.*, 915 F.2d 17 (1st Cir. 1990).

the marginal benefit of applying antitrust did not outweigh its costs in this setting, observing that intricate securities-related standards separate encouraged from outlawed behaviors, that securities-related expertise is needed to properly decide such cases, that “reasonable but contradictory inferences” may be reached from the same or overlapping evidence, and that there is a substantial risk of inconsistent court results. The Court then concluded that “these factors suggest that antitrust courts are likely to make unusually serious mistakes.”⁷⁹

Some have noted that the Court’s marginal benefit analysis in *Credit Suisse* potentially expands the application of implied immunity beyond the bounds set in the Court’s previous implied immunity decisions.⁸⁰ The Court’s prior holdings imply that antitrust law is plainly repugnant if it can disallow conduct that the regulator could authorize under the statute.⁸¹ These decisions were broad in the sense that they required only the potential for a conflict, and did not require that the antitrust laws conflict with actual implementation of the regulatory statute.⁸² But the Court’s decisions before *Credit Suisse* also narrowed the applicability of the doctrine and facilitated the use of the antitrust laws as a complement to regulation. Implied immunity would not apply to complementary or overlapping antitrust actions challenging anticompetitive conduct that could not be authorized under the statute.⁸³ Nor would it apply to duplicative antitrust actions challenging anticompetitive conduct that is also illegal under the

⁷⁹ *Credit Suisse*, 564 U.S. at 282.

⁸⁰ Shelanski, *supra* note 6, at 707–08.

⁸¹ The Court’s holdings in this area often focused on the directly conflicting goals of the antitrust laws and securities laws, specifically when the securities laws sought to promote anticompetitive goals. For example, if the regulatory statute authorizes the regulator to allow brokers to fix commission rates for some trades, but the antitrust laws would prohibit such conduct, the securities laws impliedly preempt the antitrust laws. *Gordon v. N.Y. Stock Exch., Inc.*, 422 U.S. 659, 663–691 (1975) (system of fixed commission rates utilized by the New York and American Stock Exchanges and under the active supervision of the SEC is beyond the reach of the antitrust laws).

⁸² *United States v. Nat’l Ass’n of Sec. Dealers, Inc.*, 422 U.S. 694 (1975); Shelanski, *supra* note 6, at 688.

⁸³ *Silver v. N.Y. Stock Exch.*, 373 U.S. 341 (1963).

regulatory statute.⁸⁴

Although the Court's *Credit Suisse* decision did not overrule its earlier precedents in this area, it expanded the implied immunity doctrine beyond its previous boundaries by applying it to a case of overlapping laws, where challenged conduct (in this case, the tying claim) would be a potential violation of both the antitrust and securities laws.⁸⁵ Indeed, the case where the enforcement of antitrust law duplicates the enforcement of securities law would present a clear case where the marginal benefit of applying antitrust is low. In such a case, any cognizable costs of erroneous antitrust decisions could easily outweigh these low marginal benefits. In addition, even if overlapping enforcement does not produce conflicting outcomes on liability, it can, without explicit coordination between the laws and agencies, result in over deterring remedies.⁸⁶

Setting aside the merits of the Court's holdings, it is clear that *Trinko* and *Credit Suisse* advance a "broad regulatory displacement standard for federal antitrust claims in

⁸⁴ *Otter Tail Power Co. v. United States*, 410 U.S. 366, 372 (1973):

"Repeals of the antitrust laws by implication from a regulatory statute are strongly disfavored, and have only been found in cases of plain repugnancy between the antitrust and regulatory provisions." Activities which come under the jurisdiction of a regulatory agency nevertheless may be subject to scrutiny under the antitrust laws.

⁸⁵ Shelanski, *supra* note 6, at 707–08.

⁸⁶ *Accord* Kobayashi & Wright, *supra* note 76, at 509. As noted, Verizon paid \$13 million to the FCC and the LEC. As Shelanski notes,

[*Trinko*'s] section 2 claim was at best weak and duplicative of ongoing regulation; it was at worst an attempt to use antitrust law as a cover for bringing a class action suit he did not have standing to file under the 1996 act and to use that act as a basis for liability he would be unlikely to establish under antitrust law. It is therefore not surprising that the Supreme Court took a dim view of *Trinko*'s suit and remanded the case for dismissal.

Shelanski, *supra* note 6, at 694. For a recent example of an attempt to achieve the coordination of remedies between multiple agencies enforcing separate statutes, see Rod Rosenstein, Deputy Attorney General, U.S. Dep't of Justice, Remarks to the New York City Bar White Collar Crime Institute (May 9, 2018) <https://www.justice.gov/opa/speech/deputy-attorney-general-rod-rosenstein-delivers-remarks-new-york-city-bar-white-collar> (announcing DOJ "no piling on" policy).

fields subject to regulation."⁸⁷ A primary implication of this broad approach to regulatory displacement of antitrust is that the ex-ante decision to allocate control of competition to sector regulation will take on even more importance, as such a choice can be a choice to disable antitrust and its potential function as a complement to fill gaps left by regulation.⁸⁸ Moreover, the Court's marginal analyses in *Trinko* and *Credit Suisse* focus on low benefits and error costs generated by enforcing the antitrust laws, but take the presence of sector regulation as given. But the ex-ante choice between antitrust and regulation begins with a different perspective in which the potentially significant imperfections and error costs of both regulation and antitrust are taken into account. In particular, such an approach would ensure that great care be exercised in ensuring that the use of ex-ante regulation is limited to those areas in which such an approach possesses a comparative advantage.

III. ANTITRUST AND SECTOR REGULATION FOR PHARMACEUTICAL INNOVATION: HATCH WAXMAN AND STATE DRUG SUBSTITUTION LAWS.

In this section, we examine the use of antitrust in the presence of sector regulation for pharmaceutical innovation—the Drug Price Competition and Patent Term Restoration Act of 1984,⁸⁹ (aka Hatch-Waxman Act) and related State Generic Substitution Laws. The Hatch-Waxman (HW) Act provided a specific solution to the use-creation tradeoff that is at the core of the economic analysis of innovation.⁹⁰ Together, the HW Act and state GSL regulations form a comprehensive system of ex-ante regulations that alter

⁸⁷ Hurwitz, *supra* note 55, at 1193.

⁸⁸ See Shelanski, *supra* note 6, at 686, 727–28 (discussing the use of antitrust to fill gaps in the pre-1996 telecom regulatory regime); *MCI Commc'ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081 (7th Cir. 1983). In *MCI*, holding that the Federal Communications Act did not preclude application of the Sherman Act, the Seventh Circuit Court of Appeals embraced an “essential facilities” theory of antitrust harm to MCI by AT&T's refusal to interconnect to MCI “on a reasonable basis.” *Id.* at 1200. This decision in part set the stage for the Telecommunications Act of 1996, which legislatively imposed a regulatory duty to deal on AT&T.

⁸⁹ Drug Price Competition and Patent Term Restoration (Hatch-Waxman) Act, 21 U.S.C. §§ 355, 360cc.

⁹⁰ See generally WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 22 (2003).

both static and dynamic competition in markets for prescription drugs.

The HW Act contains regulations that alter post-patent competition in affected markets aimed at lowering prices of off patent drugs faster and reducing use costs.⁹¹ The HW Act lowered the cost of generic entry by allowing generics to use an Abbreviated New Drug Application (ANDA). An ANDA is approved if the generic demonstrates that its generic drug is bioequivalent to a reference listed drug (RLD). RLDs are listed in an FDA publication known as the “Orange Book”, which identifies FDA approved drug products and related patent and exclusivity information.⁹² Because the ANDA does not require that the potential generic entrant produce evidence from clinical trials that their drug was safe and effective, the ANDA process costs a fraction of what is required to obtain marketing approval for the RLD through a New Drug Application (NDA).⁹³ ANDA Filings under Paragraph I-III of the HW act were designed to speed generic entry after the expiration of the patent and quickly lower the prices of off patent drugs.⁹⁴ Not only do they lower the regulatory costs of obtaining FDA marketing approval for generic entrants, but under HW, ANDA applicants do not have to wait for the patents to expire to begin using samples of the RLD to achieve and demonstrate bioequivalence and to prepare its ANDA.⁹⁵

⁹¹ See, e.g., Luke M. Olson & Brett W. Wendling, *Estimating the Causal Effect of Entry on Generic Drug Prices Using Hatch–Waxman Exclusivity*, 53 REV. INDUS. ORG. 139, 165–66 (2018).

⁹² U.S. Food & Drug Administration, *Approved Drug Products with Therapeutic Equivalence Evaluations (Orange Book)* (Sept. 11, 2020), <https://www.fda.gov/drugs/drug-approvals-and-databases/approved-drug-products-therapeutic-equivalence-evaluations-orange-book>.

⁹³ Joanna Shepherd, *Deterring Innovation: New York v. Actavis and the Duty to Subsidize Competitors’ Market Entry*, 17 MINN. J.L. SCI. & TECH. 663, 665 (2016) (citing an average cost of a bringing a new drug to market at \$2.6 billion, and the cost of bringing a drug to market under an ANDA at \$1–2 million).

⁹⁴ ANDA filings under Paragraphs I-III must certify that either: the drug is not covered by any patent listed in the original NDA (Paragraph I); that all listed patents have expired (Paragraph II); or that all listed patents will have expired prior to the applicants entry into the market. 21 U.S.C. § 355(j)(2)(A)(vii).

⁹⁵ Prior to HW, using the patented drug to perform tests required for FDA marketing approval would be an act of infringement. *Roche v. Bolar*, 733 F.2d 858 (Fed. Cir. 1984).

In addition, the HW act sought to alter competition prior to the expiration of patents covering a drug through incentives for firms to challenge patents. This is accomplished through the use of a 180-day marketing exclusivity period for the first generic firm to file a substantially complete ANDA with Paragraph IV certification, which certifies that the listed patents protecting the RLD are either invalid or not infringed. The filing of a Paragraph IV ANDA creates an act of infringement that allows the patentee to file an infringement suit. The filing of a lawsuit triggers a thirty-month stay on FDA approval of the ANDA and allows time for the parties to litigate the challenge to the patent.

Finally, competition in drug markets is regulated by state generic substitution laws. Since the early 1970s, all states allow pharmacists to substitute generic drugs when the prescription is written for the brand name drug.⁹⁶ Some state laws are permissive, while other states' laws mandate substitution.⁹⁷ States' laws also differ on whether the consent of the patient is presumed or required,⁹⁸ and the circumstances under which a drug must be substituted.⁹⁹ While the HW act facilitates free riding on the RLD's data on safety and efficacy generated during clinical trials, these state laws seek to further increase the penetration of generic drugs by allowing generics to free ride on the brand's

⁹⁶ Shepherd, *supra* note 93, at 686–87.

⁹⁷ *Id.* Eleven states mandate substitution unless prohibited by the prescribing doctor (FL, KS, KY, MA, MN, NJ, NV, NY, PA, VT, WA) while thirty-nine states and the District of Columbia allow pharmacists and insurers the discretion to substitute. See NAT'L CONF. OF STATE LEGISLATURES, *GENERIC DRUG SUBSTITUTION LAWS* (May 3, 2019), https://www.ncsl.org/portals/1/documents/health/Generic_Drug_Substitution_Laws_32193.pdf.

⁹⁸ Yan Song & Douglas Barthold, *The Power of Not Asking: How Do Generic Drug Substitution Laws Affect Patient Demand for Generic Drugs* 2–4 (Jan. 27, 2015) (unpublished manuscript), <https://ssrn.com/abstract=2727943>. The presumption states are AL, ID, IL, MI, MS, NE, NV, NJ, NM, OR, RI, TN, WA, and WY.

⁹⁹ See Shepherd, *supra* note 93, at 686–88. Thirty states and the District of Columbia allow substitution based on an AB-rating in the FDA Orange Book. This requires the generic to have the same active ingredient, dosage form, strength, and route of administration as the brand drug. Sixteen other states do not have an explicit AB rating requirement, but have similar standards that require the same dose or dosage form. Four states do not appear to have such a restriction.

expenditures on promoting the RLD to doctors, payers, and patients.

Because the HW Act and state GSL regulations alter post-patent competition in a way that lowers off patent drug prices more quickly and more often, these regulations that serve to lower the lifetime use costs associated with patented drugs will also lower the anticipated returns to a patent on the margin, and will have a negative effect on the incentive to innovate.¹⁰⁰ Moreover, successful Paragraph IV challenges that invalidate patents and the generation of higher costs involved in defending valid patents from Paragraph IV challenges also reduce anticipated returns to patents. To offset these effects, the HW Act sought to maintain or improve incentives to innovate through restoring a part of the patent term taken up during the process of obtaining FDA approval of a NDA¹⁰¹ and granting five years of exclusivity for clinical trial data generated during this process.¹⁰² There is some evidence that the HW regulations diminished the effective patent life and net returns to pharmaceutical innovation relative to the pre-HW days. For example, a 1996 study found that the effective patent life of a pharmaceutical patent was between fourteen and seventeen years (9 years of effective patent life left after FDA marketing approval plus between five to eight years post expiration before generic entry). After HW, the effective patent life, including patent term restoration, was 11.7 years.¹⁰³

Despite the comprehensive system of regulation of both static and dynamic competition contained in the HW Act, the antitrust laws have been allowed to operate in

¹⁰⁰ See, e.g., Emily Michiko Morris, *The Myth of Generic Pharmaceutical Competition Under the Hatch-Waxman Act*, 22 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 245 (2012).

¹⁰¹ The HW Act provides for patent term restoration equal to the lesser of one-half of the time period from the start of human clinical trials to NDA approval plus all of the time spent during the actual approval process, or five years. In addition, the remaining patent life after the restoration is applied cannot exceed 14 years from the date of FDA marketing approval. 35 U.S.C. § 156. The average clinical trial lasts five to six years. Morris, *supra* note 100, at 253.

¹⁰² 21 U.S.C. § 355(c)(3)(E)(ii).

¹⁰³ Pamela J. Clements, *The Hatch-Waxman Act and the Conflict Between Antitrust Law & Patent Law*, 48 IDEA 381, 393 (2008); see also Morris, *supra* note 100, at 260–61.

a complementary way in these markets. Until 2003, the HW Act did not have an antitrust savings clause, and the specific savings clause enacted as part of the Medicare Modernization Act was narrow, serving to clarify that the lack of a challenge to a patent settlement by the FTC or DOJ would not act as a bar to any action, and to limit any inference or presumption resulting from agency action.¹⁰⁴ The scope for implied preemption of the antitrust laws was also narrowed by the fact that the specific regulations with respect to patent law issues and marketing exclusivity were not carried over to issues that became the focus of antitrust actions. These include the settlement of patent litigation, product improvements, and duties of firms selling branded drugs to deal with generic firms. Because the HW regulations were silent with respect to these issues, antitrust was available to fill these gaps in the regulation when the incentives of firms generated outcomes that were not consistent with the intended goals of the HW legislation.¹⁰⁵ On the other hand, a significant question exists as to whether antitrust or regulation is the right tool to address these issues. For the reasons stated elsewhere in this chapter, antitrust has proven to be an awkward and ineffective tool. We suggest that regulatory reform, rather than antitrust, may be a better approach to filling gaps in the HW regulatory scheme.

In the remainder of this section, we examine the areas of antitrust litigation

¹⁰⁴ Medicare Modernization Act, Pub. L. No. 108-173, 117 Stat. 2065, § 1117 (2003). Under this Act, the HW Act was amended to include the following antitrust specific savings saving clause:

Any action taken by the Assistant Attorney General or the Commission, or any failure of the Assistant Attorney General or the Commission to take action, under this subtitle shall not at any time bar any proceeding or any action with respect to any agreement between a brand name drug company and a generic drug applicant, or any agreement between generic drug applicants, under any other provision of law, nor shall any filing under this subtitle constitute or create a presumption of any violation of any competition laws.

¹⁰⁵ For a listing of the large and diverse number of cases brought by the FTC, see FED. TRADE COMM'N, OVERVIEW OF FTC ACTIONS IN PHARMACEUTICAL PRODUCTS AND DISTRIBUTION (2019), https://www.ftc.gov/system/files/attachments/competition-policy-guidance/overview_pharma_june_2019.pdf.

mentioned above and focus on how these issues are generated by the regulatory incentives generated by the HW Act or state GSL laws. We also consider the relative effectiveness of antitrust and potential regulatory solutions. As mentioned above, these focus areas include antitrust litigation challenging patent settlements between branded and generic firms that have filed Paragraph IV ANDAs, brand investments in product improvements that result in prescriptions that are not eligible for substitution under various state GSL laws, and various refusals to deal and foreclosure related antitrust claims.

Perhaps the most prominent area of HW related antitrust litigation is over patent settlements that include payments from the brand name drug companies to generic firms that filed Paragraph IV ANDAs. In these cases, the ANDA with a Paragraph IV certification challenges the validity of the listed patents protecting the drug and creates an artificial act of infringement that allows the branded firm to file a patent infringement lawsuit, which triggers a 30 month stay of FDA action on the ANDA. The antitrust inquiry in these cases focuses on the settlement agreements used to end the patent litigation, and in particular the use of monetary payments in the settlements (branded “reverse settlements” because the payments flow from the plaintiff (the branded firm) to the defendant (the generic firm)).¹⁰⁶

At the outset, we note that consideration flowing from the plaintiff to the defendant in these cases is not only unsurprising, but necessary to settle such cases. Without the regulatory superstructure and the creation of an “artificial” act of infringement, HW Paragraph IV, zero damage infringement cases are in effect actions by the generic firm to declare the patent invalid. In the absence of damages from infringement, monetary settlement of a declaratory judgment action would involve

¹⁰⁶ See generally Bruce H. Kobayashi et al., *Actavis and Multiple ANDA Entrants: Beyond the Temporary Duopoly*, ANTITRUST, Spring 2015, at 89.

“forward” or “normal” payments from the branded defendant to the generic plaintiff. The “reverse” nature of the payments only occurs because of the way the HW regulations create an artificial act of infringement. Moreover, cases involving patentee filed infringement cases with damages that settle for a discount relative to expected damages would include an implied “reverse” payment from the plaintiff to the defendant. Thus, there is nothing odd or noteworthy about the “reverse” nature of the payments.

The payments are objectionable, from a static consumer welfare standpoint, because they result in settlement agreements that delay the entry of the generic firm more than settlements that do not involve any monetary payment from the branded firm to the generic entrant.¹⁰⁷ After more than a decade of litigation over whether and when these “reverse settlements” violated the antitrust laws, the Court in *FTC v. Actavis* rejected bright line rules of legality and illegality in favor of a standard to be fleshed out by the lower courts applying the rule of reason.¹⁰⁸ At the same time, the Court recognized the costs of an unconstrained rule of reason analysis and suggested a simpler rule—an inference based on the “reverse payment” exceeding the plaintiff’s litigation costs.¹⁰⁹ The avoidance of litigation costs is a traditional reason for settlement, both in economic models and actual litigation.¹¹⁰ However, it is far from clear that the Court’s *Actavis*

¹⁰⁷ “[T]he payment (if otherwise unexplained) likely seeks to prevent the risk of competition. And, as we have said, that consequence constitutes the relevant anticompetitive harm.” *FTC v. Actavis*, 570 U.S. 136, 157 (2013).

¹⁰⁸ *Id.* at 158–59.

¹⁰⁹ “A court, by examining the size of the payment, may well be able to assess its likely anticompetitive effects along with its potential justifications without litigating the validity of the patent; and parties may well find ways to settle patent disputes without the use of reverse payments.” *Id.* at 158.

¹¹⁰ While avoidance of litigation costs is a traditional economic reason for settlement, the Court’s approach implies that a payment based on the branded firm’s avoided litigation costs is a legitimate aim of settlement. In other contexts, the extraction of the other parties’ litigation costs has been one of the primary reasons for adopting rules that truncate litigation at an early stage. For example, in moving to a plausibility standard at the pleading stage in *Twombly*, the Court expressed concern over a plaintiff with “a largely groundless claim” being allowed to “take up the time of a number of other people, with the right to do so representing an in terrorem increment to settlement value.” *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 558 (2007) (quoting *Dura Pharms., Inc. v. Broudo*, 544 U.S. 336, 347 (2005)); see Bruce H. Kobayashi, *Law’s*

inference provides useful guidance in separating between pro and anticompetitive settlements given that the antitrust focus in these cases is solely upon static competition, and does not consider the dynamic effect of these cases on innovation or the balancing of use and creation that was central to the HW regulatory scheme.¹¹¹

Moreover, an antitrust focus on the terms of patent settlements misses the point from the standpoint of the regulatory goals of the HW Act if this focus does not materially affect the parties' decision to settle rather than litigate. Indeed, a primary regulatory goal of HW Paragraph IV certifications is to induce the production of a public good—the invalidation through patent litigation of “bad” patents—a goal that can only be achieved through litigation to judgment.¹¹² Our earlier analysis shows that even with the Court's “Actavis inference” as a constraint on the size of any reverse payment, there is a very strong incentive to settle rather than litigate as the elimination of the risk of early prepatent generic competition preserves the patentee's rents whether the underlying patent is valid or not.¹¹³ For “bad” patents, settlement is inconsistent with the goal of

Information Revolution as Procedural Reform: Predictive Search as a Solution to the In Terrorem Effect of Externalized Discovery Costs, 2014 U. ILL. L. REV. 1473, 1516 (2014). See generally David Rosenberg & Steven Shavell, *A Model in Which Suits Are Brought for Their Nuisance Value*, 5 INT'L REV. L. & ECON. 3 (1985).

¹¹¹ See Kobayashi et al., *supra* note 106, at 95. In addition, there is evidence that the Court's attempt to provide an administrable path to reverse payments cases has not been a success. See, e.g., Joshua D. Wright, Comm'r, Fed. Trade Comm'n, *FTC v. Actavis and the Future of Reverse Payment Cases—Remarks at Concurrences Journal Annual Dinner* (Sept. 26, 2013), http://www.ftc.gov/sites/default/files/documents/public_statements/ftc-v.actavis-future-reverse-payment-cases/130926actavis.pdf. See also Eric Helland and Seth A. Seabury, *Are Settlements in Patent Litigation Collusive? Evidence from Paragraph IV Challenges* (Nat'l Bureau of Econ. Rsch., Working Paper No. 22194, 2016).

¹¹² *Id.* See generally Ezra Friedman & Abraham L. Wickelgren, *Chilling, Settlement, and the Accuracy of the Legal Process*, 26 J.L. ECON. & ORG. 144 (2010) (finding that settlements are not always the best options and that prohibiting settlements in some cases can increase social welfare more than allowing it); Owen M. Fiss, *Against Settlement*, 93 YALE L.J. 1073 (1984) (arguing that imbalances in resources of the parties can negatively affect the benefits settlements can provide, and that adjudication might sometimes prove to be a better option).

¹¹³ See Kobayashi et al., *supra* note 106, at 94. This effect is substantial given the effect of non-mutual collateral estoppel, which would, when applied, prevent a patentee from relitigating the issue of validity against non-parties after the patent is invalidated. See *Blonder-Tongue v. U. Ill. Found.*, 402 U.S. 313, 349–50 (1971).

inducing generic litigants to provide the public good of litigation to judgment and invalidating the patent. Moreover, since application of the Actavis inference does not contemplate an inquiry into the validity of the patent, there is a significant risk that firms with branded drugs will be forced to allow early generic entry despite having strong patents. For valid patents, this generates higher type I error costs by inducing settlements that are more costly to the firm selling the RLD protected by valid patents.

One alternative to the decades long and ineffective antitrust litigation would be to address the regulatory incentives HW ANDA Paragraph IV applicants have to litigate patents through regulatory reform and not antitrust. Indeed, some have argued that the most promising path towards improving incentives to litigate and invalidate bad patents is through regulatory reform that makes a Paragraph IV ANDA applicant eligible for the 180-day marketing exclusivity only if it successfully invalidates the patent.¹¹⁴ Ironically, the FDA, through their successful defense requirement, imposed such a requirement early on. However, this FDA requirement was struck down by the DC Circuit as inconsistent with the plain meaning of the statute.¹¹⁵ A simple solution might have been to amend the statute. But this was not done. While marketing exclusivity forfeiture provisions were enacted as part of the 2003 MMA amendments, they did not include settlement as an unconditional reason for forfeiture.¹¹⁶ Rather than provide a regulatory solution to the problem, the MMA amendments rely on antitrust to operate by providing

¹¹⁴ C. Scott Hemphill & Mark A. Lemley, *Earning Exclusivity: Generic Drug Incentives and the Hatch-Waxman Act*, 77 ANTITRUST L.J. 947, 949 (2011).

¹¹⁵ *Mova Pharm. Corp. v. Shalala*, 955 F. Supp. 128, 130 (D.D.C. 1997), *aff'd*, 140 F.3d 1060 (D.C. Cir. 1998) ("The language of the statute ... is plain and unambiguous. It does not include a 'successful defense' requirement, and indeed it does not even require the institution of patent litigation."). Prior to the DC Circuit's holding in *Mova*, marketing exclusivity was awarded 3 times between 1984 and 1988.

¹¹⁶ 21 U.S.C. § 355(j)(5)(D)(i)(V); *see id.* § 355(j)(5)(D)(ii) (providing resulting forfeiture of 180-day exclusivity). Reasons for forfeiture include the failure to market, the withdrawal of application, the amendment of certification, the failure to obtain tentative approval, the expiration of all patents, and the entry into an anticompetitive agreement.

for forfeiture only if “The first applicant enters into an agreement with another ANDA applicant, the NDA holder, or the patent owner, and there is a final decision of the Federal Trade Commission or an appeals court ‘that the agreement has violated the antitrust laws.’”¹¹⁷

Another focus of antitrust litigation surrounding the HW Act involves sample availability, exclusion, and an antitrust duty of the firm with a RLD to deal with prospective ANDA filers. The promotion of generic competition under the HW regulations requires those planning to file an ANDA to have access to samples of the brand’s RLD for purposes of demonstrating bioequivalence. Thus, the HW regulatory design, like the regulatory scheme of the 1996 Telecommunications Act discussed above, requires a duty to deal, as the HW regulations depend on the manufacturer of the RLD’s willingness to make samples of the RLD available to ANDA filers.

However, until recently, the HW regulatory scheme did not contain a regulatory duty to deal. This is in contrast to regulations like the 1996 Telecommunications Act, which required interconnection with specific regulatory duties and enforcement. In the absence of a regulatory duty to deal, firms selling RLDs used a variety of practices that limited the availability of RLD samples to generic firms contemplating an ANDA filing. For example, since 2007, the FDA has the authority to require firms selling RLDs with dangerous characteristics to use restricted distribution systems as part of a Risk Evaluation and Mitigation Strategy (REMS) program.¹¹⁸ Firms then used these restricted distribution systems and associated ETASU programs to limit the ability of generic drug manufacturers to obtain sufficient samples of REMS-restricted drugs required to conduct bioequivalence testing for an ANDA.¹¹⁹

¹¹⁷ *Id.* § 355(j)(5)(D)(i)(V).

¹¹⁸ See Henry N. Butler, *REMS-Restricted Drug Distribution Programs and the Antitrust Economics of Refusals to Deal with Potential General Competitors*, 67 FLA. L. REV. 977, 982 (2016).

¹¹⁹ Michael A. Carrier, *Sharing, Samples, and Generics: An Antitrust Framework*, 103 CORNELL L. REV. 1, 9–11

Numerous generic firms filed private antitrust claims based on the branded firms' use of REMS restricted distribution systems to prevent generic firms from obtaining samples of the RLD.¹²⁰ While the HW Act's regulatory silence allowed the use of antitrust to police these refusals to deal, such claims based on an ADTD, especially after *Trinko*, can be challenging, risky, and time consuming. Moreover, as noted above, the limited nature of the ADTD can be explained as a rational response to antitrust law's shortcomings as a framework for price regulation and duties to deal which require pricing the access. Thus, regulatory control of competition which requires interconnection or similar duties to deal should, as a matter of ex-ante design, include such duties as part of the regulation.

While no such provision was included in the HW regulatory scheme originally, a regulatory duty to deal was passed and signed into law in December of 2019.¹²¹ In particular, this RDTD requires the branded firm to provide in a timely manner a sufficient quantity of the RLD at commercially reasonable, market based terms.¹²² The legislation also allows the generic firm to obtain a REMS covered product authorization to obtain sufficient quantities from the Secretary of Health and Human Services. A failure to comply with the RDTD allows the generic firm to bring a civil action. Remedies include reasonable attorney's fees and costs of the civil action, and deterring penalties if the defendant in the action did not have a legitimate business justification for the RTD, or if the defendant failed to comply with an order to provide sufficient quantities of the RLD

(2017).

¹²⁰ *Id.* at 12–20 (analyzing seven district court decisions on a defendant's motion to dismiss in private antitrust cases related REMS programs). In four of the seven cases, the district court dismissed the defendant's motion to dismiss. None of the cases proceeded to trial.

¹²¹ Creating and Restoring Equal Access to Equivalent Samples (CREATES) Act (H.R. 965), Pub. L. No. 116-94, 133 Stat. 3130 (2019), 21 U.S.C. § 355-2.

¹²² This is defined to be "a nondiscriminatory price for the sale of the covered product at or below, but not greater than, the most recent wholesale acquisition cost for the drug." 21 U.S.C. § 355-2(a)(1)(A).

under the Act. The inclusion of a RDTD in the HW regulatory design twenty-five years after the passage of the HW Act illustrates the use of a regulatory solution to a regulatory problem, and an appropriate (but not quick) resolution of the allocation of tasks between antitrust and regulation. Prospectively, this RDTD should mitigate the demand for generic firms to bring ADTD cases, and under *Trinko*, result in regulatory displacement of such claims.¹²³

A third set of antitrust cases generated by regulatory incentives involve the state GSLs and the use of strategic product reformulations. As noted above, the state GSLs piggyback on the HW scheme by allowing and in some cases mandating that the pharmacy substitute cheaper generic drugs when the prescription is written for the more expensive branded RLD. While the HW regulations are built around free riding on the RLD firms' investments leading up to and during the NDA approval process, the state GSLs are built around free riding on the RLD firms' investments in advertising, marketing, and selling the RLD.¹²⁴

In particular, while HW promotes free riding on investments that are sunk at the time of generic entry, the operation and effect of the state GSLs depend *parasitically* on the continued maintenance of the flow of prescriptions for the off patent RLD from doctors. A primary economic effect of the GSLs is the drastic reduction or elimination of firms' incentives to engage in any advertising or promotion of RLDs subject these laws. For example, in the case of states whose GSLs mandate substitution, a firm that engages in costly promotion that induces a physician to write a prescription for the RLD will have the sale diverted to a lower cost generic.

It will also generate incentives to create and switch promotion to substitute products not eligible for substitution under the state GSL. Indeed, firms facing generic

¹²³ The Act contains an antitrust-specific savings clause, so implied preemption under *Credit Suisse* would not apply. See *id.* § 355-2(e)(2).

¹²⁴ See Shepherd, *supra* note 93, at 666, 671.

substitution for their RLD have acted on these incentives. In particular, these firms have responded by introducing and promoting new substitute products and either withdrawing or otherwise deemphasizing marketing and sales for the old RLD that would be subject to the GSL laws.¹²⁵ These product replacements can involve switching patients to a new patented drug that is therapeutically superior to the soon to be off-patent RLD. However, because the vast majority of the state GSL laws base eligibility for substitution on the generic drug being AB rated, even minor reformulations such as changes in dosage or form (e.g., switching from a tablet to a capsule) can preclude generic substitution under these laws.¹²⁶

Firms' efforts to engage in product substitution has generated antitrust scrutiny. Plaintiffs have challenged GSL defeating product substitution under an anticompetitive product hopping theory.¹²⁷ In these cases, an anticompetitive product hop consists of two elements, a product reformulation, and promotion or detailing aimed at switching prescriptions from the GSL eligible RLD.

Clearly, neither element of a product hopping case alone would generally raise antitrust concerns or raise a viable claim under pre-existing antitrust standards. In general, conduct aimed at preventing free riding on promotion/detailing, including the introduction of new products and packaging, would be competition on the merits in non-regulatory settings. The use of vertical controls such as exclusive dealing or category management can align incentives between manufacturers and retailers, promote the production of consumer information and valuable retail services, and increase both profits and consumer welfare.¹²⁸ And the production of new products can be an important

¹²⁵ Withdrawal of the off patent RLD results in a hard switch. Shifting marketing and promotion is labelled as a soft switch.

¹²⁶ See the discussion in *supra* note 99.

¹²⁷ See Michael A. Carrier & Steve Shadowen, *Product Hopping: A New Framework*, 92 NOTRE DAME L. REV. 167, 171 (2016).

¹²⁸ See Benjamin Klein & Joshua D. Wright, *The Economics of Slotting Contracts*, 50 J.L. & ECON. 421 (2007);

source of economic growth and increase consumer welfare.¹²⁹

The point being here is not whether product hopping cases state a viable claim under the existing antitrust standards—indeed cases filed by private plaintiffs have survived defendants’ motions to dismiss.¹³⁰ Rather the point is that the incentives to engage in product replacement are generated by a misguided attempt to impose a system of parasitic competition that seeks to impose a form of static textbook perfect competition that incorporates little or no actual competition and generally does not exist in actual markets.¹³¹ The regulatory scheme in the GSL laws also ignores and indeed devalues dynamic competition. Regulatory schemes that attempt to artificially produce such textbook outcomes will be prone to generating unintended consequences that flow from the actual incentives created by the regulations. Indeed, one consequence of the state GSL laws is to make both the RLD and generic firms unlikely to engage in promotion and detailing because of free riding by other generics. Otherwise, one could rely on promotion by generic firms and not state GSL laws to make cheaper generic drugs available to consumers. If consumer access to cheap and effective generic treatments is generated, as some have suggested, by promotion induced agency costs on the part of doctors, insurers, or pharmacy benefit managers, then any regulatory solution should focus on attempting to address these agency costs, rather than creating an artificial parasitic form of

Benjamin Klein & Kevin M. Murphy, *Vertical Restraints as Contract Enforcement Mechanisms*, 31 J.L. & ECON. 265 (1988).

¹²⁹ See Jerry A. Hausman, *Valuation of New Goods Under Perfect and Imperfect Competition*, in THE ECONOMICS OF NEW GOODS 209 (Timothy F. Bresnahan & Robert J. Gordon, eds., 1997); Amil Petrin, *Quantifying the Benefits of New Products: The Case of the Minivan*, 110 J. POL. ECON. 705 (2002).

¹³⁰ See, e.g., Carrier & Shadowen, *supra* note 127, at 197 (Doryx); Shepherd, *supra* note 93, at 674–80 (discussing other product hopping cases).

¹³¹ See Donald J. Boudreaux, *Some Sins of Textbook Economics*, FOUND. FOR ECON. EDUC. (Jan. 4, 2012), <https://fee.org/articles/some-sins-of-textbook-economics/> (noting that textbook models of perfect competition resemble nothing that occurs in the real world. In the world of the textbooks, firms don’t differentiate their products from those of their rivals. Firms never try to win more customers by improving the quality of their products. Also, firms don’t advertise. Indeed they don’t even cut prices because each “perfectly competitive” firm is a “price taker.”).

competition that makes the production of information by all of the sellers in the market unprofitable.

Moreover, trying to use antitrust as a gap filler to respond to the regulatory incentives created may generate more costs than benefits. Indeed, as Carlton et al. (2016) point out, cases based on a product hopping theory are “at best a misguided attempt to use antitrust law to fix a regulatory problem Using antitrust law to fix such a regulatory problem . . . would not only potentially cause consumer harm in pharmaceutical markets, but also create an undesirable antitrust precedent for other industries.”¹³² This is because, as noted above, the structure of antitrust law makes it a poor vehicle for addressing the particular regulatory problems created in product hopping cases. For starters, an antitrust claim under a product hopping theory would also require an antitrust evaluation that would have to undertake the difficult task of weighing any benefit from product innovation against any antitrust harm, a task that generalist antitrust courts would also be ill suited to undertake.¹³³ In addition, these claims would also require the creation of an antitrust duty for the branded company to continue selling what it views as an obsolete drug in order to allow its generic competitors to take advantage of GSLs.¹³⁴ Moreover, no such duty exists under existing antitrust standards, and under *Trinko* and *NYNEX*, regulatory obligations or the evasion

¹³² Dennis W. Carlton, Fredrick A Flyer, & Yoad Shefi, *Does the FTC’s Theory of Product Hopping Promote Competition?*, 12 J. COMPETITION L. & ECON. 495, 496 (2016).

¹³³ See Carrier & Shadowden, *supra* note 127 (suggesting use of the “no economic sense” test); Douglas H. Ginsburg, Koren Wong-Ervin, & Joshua D. Wright, *Product Hopping and the Limits of Antitrust: The Danger of Micromanaging Innovation*, COMPETITION POL’Y INT’L ANTITRUST BULL., Dec. 2015, <https://ssrn.com/abstract=2703597> (suggesting that any such inquiry be based on a sham innovation standard in order to minimize the costs of errors); Brett Dickey, Kun Huang, & Daniel L. Rubinfeld, *Pharmaceutical Product Hopping: Is There a Role for Antitrust Scrutiny?* 82 ANTITRUST L.J. 679 (2019) (examining alternatives). *But see* Dmitry Karshedt, *The More Things Change: Improvement Patents, Drug Modifications, and the FDA*, 104 IOWA L. REV. 1129 (2019) (suggesting regulatory disclosure solution to the problem).

¹³⁴ See Shepherd, *supra* note 93, at 702–705.

of regulatory obligations, without more, do not create antitrust violations.¹³⁵

CONCLUSION

Using ex-ante regulation to replace inefficient and ineffective ex-post litigation based antitrust is a familiar refrain for those interested in regulating large technology firms. But the narrative that antitrust is either solely or predominantly based on ex-post litigation is a false narrative, as both the current antitrust laws and its institutions incorporate many of the features that reformers put forth as ex-ante regulation. As a matter of optimal regulatory design, this is not surprising, as a true ex-ante approach will incorporate both approaches.

In the U.S., the Supreme Court has expanded its implied immunity and related common law limits on the use of the antitrust laws in response to the potential costs of inconsistent and overlapping regulation. This forces an ex-ante choice between antitrust and sector specific regulation when addressing specific problems associated with regulated industries. We suggest the ex-ante choice between antitrust and sector regulation be made based on the comparative institutional advantage of each approach, and that such an approach will result in the allocation of duties to deal and price setting to sector specific regulators. Because both approaches are imperfect vehicles for controlling competition, both the initial allocation between antitrust and regulation and the choice to regulate in the first place should be undertaken with caution, and expected to involve a long, slow, and costly evolution towards a more efficient system of antitrust

¹³⁵ See generally Kobayashi & Wright, *supra* note 76; Bruce H. Kobayashi & Joshua D. Wright, *The Limits of Antitrust and Patent Holdup: A Reply to Cary, et al.*, 78 ANTITRUST L.J. 505 (2012) (both discussing *NYNEX Corp. v. Discon, Inc.*, 525 U.S. 128 (1998)). Moreover, the use of fraudulent claims regarding a reformulated drug's relative efficacy can be and have been addressed through civil and criminal fraud actions. See, e.g., Press Release, U.S. Dep't of Justice, Justice Department Obtains \$1.4 Billion from Reckitt Benckiser Group in Largest Recovery in a Case Concerning an Opioid Drug in United States History (July 11, 2019), <https://www.justice.gov/opa/pr/justice-department-obtains-14-billion-reckitt-benckiser-group-largest-recovery-case>.

and regulation.

Evaluating the Case for Regulation of Digital Platforms

*Giuseppe Colangelo**

INTRODUCTION: THE CRISIS OF ANTITRUST IN THE DIGITAL ECONOMY

Antitrust enforcement and competition policy in the digital economy is high on the agenda of authorities and policymakers. The flood of reports and policy papers recently released reflects the ongoing debate over the capability of current antitrust rules and tools to handle the emergence of large technology platforms (BigTechs) and to scrutinize their practices and business models.

The distinctive features of digital markets apparently require a rethinking of the antitrust regime. The presence of strong economies of scale, extreme indirect network effects, remarkable economies of scope due the role of data as a critical input, and conglomerate effects, along with consumers' behavioural biases and single-homing tendencies, represent significant barriers to entry that make digital markets highly concentrated, prone to tipping, and not easily contestable. Therefore, large incumbent players appear not to be under threat and hard to dislodge. Moreover, digital platforms act as gatekeepers (either by controlling the access of third-party firms to their users or controlling the consumption of products and services by their users) and regulators (due to their rule-setting role within their ecosystem), and frequently play a dual role, being simultaneously operators for the marketplace and sellers of their own products and services in competition with rival sellers.

In light of this, mounting criticism against current competition policy allege that lax antitrust enforcement, flawed judicial rules that reflect unsound economic theories or unsupported empirical claims, and the limited effectiveness of the antitrust toolkit have

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contributed to a significant increase in concentration in digital markets.¹ Furthermore, antitrust litigation and enforcement are deemed to be too protracted and expensive, causing ambiguity, draining resources, and privileging incumbents.² Despite the Department of Justice's Antitrust Division (DOJ) ongoing reviewing of whether and how certain online platforms have achieved market power and are engaging in anti-competitive practices³ and the Federal Trade Commission's (FTC) launching of an *ex post* evaluation of BigTech acquisitions,⁴ there is strong scepticism and criticism surrounding the efficacy of antitrust investigations. Too little, too late.

By this view, the only cure to the antitrust crisis is to implement a wave of regulatory reforms. Despite concerns about the effective implementation of reform proposals aimed at providing greater control of BigTechs' practices,⁵ and doubts about

¹ AMERICAN ANTITRUST INSTITUTE, *THE STATE OF ANTITRUST ENFORCEMENT AND COMPETITION POLICY IN THE U.S.* (2020); Joint Response to the House Judiciary Committee, Antitrust Experts for the Washington Center for Equitable Growth, *State of Antitrust Law and Implications for Protecting Competition in Digital Markets* (April 30, 2020), <https://equitablegrowth.org/wp-content/uploads/2020/04/Joint-Response-to-the-House-Judiciary-Committee-on-the-State-of-Antitrust-Law-and-Implications-for-Protecting-Competition-in-Digital-Markets.pdf>; U.S. HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON ANTITRUST, COMMERCIAL, AND ADMINISTRATIVE LAW, *INVESTIGATION OF COMPETITION IN DIGITAL MARKETS, MAJORITY STAFF REPORTS AND RECOMMENDATIONS* (October 2020)[hereinafter HOUSE OF REPRESENTATIVES REPORT]. See also Carl Shapiro, *Protecting Competition in the American Economy: Merger Control, Tech Titans, Labor Markets*, 33 J. ECON. PERSP. 69 (2019) (urging to reinvigorate antitrust enforcement in the U.S. in three areas, e.g., merger control, the treatment of exclusionary conduct by dominant firms, and the market power of employers as buyers in labor markets); Spencer Weber Waller, *Submission to the U.S. House Judiciary Antitrust Subcommittee Investigation of Digital Platforms* (April 28 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3567376 (arguing that the U.S. has become “a laggard, and not a leader” in the formulation of global competition policy).

² Rohit Chopra & Lina M. Khan, *The Case for “Unfair Methods of Competition” Rulemaking*, 87 UNIV. CHI. L. REV. 357, 368 (2020).

³ U.S. DEPARTMENT OF JUSTICE, *JUSTICE DEPARTMENT REVIEWING THE PRACTICES OF MARKET-LEADING ONLINE PLATFORMS* (2019).

⁴ U.S. FEDERAL TRADE COMMISSION, *FTC TO EXAMINE PAST ACQUISITIONS BY LARGE TECHNOLOGY COMPANIES* (2020).

⁵ Alison Jones & William E. Kovacic, *Antitrust's Implementation Blind Side: Challenges to Major Expansion of U.S. Competition Policy*, ANTITRUST BULLETIN (forthcoming 2020). See also U.S. COUNCIL OF ECONOMIC ADVISERS, *ECONOMIC REPORT OF THE PRESIDENT* 22 (2020).

the nostalgia for past adventures,⁶ and even despite the common understanding reached by G7 competition authorities in June 2019—i.e. challenging issues raised by digital markets are not beyond the reach of antitrust law and many of the features of digital markets can be successfully addressed with existing toolkits since antitrust ensures a flexible framework and a fact-based, cross-sectoral and technology-neutral analysis⁷—regulation is back on the table for policy discussions. Quite surprisingly, it is also on the minds of members of the mainstream antitrust communities.⁸

Notably, some proposals envisage a public utilities-style regulation for the digital economy, advocating the creation of a digital authority able to impose measures against companies that have a strategic market status.⁹ Some proponents go even further by suggesting break-ups and bans on vertical integration altogether in order to address economic and social concerns arising from BigTechs.¹⁰ Other reform proposals point to

⁶ Christine S. Wilson & Keith Klovers, *The Growing Nostalgia for Past Regulatory Misadventures and the Risk of Repeating These Mistakes with Big Tech*, 8 J. ANTITRUST ENF'T 10 (2020). See also Jean Tirole, *Competition and the Industrial Challenge for the Digital Age*, (unpublished manuscript) (April 3, 2020) (considering old-style regulation impractical in an era of global firms, rapid technological progress and contestable markets) https://www.tse-fr.eu/sites/default/files/TSE/documents/doc/by/tirole/competition_and_the_industrial_challenge_april_3_2020.pdf.

⁷ G7 COMPETITION AUTHORITIES, COMMON UNDERSTANDING ON COMPETITION AND THE DIGITAL ECONOMY (2019).

⁸ A. Douglas Melamed, *Antitrust Law and its Critics*, 83 ANTITRUST L. J. (forthcoming 2020).

⁹ STIGLER COMMITTEE FOR THE STUDY OF DIGITAL PLATFORMS, MARKET STRUCTURE AND ANTITRUST SUBCOMMITTEE (2019); UK COMPETITION AND MARKETS AUTHORITY, *Online Platforms and Digital Advertising*, in MARKET STUDY REPORT (2020); UK DIGITAL COMPETITION EXPERT PANEL, *Unlocking digital competition*, in REPORT OF THE DIGITAL COMPETITION EXPERT PANEL (March 2019).

¹⁰ Lina M. Khan, *The Separation of Platforms and Commerce*, 119 COLUM. L. REV. 973 (2019); Open Markets Institute, *Restoring Antimonopoly Through Bright-Line Rules*, OPEN MARKETS (April 26, 2019), <https://openmarketsinstitute.org/op-eds-and-articles/restoring-antimonopoly-bright-line-rules/>; K. Sabeel Rahman, *Regulating informational infrastructure: Internet Platforms as the New Public Utilities*, 2 GEO. L. TECH. REV. 234 (2018); Matt Stoller, Sarah Miller, & Zephir Teachout, *Addressing Facebook and Google's Harms Through a Regulated Competition Approach* (Am. Econ. Liberties Project, Working Paper No. 2, 2020), https://static1.squarespace.com/static/5df44e0792ff6a63789b5c02/t/5e90c1f1f177386f95c33662/1586545139529/Working+Paper+Series+on+Corporate+Power_2.pdf; JONATHAN TAPLIN, MOVE FAST AND BREAK THINGS: HOW FACEBOOK, GOOGLE, AND AMAZON CORNERED CULTURE AND UNDERMINED DEMOCRACY (2019); U.S. HOUSE OF REPRESENTATIVES REPORT, *supra* note 1, at 380; Rory Van Loo, *In Defense of Breakups: Administering*

the need to integrate the antitrust toolkit with *ex ante* prohibitions to prevent anti-competitive practices by dominant platforms, since, according to this view, there is a risk that *ex post* enforcement would be too slow to successfully keep markets competitive and contestable in fast-moving markets characterized by a winner-takes-most dynamic.¹¹

Although the proposed solutions might diverge and reflect a heavy regulatory approach to antitrust law rather than the traditional paradigm of economics-based regulation,¹² all the proposals question the role of antitrust in the digital economy and some suggest that online platforms should be treated as common carriers.¹³

The aim of this chapter is to analyze recently released reports and policy papers to evaluate whether regulatory interventions reflect the distinctive features of digital markets and their leading players or whether the main thrust of these proposals for regulatory interventions is just to circumvent the burdens imposed by standard antitrust

a 'Radical' Remedy, CORNELL L. REV. (forthcoming 2020); TIM WU, THE CURSE OF BIGNESS: ANTITRUST IN THE NEW GILDED AGE (2018).

¹¹ European Commission, *Proposal for a Regulation of Digital Services Act Package, Ex Ante Regulatory Instrument for Large Online Platforms With Significant Network Effects Acting as Gatekeepers in the European Union's Internal Market*, Inception Impact Assessment (June 02, 2020), <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12418-Digital-Services-Act-package-ex-ante-regulatory-instrument-of-very-large-online-platforms-acting-as-gatekeepers>; Joint Memorandum from Belgian Competition Authority, Dutch Authority for Consumers & Markets, and Luxembourg Conseil de la Concurrence, *Challenges Faced by Competition Authorities in a Digital World* (October 10, 2019) <https://www.belgiancompetition.be/en/about-us/publications/joint-memorandum-belgian-dutch-and-luxembourg-competition-authorities>; FRENCH COMPETITION AUTHORITY, *Contribution to the Debate on Competition Policy and Digital Challenges*, (2020) https://www.autoritedelaconcurrence.fr/sites/default/files/2020-03/2020.03.02_contribution_adlc_enjeux_numeriques_vf_en_0.pdf; German Commission 'COMPETITION LAW 4.0', A NEW COMPETITION FRAMEWORK FOR THE DIGITAL ECONOMY (2019),.

¹² Marco Cappai & Giuseppe Colangelo, *Navigating the Platform Age: the 'More Regulatory Approach' to Antitrust Law in the EU and the U.S.*, (Stanford-Vienna Trans-Atlantic Tech. L. F. Working Paper No. 55, 2020), <https://law.stanford.edu/transatlantic-technology-law-forum/ttlf-working-paper-series/>.

¹³ The only exceptions to this are the proposals by the antitrust authorities of the Brazilian, Russian, Indian, and South African (BRICS) countries, which consider the respective antitrust tools and methods suitable to cope with the challenges of digital markets. See BRAZILIAN, RUSSIAN, INDIAN, AND SOUTH AFRICAN COMPETITION AUTHORITIES, BRICS IN THE DIGITAL ECONOMY: COMPETITION POLICY IN PRACTICE 41 (2019). However, Russia maintains that its competition law requires 'digital' amendments to address some issues related to the classification of certain market players and pricing algorithms, and to strengthen merger control.

analysis. My findings suggest that the revival of regulation is likely motivated by an alleged antitrust enforcement failure as a result of an alleged gap in the current antitrust rules, rather than by an authentic market failure.

The chapter is structured as follows. Section 1 illustrates the key features of the main reform proposals advanced in the U.S. and the EU. Section 2 explains how the emergence of large online platforms may shift the current equilibrium between antitrust and regulation. Section 3 provides a critical analysis of the implications and the shortcomings of the suggested regulatory interventions. Section 4 concludes by suggesting drivers and goals of the competition policy in digital economy.

I. BRIEF OVERVIEW OF THE MAIN REGULATION PROPOSALS

This Section provides a descriptive analysis of the most prominent reports (namely, those released by the UK Digital Competition Expert Panel, the Stigler Center, the EU Commission Experts, the UK Competition and Markets Authority, and the Australian Competition and Consumer Commission) to highlight their main *ex ante* policy recommendations and give the reader the necessary background for the critical scrutiny that will be presented in the following sections.

The UK Digital Competition Expert Panel (or the “Furman report”) opened the floor to debate, being the first to suggest an *ex ante* regulation to sustain and promote effective competition in digital markets.¹⁴ Notably, the Furman report advocates the appointment of a sectoral regulator (a pro-competition digital markets unit) to impose measures against companies holding a strategic market status.¹⁵ As a new dominance category, companies with strategic market status are defined as those in a position to exercise market power over a gateway or bottleneck in a digital market, where they control others’ market access.

¹⁴ UK DIGITAL COMPETITION EXPERT PANEL, *supra* note 9.

¹⁵ *Id.* at 55.

The Furman report recommends establishing a code of conduct for digital platforms with a strategic market status based on a set of core principles aimed at ensuring that business users: (i) are provided with access to designated platforms on a fair, consistent, and transparent basis; (ii) are provided with prominence, rankings, and reviews on designated platforms on a fair, consistent, and transparent basis; and (iii) are not unfairly restricted from utilising alternative platforms or routes to market.¹⁶ Accordingly, the code of conduct should prohibit or proscribe certain conduct by platforms with a strategic market status. As illustrative examples of the forms of behaviour considered unfair or unreasonable, the report mentions the following cases: an online marketplace excluding or suspending rival sellers from its platform to give its own product or service an advantage; a platform that contains a search function giving an unfair advantage to its own services over its rivals in downstream markets through the ranking or presentation of results; and an online platform penalizing a business user for providing a more attractive offering on another site.¹⁷

Besides establishing a platform code of conduct, the digital regulator should also expand data openness where access to non-personal or anonymized data will tackle the key barrier to entry in a digital market and should promote personal data mobility and systems with open standards.¹⁸ In this regards, Open Banking is mentioned as an instructive example showing the potential for data mobility to provide new opportunities to compete and innovate.¹⁹

A similar public utility regulation is endorsed by the Stigler Center report, which supports the establishment of a digital authority and a special regulation for firms with

¹⁶ *Id.* at 61.

¹⁷ *Id.* at 61.

¹⁸ *Id.* at 68, 71, 74.

¹⁹ *Id.* at 69–70.

bottleneck power.²⁰ Notably, the new regulator should be tasked with the goals of defining and addressing bottleneck power, designing data sharing rules to reduce single-homing, collecting data on market transactions, creating “light touch” rules (behavioral nudges) that can lead consumers to make better choices, ensuring data portability, creating open standards to promote competition, exercising additional power over merger review, and overseeing the creation of open interoperability standards.²¹

A special regulation is advocated for digital firms that meet the definition of bottleneck power, i.e. a situation where consumers primarily single-home and rely upon a single service provider, which makes obtaining access to those consumers for the relevant activity by other service providers prohibitively costly.²² In these cases, the digital authority should be given merger review authority over all transactions and strategies aimed at discouraging multi-homing and discriminating against rivals should be prohibited.²³

Nonetheless, the Stigler Center report also puts forth recommendations to enhance antitrust enforcement, in particular by relaxing the proof requirements or reversing the burden of proof in appropriate cases.²⁴ This suggests adopting rules that presume anticompetitive harm on the basis of preliminary showings by antitrust plaintiffs and shifting the burden of exculpation to the defendant to ensure that plaintiffs would not be required to prove matters of which the defendants have greater knowledge and better access to relevant information. More generally, according to the report, because underenforcement is likely to be costlier than previously thought, it is time for antitrust law to recalibrate the balance it strikes between the risks of false positives and false

²⁰ STIGLER COMMITTEE FOR THE STUDY OF DIGITAL PLATFORMS, *supra* note 9, at 79, 83–85.

²¹ *Id.* at 79 and 85–92.

²² *Id.* at 79, 84.

²³ *Id.* at 92–95.

²⁴ *Id.* at 77.

negatives.²⁵

The report released by the EU Commission Experts, however, does not envision a new type of public utility style regulation emerging for the digital economy, considering the risks associated with such a regime (rigidity, lack of flexibility, and risk of capture) too high.²⁶ Rather, by their view, the most promising road is a more vigorous competition policy regime achievable within the general antitrust framework.²⁷ Indeed, “competition law can and should, for the foreseeable future, continue to accompany and guide the evolution of the platform economy,” because its “case law method is particularly well suited for the current state of evolution of the platform economy: a still experimental stage, where the efficiencies of different forms of organization are not yet well understood and our knowledge and understanding still needs to evolve step by step.”²⁸

Nonetheless, a regulatory regime may be needed in the longer run, in particular in those areas that require an ongoing implementation and oversight to ensure, for instance, interoperability through a mandated sharing of data.²⁹

In their view, the main change of paradigm should reside in the balance of error costs and in the predominance of legal testing instead of the effects-based approach.³⁰ Under-enforcement in the digital era would be of particular concern because, when considering the stickiness of market power, the harm would presumably last longer than in traditional markets. Therefore, even if consumer harm cannot be precisely measured, strategies employed by dominant platforms to reduce the competitive pressure should

²⁵ *Id.* at 74. For more on error cost analysis, see Geoff Manne, *Error Costs in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

²⁶ JACQUES CRÉMER, YVES-ALEXANDRE DE MONTJOYE, & HEIKE SCHWEITZER, COMPETITION POLICY FOR THE DIGITAL ERA 126 (2019).

²⁷ *Id.* at 14.

²⁸ *Id.* at 70.

²⁹ *Id.* at 70, 126.

³⁰ *Id.* at 50–51.

be forbidden in the absence of clear consumer welfare gains.³¹ Such a shift would impact the burden of proof as well as the standard of proof itself. Specifically, when certain conditions are met, it would be the defendant's burden to demonstrate the pro-competitiveness of the conduct.

Moreover, the EU Commission Experts' report suggests introducing a special responsibility for digital platforms. Indeed, because of their gatekeeper status, digital platforms are unavoidable trading partners in a wide range of contexts³² and exercise an intermediation power even in apparently fragmented marketplaces.³³ Further, platforms often perform a regulatory, setting up the rules and institutions through which their users interact, and play a dual role as umpires and players in their ecosystem.³⁴ Hence, The EU Commission Experts Recommend that dominant platforms should have a responsibility to ensure that competition on their platforms is fair, unbiased, and pro-users.³⁵

Finally, interesting insights can be found in the inquiries conducted by the UK Competition and Markets Authority (CMA) and the Australian Competition and Consumer Commission (ACCC) into digital advertising markets.

Notably, the CMA has welcomed the proposals advanced by the UK Digital Competition Expert Panel for the development of a pro-competitive *ex ante* regulatory regime for advertising-supported platforms.³⁶ Hence, it supports the appointment of a dedicated regulatory body to implement an enforceable code of conduct that would govern the behavior of platforms enjoying a strategic market status and to introduce a range of pro-competitive interventions aimed at tackling the sources of market power

³¹ *Id.* at 41–42.

³² *Id.* at 49.

³³ *Id.* at 70.

³⁴ *Id.* at 60.

³⁵ *Id.* at 61.

³⁶ UK COMPETITION AND MARKETS AUTHORITY, *supra* note 9.

and promoting competition and innovation.³⁷ With regards to the latter category of measures, the newly-established digital market unit should have powers not only to implement a range of data-related remedies, including data mobility, systems with open standards and open data, but also to introduce different forms of separation (from operational to full ownership separation).³⁸

The ACCC believes that the existing tools and goals of the competition law framework remain applicable for digital markets, but that there are conditions which limit the effectiveness of the broad prohibition on misuses of market power.³⁹ Hence, the ACCC opts for the creation of a specialist digital platforms branch within the antitrust agency to supplement existing investigative tools with additional proactive investigatory, monitoring, and enforcement powers.⁴⁰ The ACCC considers that it would be appropriate for the antitrust authority to carry out these functions, rather than a new regulator.

According to the Australian authority, there is international evidence that digital platforms have engaged in anti-competitive leveraging behavior in the past and have the ability and incentive to engage in this type of behavior in the future,⁴¹ and that the risk of leveraging behavior is indeed increasing as digital platforms expand into other markets. Existing investigation and enforcement mechanisms have proved flexible enough to address some competition and consumer issues in digital markets, but are not adequate to deal with all issues. Despite the focus of its investigation being on dominant players (Google and Facebook), the ACCC recommends that the new proactive investigation, monitoring and enforcement powers extend to all digital platforms.

³⁷ *Id.* at 21–22.

³⁸ *Id.* at 24.

³⁹ AUSTRALIAN COMPETITION AND CONSUMER COMMISSION, DIGITAL PLATFORMS INQUIRY 138 (2019).

⁴⁰ *Id.* at 140–142.

⁴¹ *Id.* at 133.

Finally, the Australian inquiry revealed that Google and Facebook exert substantial bargaining power in their dealings with media businesses.⁴² Indeed, a significant number of media businesses rely on news referral services from Google and Facebook to such a degree that Google and Facebook are each unavoidable trading partners.⁴³ In this regard, the ACCC suggests the adoption of a code of conduct to address the imbalance of bargaining power between digital platforms and media businesses.⁴⁴

II. THE REVIVAL OF ECONOMIC REGULATION

Because of their overlap in addressing market power, the interplay between antitrust and regulation has been long debated and the pendulum has often swung back and forth from rivalry to complementarity.

In application of a ‘plain repugnancy’ standard, U.S. antitrust laws have for long predominated over regulation.⁴⁵ However, more recently the Supreme Court has shifted the balance, giving deference to federal regulation because of expertise and cost concerns.⁴⁶ Where a regulatory structure designed to deter and remedy anti-competitive harm already exists, the additional benefit to competition provided by antitrust enforcement usually tends to be small. Furthermore, the risk and cost of false positive

⁴² *Id.* at 99–105.

⁴³ *Id.* at 217–221.

⁴⁴ *Id.* at 255–257.

⁴⁵ See *United States v. Trans-Missouri Freight Association*, 166 U.S. 290 (1897); *United States v. Philadelphia National Bank*, 374 U.S. 321 (1963); *Otter Tail Power Co. v. United States*, 410 U.S. 366 (1973).

⁴⁶ See *NYNEX Corp. v. Discon Inc.*, 525 U.S. 128 (1998); *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398 (2004); *Credit Suisse Securities (USA) LLC v. Billing*, 551 U.S. 264 (2007); *Pacific Bell Tel. Co. v. linkLine Communications, Inc.*, 555 U.S. 438 (2009). Further, according to the state action doctrine, since *Parker v. Brown*, 317 U.S. 341 (1943) the Supreme Court has exempted activities regulated under state law from the application of federal antitrust laws when the challenged activities are clearly articulated and affirmatively expressed as state policy and as long as the state actively supervises the implementation of its policy. See Frank H. Easterbrook, *Antitrust and the Economics of Federalism*, 26 J. L. & Econ. 23 (1983). However, in *North Carolina State Board of Dental Examiners v. Federal Trade Commission*, 574 U.S. 494 (2015), the Court has recently limited the state-action immunity doctrine arguing that, if a state wants to rely on active market participants as regulators, it must provide active supervision.

antitrust violations are considered especially significant, because they may stifle the very conduct that antitrust law is designed to protect. Moreover, there may also be anti-competitive violations that are beyond the practical enforcement ability of an antitrust court and may require day-to-day supervision of a highly detailed degree. Therefore, where antitrust law and a regulation addressing a conduct would produce conflicting guidance, requirements, duties, privileges, or standards, such conduct is considered immune from antitrust liability and supervised by the regulatory authority.⁴⁷

This implied antitrust immunity has been harshly criticized.⁴⁸ The limitations of blind faith in regulatory oversight have been well explained, not solely in light of the risks of regulatory capture, as framed by private-interest and public choice theories.⁴⁹ Even the most competition-conscious regulatory structure cannot preclude abuses of that structure, since the very structure that exists to promote competition can also create opportunities for rivals to achieve anti-competitive goals. As noted by Stacey Dogan and Mark Lemley, the risk of a strategic implementation of the regulatory framework (regulatory gaming) undermines both the regulatory system and the longstanding complementary relationship between regulation and antitrust, and provides the need for

⁴⁷ See *Credit Suisse Securities*, 551 U.S. at 278–79. See also Bruce H. Kobayashi & Joshua D. Wright, *Federalism, Substantive Preemption, and Limits on Antitrust: An Application to Patent Holdup*, 5 J. COMPETITION L & ECON. 469 (2009); Bruce H. Kobayashi & Joshua D. Wright, *The Limits of Antitrust and Patent Holdup: A Reply to Cary et al.*, 78 ANTITRUST L. J. 505 (2012).

⁴⁸ See, e.g., Richard M. Brunnell, *In Regulators We Trust: The Supreme Court's New Approach to Implied Antitrust Immunity*, 78 ANTITRUST L. J. 279 (2012); Stacey L. Dogan & Mark A. Lemley, *Antitrust Law and Regulatory Gaming*, 87 TX. L. REV. 687 (2009); *Is There Life After Trinko and Credit Suisse? The Role of Antitrust in Regulated Industries: Hearing Before the Subcomm. On Courts and Competition Policy, 11th Cong. (2010)* (Prepared Statement of The Federal Trade Commission); Howard A. Shelanski, *The Case for Rebalancing Antitrust and Regulation*, 109 MICH. L. REV. 683 (2011). The “Anticompetitive Exclusionary Conduct Prevention Act” bill recently introduced into the U.S. Congress by Senator Klobuchar would narrow the scope of implied antitrust immunity by adding that regulatory authority rules should “explicitly require or authorize” the defendant to undertake the conduct. See Anticompetitive Exclusionary Conduct Prevention Act of 2020, S. 3426 116th Cong. (2020),

⁴⁹ For more on public choice theory, see Thom Lambert, *Rent Seeking and Public Choice in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

ongoing antitrust oversight of regulated industries.⁵⁰ Moreover, the cost of false positives cannot be overstated. Rather, quite ironically, the concerns raised by recent reports on digital markets have been focused on antitrust under-enforcement, since the harm to competition is expected to be longer term than in traditional markets because of the stickiness of market power.

On the other side of the Atlantic, the European Court of Justice (CJEU) has expressed greater support for the application of antitrust rules in regulated industries. Notably, regarding the margin squeeze of competitors, the CJEU has ruled that the approval by a national sectoral regulator of a dominant undertaking's pricing practices cannot, as such, absolve that undertaking from responsibility under antitrust rules.⁵¹ It is only if anti-competitive behaviour is required by national legislation, or if such legislation creates a legal framework that eliminates any possibility of competitive activity, that a dominant player may escape liability (the so-called 'State action defence').⁵²

However, the regulatory framework is not considered irrelevant to the antitrust analysis. In the highly-regulated pharmaceutical industry, the CJEU intervened against the risks of regulatory gaming, stating that on the one hand, a dominant undertaking cannot use regulatory procedures in such a way as to prevent or impede the entry of competitors in the market,⁵³ and on the other hand, that the assessment of whether potential competition must be carried out in consideration of the regulation constrains the industry's valuable characteristics.⁵⁴ In this regard, the European antitrust authorities

⁵⁰ Dogan & Lemley, *supra* note 48.

⁵¹ CJEU, 14 October 2010, Case C-280/08 P, *Deutsche Telekom v. European Commission*, paras. 80-85; CJEU, 10 July 2014, Case C-295/12 P, *Telefónica SA and Telefónica de España SAU v European Commission*. See also EU General Court, 13 December 2018, Case T-851/14, *Slovak Telekom v. European Commission*.

⁵² CJEU, 9 September 2003, Case C-198/01, *Consorzio Industrie Fiammiferi (CIF) v. Autorità Garante della Concorrenza e del Mercato*, para. 53.

⁵³ CJEU, 6 December 2012, Case C-457/10 P, *AstraZeneca v. European Commission*, para. 134.

⁵⁴ CJEU, 30 January 2020, Case C-307/18, *Generics UK Ltd and others v. Competition and Markets Authority*, para. 40.

and courts have embraced the same approach of their U.S. colleagues, by strongly challenging the tool-box of instruments (including product hopping⁵⁵ and reverse payment settlements⁵⁶) implemented by branded drug companies to manipulate the patent and drug approval system with the aim of limiting or impeding competition from generics.

To sum up, the choice between antitrust and regulation greatly depends on the trade-offs in each specific case. Notably, it requires assessment of whether *ex ante* regulatory intervention in the market furnishes significant incremental benefits with respect to existing *ex post* antitrust policies of general applicability. This approach has, for instance, recently fuelled the debate on net neutrality regulation in the U.S..⁵⁷

The push towards a regulatory approach as the most viable policy option to address antitrust concerns in digital markets is essentially driven by two arguments. First, long-lasting antitrust investigations appear ill-suited to effectively address the fast-moving dynamics of digital markets since there is a risk that *ex post* enforcement will come too late to keep markets competitive and contestable. Second, BigTechs enjoy a brand-new type of market power which implies greater responsibilities and justifies specific responses. Indeed, large digital platforms manage to combine a gatekeeping or bottleneck position in the digital ecosystem with a parallel role of rule-setting or regulation within the established digital environment. Online platforms develop ranking algorithms, determine the conditions under which a business can enter the network, and fix the criteria governing the suspension, delisting, dimming, or termination of their accounts and of the associated goods/services sold via the platform. Such actions are

⁵⁵ See, e.g., Reckitt Benckiser Group PLC, Case No: 1:19CV00028 (preliminary) (2019).

⁵⁶ FTC v. Actavis, 570 U.S. 136 (2013).

⁵⁷ See, e.g., A. Douglas Melamed & Andrew W. Chang, *What Thinking About Antitrust Law Can Tell Us About Net Neutrality*, 15 COLO. TECH. L. J. 93 (2016); Maureen K. Ohlhausen, *Antitrust Over Net Neutrality: Why We Should Take Competition in Broadband Seriously*, 15 COLO. TECH L. J. 119 (2016).

perceived as particularly threatening when a BigTech performs a dual role, acting as both an intermediary and a trader operating on the platform, because it may have the incentive to discriminate to its own benefit.⁵⁸

A. Breakup and Public Utilities-Style Regulation

From the reports and policy papers released so far, two different policy options emerge to address the regulation of digital platforms.

According to the first approach, a public utilities-style regulation for the digital economy should be established. As stated by the Stigler Center report, it is important that antitrust law not have different rules aimed at different sectors that would differentiate industries and undermine general political support for antitrust law.⁵⁹ For this reason, the Stigler Center, the UK Furman, and the UK CMA reports advocate the appointment of a sectoral regulator (digital authority) to impose measures against companies holding a strategic market status.⁶⁰ The ACCC prefers the creation of a digital platforms branch within the antitrust agency to supplement existing investigative tools with additional proactive investigation, monitoring, and enforcement powers.⁶¹

⁵⁸ According to the baseball analogy used by US Senator Warren, “you get to be the umpire or you get to have a team in the game—but you don’t get to do both at the same time” Warren Democrats, Tweet (Oct. 15, 2019), <https://twitter.com/TeamWarren/status/1184295385562599424>. See also Margrethe Vestager, Statement before the U.S. House of Representatives Subcommittee on Antitrust, Commercial, and Administrative Law 2 (July 30, 2020), <https://www.euractiv.com/wp-content/uploads/sites/2/2020/07/Statement-EVP-Vestager-House-SubCommittee-30-July.pdf>, adopting another sporting analogy to underline the relevance of the dual role and stating that the platform is both a player on the downstream market against rivals, and at the same time is the referee which determines the conditions of that competition on the upstream platform.

⁵⁹ STIGLER COMMITTEE FOR THE STUDY OF DIGITAL PLATFORMS, *supra* note 9, at 73.

⁶⁰ *Id.* at 78–79, 83–92; UK COMPETITION AND MARKETS AUTHORITY, *supra* note 9, at 22; UK DIGITAL COMPETITION EXPERT PANEL, *supra* note 9, at 5.

⁶¹ AUSTRALIAN COMPETITION AND CONSUMER COMMISSION, *supra* note 21, at 138–42 and 255–57. See also AUSTRALIAN GOVERNMENT, *Regulating in the Digital Age*, in GOVERNMENT RESPONSE AND IMPLEMENTATION ROADMAP FOR THE DIGITAL PLATFORMS INQUIRY (2019) (committing \$27 million over four years for a Digital Platforms Branch within the ACCC).

Within this line of reasoning, a different (and harder) solution is proposed by the supporters of the “breakup and regulate” approach. Notably, former U.S. Democratic Party presidential candidate Elizabeth Warren has proposed restoring competition in the technology sector by designating BigTechs as ‘platform utilities’ that should be prevented from competing on their own platforms.⁶² According to the forthcoming “Anti-Monopoly and Competition Restoration Act,” that was reportedly drafted by Senator Warren, a firm that serves as both a platform and a merchant that competes with third-party merchants would presumptively be considered abusing its market power.⁶³ Further, in October 2019 the “Keep Big Tech out of Finance Act” was introduced before the House of Representatives (H.R. 4813).⁶⁴ If enacted, the bill would prohibit technology companies (“large platform utilities” predominately engaged in the business of offering to the public an online marketplace, an exchange, or a platform for connecting third parties) that have an annual global revenue of over twenty-five billion dollars from either acting as a financial institution or being affiliated with a financial institution.

In a similar vein, Lina Khan, the Open Markets Institute, and the American Economic Liberties Project invite the recovery of the common carriage regime and the use of structural remedies to ensure that new bottleneck facilities do not distort competition.⁶⁵ By this view, the best way to preserve competition and other essential values of a democratic society (such as privacy, free speech, and non-discrimination) is to ban any vertical integration. Releasing the findings of its investigation, the U.S. House Judiciary Committee’s Antitrust Subcommittee has shared these concerns and recommended the consideration of legislative reforms drawing on both structural

⁶² Warren, *supra* note 10. See also TIM WU, *THE MASTER SWITCH: THE RISE AND FALL OF INFORMATION EMPIRES* (2011).

⁶³ Proposed Legislation, Anti-Monopoly and Competition Restoration Act, (March 10, 2020), https://www.hausfeld.com/uploads/documents/2019_12_02_Warren_draft_antitrust_bill.pdf.

⁶⁴ Keep Big Tech Out of Finance Act of 2019, H.R. 4813, 116th U.S. Congress, (2019).

⁶⁵ Khan, *supra* note 10; Open Markets Institute, *supra* note 10; Stoller, Miller, & Teachout, *supra* note 10.

separation and line of business restrictions in order to reduce the conflicts of interest faced by dominant platforms functioning as critical intermediaries.⁶⁶

Conversely, the Stigler Center and the Furman reports consider the option of the structural separation very disruptive, while other tools offer a more targeted, more pro-business, and pro-consumer solution to foster competition in digital markets.⁶⁷ Namely, the Furman report and the CMA point to the implementation of an enforceable code of conduct for platforms with strategic market status.⁶⁸ However, the CMA is also open to exploring the separation of Google and Facebook as a remedy to address concerns around transparency, conflicts, and market power in the advertising intermediation, i.e., the so-called “ad tech stack.”⁶⁹ In contrast, the ACCC reaches a different outcome. The ACCC does not recommend that either Google or Facebook divest their subsidiary businesses, but rather relies exclusively on the adoption of a code of conduct to address the imbalance of bargaining power between digital platforms and media businesses.⁷⁰

⁶⁶ U.S. HOUSE OF REPRESENTATIVES, *supra* note 1, at 380.

⁶⁷ STIGLER COMMITTEE FOR THE STUDY OF DIGITAL PLATFORMS, *supra* note 9, at 80; UK DIGITAL COMPETITION EXPERT PANEL, *supra* note 9, at 77. *See also* AMERICAN ANTITRUST INSTITUTE, *supra* note 1, at 37, noting that the rare historical breakup remedies fashioned through antitrust law were applied in sectors that are very different from the digital ecosystems; Herbert Hovenkamp, *House Judiciary Inquiry into Competition in Digital Markets: Statement of Herbert Hovenkamp* 6 (Univ. Pa. Inst. L. & Econ. Research Paper No. 20-38, 2020), seeing “little merit in various proposals to break up large digital platforms such as Amazon or Facebook. These proposals appear to see size itself as the wrong to be proscribed and offer little assurance that price or output will improve. The opposite is more likely. The United States does not have a good track record with enforced breakups for monopolistic practices. . . . Also highly problematic is one popular “quasi” breakup proposal, which is that Amazon be required to establish separate platforms for sales of its own products and the numerous sales it makes as a broker for other merchants. The principal victims will be consumers, and the principal beneficiaries will be other large businesses whose products Amazon currently sells”; Tirole, *supra* note 6, raising several reservations about divestitures in the tech industry, because of the difficulty to identify a stable essential facility, the risk of destroying the benefits of network externalities, and the possibility that dominant firms may strategically intertwine different services to make it difficult for authorities to “unscramble the eggs.”

⁶⁸ UK DIGITAL COMPETITION EXPERT PANEL, *supra* note 9, at 57, 61; UK COMPETITION AND MARKETS AUTHORITY, *supra* note 9, at 22–23.

⁶⁹ UK COMPETITION AND MARKETS AUTHORITY, *supra* note 9, at 24.

⁷⁰ *See* AUSTRALIAN COMPETITION AND CONSUMER COMMISSION, *supra* note 21, at 116–17, mentioning three

B. The More Regulatory Approach: Blacklisted Practices and Legal Presumptions

A second approach to the regulation of digital platforms is embraced by several European antitrust authorities. We may define it as the “more regulatory” approach to antitrust law because, instead of endorsing the explicit adoption of a public utilities-style regulation for the digital economy and the appointment of a digital agency as sectoral regulator, proponents of the “more regulatory” approach aim at integrating the antitrust toolkit with *ex ante* prohibitions to prevent anti-competitive practices by dominant platforms.⁷¹

By this view, since digital markets prompt rapid concentrations of power, timely intervention is crucial. Because the traditional *ex post* enforcement may cause delays in investigations, the best approach is to apply simple *ex ante* rules of conduct. From this perspective, the seven year European *Google Shopping* investigation provides a good example of how complex and burdensome the competitive assessment can be when it comes to some practices performed by vertically integrated platforms.⁷² The reform proposals belonging to the “more regulatory” approach make antitrust assessment faster and simpler by introducing a blend of corrective tools such as *ex ante* prohibitions, market investigations, non-punitive remedies, *per se* rules, legal presumptions, and shifting the burden of proof.

In particular, the German Commission’s “Competition Law 4.0” has taken a position against the creation of a Digital Agency.⁷³ Instead of imposing standards, the

main reasons against structural remedies: a) the market structure is best left to competitive forces that drive efficient outcomes for consumers and divestitures may reduce incentives for investment and efforts to improve productivity; b) divestiture is unlikely to significantly reduce barriers to entry and expansion (network effects, branding, and economies of scale), and accordingly, may not be an effective long term solution to addressing Google’s or Facebook’s market power in respectively search services or social media services; c) risks in design and implementing divestitures are particularly acute in digital markets.

⁷¹ Cappai & Colangelo, *supra* note 12.

⁷² European Commission, Case AT.39740 (2017), *Google Search (shopping)*.

⁷³ GERMAN COMMISSION, *supra* note 11, at 25, 77–81.

German Commission proposes a set of clear rules of conduct (“clear-cut prohibitions”) for dominant online platforms, with potential exceptions.⁷⁴ On the same grounds, the French Competition Authority considers it useful to draw up a list of practices that raise concerns specific to “structuring digital platforms.”⁷⁵ Furthermore, the German Commission proposed accelerating the development of these new rules of conduct for dominant digital platforms through an EU Platform Regulation that would both flesh out and supplement competition law.⁷⁶

In a joint memorandum the Benelux (Belgium, the Netherlands, and Luxembourg) competition agencies call for the introduction of an *ex ante* intervention mechanism to prevent anti-competitive conduct by digital gatekeepers.⁷⁷ Notably, competition authorities should have the power to intervene on dominant platforms, without establishing the infringement, by imposing proportionate remedies that are behavioural and non-punitive in nature. Rebuttable presumptions on the proportionality of certain

⁷⁴ *Id.* at 49. In the same vein, MONOPOLKOMMISSION, *Competition 2020*, in BIENNIAL REPORT (2020).

⁷⁵ French Competition Authority, *supra* note 11, at 7–8, indicating that a non-exhaustive list could cover practices that consist in: disfavoring competing products or services using their services, hindering access to markets in which they are not dominant or structuring; using data in a dominated market to make access to that market more difficult; making interoperability of products or services more difficult; making data portability more difficult; hindering the use of multihoming. The French Authority defines structuring digital platforms in three stages as: 1) a company that provides online intermediation services for exchanging, buying or selling goods, content or services; and 2) who holds structuring market power a) because of its size, financial capacity, user community and/or the data that it holds, b) enabling it to control access to or significantly affect the functioning of the market(s) in which it operates; 3) with regard to its competitors, users and/or third-party companies that depend on access to the services it offers for their own economic activity. *See also* Peter Alexiadis & Alexandre De Streel, *Designing an EU Intervention Standard for Digital Platforms* (EUI Working Papers RSCAS No. 14, 2020), <https://fsr.eui.eu/working-paper-designing-an-eu-intervention-standard-for-digital-platforms/>, proposing a (cumulative) three criteria test to determine the targeted digital platforms, namely (i) the existence of market structures which are highly concentrated and non-contestable, (ii) the presence of digital gatekeepers which act as unavoidable trading partners, (iii) and the lack of effectiveness of competition rules to address the identified problems in the market.

⁷⁶ GERMAN COMMISSION, *supra* note 11, at 49. *See also* MONOPOLKOMMISSION, *supra* note 74.

⁷⁷ Joint Memorandum from Belgian Competition Authority, Dutch Authority for Consumers & Markets, and Luxembourg Conseil de la Concurrence, *supra* note 11, at 5–6.

remedies, including those punitive in nature, are considered appropriate for companies which do not abide by the imposed remedies. Similarly, with regard to banking and financial markets, the Expert Group on Regulatory Obstacles to Financial Innovation has recommended that the European Commission introduce *ex ante* rules to prevent large, vertically integrated platforms from discriminating against product and service provision by third parties.⁷⁸

At a first glance, the report previously prepared for the Commission by the EU Competition Experts seems to suggest a different approach that advocates just a more vigorous competition policy regime.⁷⁹ Although the Commission's expert panel acknowledges the need for a substantial rethinking of the tools of analysis and enforcement, regulatory interventions are only invoked to ensure access to data in sector-specific situations, particularly where access would open secondary markets for complementary services.⁸⁰

According to the report, a review of the error cost framework and a consequent relaxation or reversal of the burden of proof is needed.⁸¹ In particular, a finding that specific practices adopted by dominant platforms "restrict the ability of other firms to compete either on the platform or for the market in a way which is not clearly competition on the merits should trigger a rebuttable presumption of anti-competitiveness. It should

⁷⁸ EXPERT GROUP ON REGULATORY OBSTACLES TO FINANCIAL INNOVATION, *Thirty Recommendations on Regulation, Innovation and Finance*, in Final Report to the European Commission 79–80 (2019).

⁷⁹ Crémer, de Montjoye, & Schweitzer, *supra* note 26, at 14. See also Marc Bourreau & Alexandre de Streel, *Digital Conglomerates and EU Competition Policy*, (CERRE Discussion Paper, 2019), suggesting to adapt the antitrust theories of harms to firms' incentives in the digital economy by extending anti-competitive bundling theories and adjusting the essential facility doctrine to the features of data.

⁸⁰ Crémer, de Montjoye, & Schweitzer, *supra* note 26, at 82. In a similar vein, Alexiadis & De Streel, *supra* note 75, suggest both the re-assessment of antitrust enforcement principles and theories of harms (including the shift of the burden of proof in some circumstances, e.g. self-preferencing) and the introduction of a complementary regulation to ensure contestability between digital platform alternatives, mainly by promoting interoperability through a mandated sharing of data.

⁸¹ Crémer, de Montjoye, & Schweitzer, *supra* note 26, at 50-51. See also AUSTRIAN COMPETITION AUTHORITY, *Digitalisation and Competition Law*, in POSITION PAPER 10 (2020).

be the dominant platform’s responsibility to show that the practice at stake brings sufficient compensatory efficiency gains.”⁸²

In the U.S., the Stigler Center report also endorses the relaxation of proof requirements or the reversal of the burden of proof “in appropriate cases.”⁸³ On a similar note, Senator Klobuchar has introduced the “Anticompetitive Exclusionary Conduct Prevention Act,” which aims at deterring exclusionary practices by dominant firms. The Act introduces a rebuttable presumption of an appreciable risk of anticompetitive harm when the firm has a market share of greater than 50 percent or significant market power in the relevant market.⁸⁴ Finally, a group of antitrust experts for the Washington Center for Equitable Growth has recently argued that antitrust rules constructed by the courts reflect a systematically skewed error cost balance: “they are too concerned to avoid both chilling procompetitive conduct and the high costs of litigation, and too dismissive of the costs of *failing* to deter harmful conduct.”⁸⁵ Therefore, the signatories of the statement have called on the U.S. Congress to update current antitrust law to align it with modern economic theory and to fix harmful judicial rules by: incorporating presumptions that better reflect the likelihood that certain practices harm competition; recognizing that certain conduct that creates a risk of substantial harm should be unlawful even if the harm cannot be shown to be more likely than not; and altering substantive legal standards and the allocation of pleading, production, and burdens of proof to reduce

⁸² Crémer, de Montjoye, & Schweitzer, *supra* note 26, at 71.

⁸³ STIGLER COMMITTEE FOR THE STUDY OF DIGITAL PLATFORMS, *supra* note 9, at 77.

⁸⁴ See Keep Big Tech Out of Finance Act of 2019, H.R. 4813, 116th U.S. Congress, (2019). The adoption of a statutory rebuttable presumption for firms with a market share of 50% is also supported by Weber Waller, *supra* note 1, at 12–13; for a different point of view, see Thomas A. Lambert, *The Case Against Legislative Reform of U.S. Antitrust Doctrine* 17-18 (Univ. Mo. Sch. L. Legal Stud. Research Paper No. 2020-13, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3598601.

⁸⁵ Antitrust Experts for the Washington Center for Equitable Growth, *supra* note 1, at 4–5. The signatories of the statement are Jonathan Baker, Joseph Farrell, Andrew Gavil, Martin Gaynor, Michael Kades, Michael Katz, Gene Kimmelman, Douglas Melamed, Nancy Rose, Charles Kindleberger, Steven Salop, Fiona Scott Morton, and Carl Shapiro.

barriers of demonstrating meritorious cases.⁸⁶

These proposals to reverse the burden of proof by introducing presumptions suggests that both the European Commission's expert panel and the aforementioned U.S. antitrust experts are actually sharing the same theoretical approach. According to the EU Competition Experts, the operators of dominant platforms have a responsibility to ensure that competition on their platforms is fair, unbiased, and pro-users.⁸⁷ Indeed, because of their gatekeeper status, digital platforms are unavoidable trading partners and exercise an intermediation power even in apparently fragmented marketplaces, i.e. those where the market share is significantly below 40%.⁸⁸ Moreover, platforms perform a rule-setting function and play a dual role in their ecosystem.⁸⁹

C. EU Commission's Proposals: Ex Ante Regulatory Framework and New Competition Tool

These arguments are gaining momentum and the European Commission seems ready to embrace a new regulatory approach. Indeed, in unveiling a new digital strategy, the Commission has recently remarked that competition rules are under revision so they are better suited to the digital economy.⁹⁰ The Commission highlights the systemic role of certain online platforms which act as "private gatekeepers" to markets, customers, and information, and emphasises the need to ensure that their market power will not jeopardise the fairness and openness of markets.⁹¹ Further, since "competition policy alone cannot address all the systemic problems that may arise in the platform economy,"

⁸⁶ *Id.* at 1–2.

⁸⁷ Crémer, de Montjoye, & Schweitzer, *supra* note 26, at 61.

⁸⁸ Crémer, de Montjoye, & Schweitzer, *supra* note 26, at 49, 70. *See also* U.S. HOUSE OF REPRESENTATIVES REPORT, *supra* note 1, at 39, arguing that their role as gatekeepers also gives the dominant platforms outsized power to control the fates of other businesses.

⁸⁹ *Id.* at 60.

⁹⁰ European Commission, Communication Shaping Europe's Digital Future COM(2020) 67 final, 8 (February 19, 2020).

⁹¹ *Id.* at 8.

additional rules may be needed to ensure contestability, fairness, innovation, and the possibility of market entry.⁹² To this end, the Commission announced the launch of a sector inquiry to evaluate the effectiveness of the current competition rules and stated that it would explore whether *ex ante* regulatory responses may be needed to ensure market contestability against gatekeeping platforms with significant network effects.⁹³ Notably, the Commission is working on a proposal for an *ex ante* regulation as part of the Digital Services Act package set to be presented by the end of 2020.

According to the inception impact assessment, the adoption of an *ex ante* regulatory framework for large online platforms acting as gatekeepers would include two sub-options.⁹⁴ The first sub-option would introduce a prohibition or restriction of certain unfair trading practices (blacklisted practices), such as certain forms of self-preferencing and the acceptance of supplementary commercial conditions that by their nature have no connection with the underlying contractual relationship.⁹⁵ Besides establishing obligations and prohibiting certain unfair trading practices, the second sub-option of a new *ex ante* regulatory framework would include an ability to impose tailor-made remedies targeting specific issues and individual large online platform companies, to be applied on a flexible, case-by-case basis. These remedies would be adopted and enforced by a competent regulatory body and could include platform-specific non-personal data access obligations, specific requirements regarding personal data portability, or

⁹² *Id.* at 9.

⁹³ *Id.* at 10.

⁹⁴ European Commission, *supra* note 11, at 4.

⁹⁵ See also Vestager, *supra* note 58, at 6, referring to a clear list of dos and don'ts that the platforms concerned would be required to comply with (i.e. a specifically defined set of obligations and prohibitions that would be of general applicability to the platforms concerned), which might include “rules to stop platforms misusing their position as both player and referee . . . One possible rule could be one that prohibits platforms from displaying their own downstream services more prominently than those of rivals. Another possible rule in relation to data might be a so-called “data silo” rule, where a conglomerate platform is prohibited from using specific data sets for certain business purposes in order to prevent it leveraging from one market to another.”

interoperability requirements.

Moreover, the European Commission has published an open public consultation on the need for a possible new competition tool that would allow addressing structural competition problems in a timely and effective manner.⁹⁶ The proposal aims at providing the Commission with powers akin to those exercised by the UK CMA when it carries out market investigations.⁹⁷ In particular, after establishing a structural competition problem through a market investigation, the new tool would allow the Commission to impose behavioural and, where appropriate, structural remedies, without requiring a proceeding under the antitrust provisions.

According to the inception impact assessment, four policy options are considered.⁹⁸ The first two would address unilateral conduct by dominant companies either across all sectors or just in specific sectors, such as digital markets, by enabling the Commission to impose behavioural and structural remedies. The other two policy options would include a market structure-based (rather than dominance-based) tool, thereby not limiting itself to dominant companies, and thus allowing the Commission to intervene when a structural risk for competition or a structural lack of competition prevents the market from functioning properly. Structural risks for competition refer to tipping markets, i.e. scenarios where certain market characteristics (e.g. network and scale effects, lack of multi-homing, and lock-in effects) and the conduct of the companies with an entrenched market and/or gatekeeper position create a threat for competition.⁹⁹

⁹⁶ European Commission Press Release IP/20/977, Commission Consults Stakeholders on a Possible New Competition Tool (June 2, 2020).

⁹⁷ See Amelia Fletcher, *Market Investigations for Digital Platforms: Panacea or Complement?*, (CCP Working Paper No. 6, 2020), <http://competitionpolicy.ac.uk/publications/working-papers/working-paper-20-06>, considering the pros and cons of the new competition tool by comparing it with the with the UK market investigation powers granted to the CMA.

⁹⁸ European Commission, *New Competition Tool*, Inception Impact Assessment (2020) at 3, <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12416-New-competition-tool>.

⁹⁹ *Id.* at 2.

Structural lack of competition refers instead to a structural market failure, i.e. scenarios where markets display systemic failures due to certain structural features (e.g. high concentration and entry barriers, consumer lock-in, lack of access to data or data accumulation) and oligopolistic market structures with an increased risk for tacit collusion.

Finally, *ex ante* regulation will also be considered to address systemic issues related to data, namely market imbalances in relation to access to and use of data.¹⁰⁰ According to the Commission, the contestability of markets is affected by the ‘data advantage’ achieved by a small number of online platforms which may exploit it to set the rules on the platform, unilaterally impose conditions for access and use of data, and leverage such advantage when developing new services and expanding into new markets. Thus, the accumulation of vast amounts of data by BigTech companies, the role of data in creating or reinforcing imbalances in bargaining power, and the methods by which these companies use and share the data across sectors will be analysed in order to evaluate whether additional sector-specific *ex ante* regulatory interventions are needed.¹⁰¹

III. TAMING DIGITAL GATEKEEPERS: A CASE OF REGULATORY HUBRIS?

Despite different applications and policy options, i.e. breakups, digital authorities, *ex ante* prohibitions, new competition tools, and reversals of the burden of proof, the two approaches to the regulation of digital platforms described in the previous paragraph share the same underlying principles. Namely, they argue that antitrust law is unable to keep up with fast-moving markets and that BigTechs are not traditional dominant players. BigTechs are both gatekeepers exerting a bottleneck power and private regulators setting rules for businesses using their platforms. Further, they play a dual role

¹⁰⁰ European Commission, Communication A European Strategy for Data, COM(2020) 66 final, 8, 14 (February 19, 2020).

¹⁰¹ European Commission, *supra* note 11, at 4; and European Commission, *supra* note 98, at 2.

as umpires and players in their ecosystem, simultaneously operating the marketplace and selling their own products and services in competition with other sellers. As a result of these factors, digital platforms deserve special treatment to ensure fairness and contestability on the platform and on neighbouring markets. In other words, online platforms should be treated like common carriers and should implement a nondiscrimination/neutrality regime.

Against this background, the regulatory approaches recently advanced do not seem to reflect the distinctive features of digital markets, but rather the need to design enforcement short-cuts to cope with growing concerns that antitrust law is unable to address potential anticompetitive practices by large online platforms. Hence, in most of the mentioned reports, the revival of regulation seems supported more by an alleged antitrust enforcement failure rather than true a market failure. The goal is indeed to fill alleged enforcement gaps in the current antitrust rules by introducing tools aimed at lowering legal standards and evidentiary burdens in order to address anti-competitive practices that standard antitrust analysis would struggle to tackle.¹⁰²

A. Self-Preferencing and the Vertical Integration Anathema

From this point of view, the case of self-preferencing appears paradigmatic. On the one hand, it represents the main concern related to the dual mode intermediation performed by some digital platforms. Acting simultaneously as regulators and

¹⁰² AUSTRIAN COMPETITION AUTHORITY, *supra* note 81, at 10, made it very clear: “It seems justified to use the device of the reversal of the burden of proof . . . in particular where there appears to be an abusive or unfair pattern of behaviour, it is difficult for an applicant to reconstruct what has been going on within an undertaking, or official investigations rapidly come up against natural or technical limits.” *See also* the EUROPEAN COMMISSION, *supra* note 98, stating that the aim of the proposal for a new competition tool is to fill enforcement gaps in the current antitrust rules by expanding the toolkit in order to address anti-competitive behaviours that standard antitrust analysis would strive to tackle; and the U.S. HOUSE OF REPRESENTATIVES REPORT, *supra* note 1, at 392, acknowledging that some of the anticompetitive business practices uncovered by its investigation could be difficult to challenge under current antitrust law, therefore specific legislative reforms would help renew and rehabilitate the antitrust laws in the context of digital markets.

participants in the market, BigTechs may leverage their power by giving preferential treatment to their own products and services. As a result, it comes as no surprise that restricting self-preferencing is the paramount *ex ante* prohibition in almost all the mentioned reports and inquiries.¹⁰³

On the other hand, despite the European Commission's decision in *Google Shopping*,¹⁰⁴ it is contentious whether a dominant undertaking is required to treat a rival's product in the same way as it treats its own under antitrust rules.¹⁰⁵ Differentiated treatment is not inherently problematic under competition law because dominant players are not subject to a duty to keep their rivals in the market. Therefore, antitrust provisions do not impose a general prohibition on self-favoring by dominant firms, so that such conduct is not unlawful *per se*.

Notably, after a seven year investigation, the European Commission found that discriminatory treatment of rivals by a vertically integrated search engine may amount

¹⁰³ AUSTRALIAN COMPETITION AND CONSUMER COMMISSION, *supra* note 21, at 134–36; EXPERT GROUP ON REGULATORY OBSTACLES TO FINANCIAL INNOVATION, *supra* note 78, at 79–80; FRENCH COMPETITION AUTHORITY, *supra* note 11, 7–8; German Commission, *supra* note 11, at 50–51; UK COMPETITION AND MARKETS AUTHORITY, *supra* note 9, at 358; UK DIGITAL COMPETITION EXPERT PANEL, *supra* note 9, at 62. *See also* U.S. HOUSE OF REPRESENTATIVES REPORT, *supra* note 1, at 382–84, recommending that Congress consider establishing rules to prevent discrimination, favoritism, and self-preferencing. More in general, about differentiated treatment *see* Inge Graef, *Differentiated Treatment in Platform-to-Business Relations: EU Competition Law and Economic Dependence*, 38 Y.B. EURO. L. 448 (2019), distinguishing among 'pure' self-favouring (whereby a vertically integrated platform treats its own services more favourably than those of others), 'pure' secondary line differentiation (whereby a non-vertically integrated platform differentiates between non-affiliated services in a market in which it is not active itself), and 'hybrid' cases where a platform differentiates among non-affiliated services in an effort to favour its own business.

¹⁰⁴ European Commission, Case AT.39740 (2017), *Google Search (shopping)*.

¹⁰⁵ *See, e.g.*, Submission to the House Subcommittee of Antitrust, Hal Singer Answers Questions from House Subcommittee on Antitrust 2 (March 30 2020), <https://www.econone.com/news-article/hal-singer-answers-questions-from-house-subcommittee-on-antitrust/>, arguing that antitrust is not a perfect solution for dealing with the problem of self-preferencing and that, even if the antitrust laws could be stretched to accommodate this type of exclusion, the pace of litigation is too slow to address the potential harms that flow from self-preferencing, namely, an innovation loss at the edges of the platforms. *See also* Shapiro, *supra* note 1, at 83, considering it very difficult to pursue a digital platform under the U.S. Supreme Court antitrust precedent for discriminating in favor of its own products and services.

to an abuse of dominance if the search engine gives an illegal advantage to its own comparison shopping service by systematically ensuring prominent placement for it and demoting rival comparison shopping services in its search results. According to the Commission, by artificially diverting traffic from their rival's services, Google's self-preferencing aims to leverage its market power on the search engine.

Similarly, by exploiting its dual role as marketplace operator and seller, Amazon is suspected to have adjusted its product-search system to favor its own products. Notably, the European Commission is investigating whether Amazon is using sensitive data about marketplace sellers, their products, and their transactions to affect competition.¹⁰⁶ The Commission will look into the role of data in the selection of the winners of the "Buy Box" and the impact of Amazon's potential use of competitively sensitive marketplace seller information on that selection. Further, The Wall Street Journal has recently reported that Amazon used data about independent sellers on the company's platform to develop competing products.¹⁰⁷ The Canadian Competition Bureau is also investigating Amazon's trade practices, in particular looking at: i) any

¹⁰⁶ European Commission Press Release IP/19/4291, *The Commission Opens Investigation into Possible Anti-competitive Conduct of Amazon*, (July 17, 2019). Furthermore, several European national antitrust authorities (Austria, Germany, Italy, Luxembourg) weighed in opening proceedings against Amazon on similar grounds.

¹⁰⁷ Dana Mattioli, *Amazon Scooped Up Data from its Own Sellers to Launch Competing Products*, THE WALL STREET JOURNAL, April 23 (2020). See Randal C. Picker, Statement before the U.S. House of Representatives Committee on the Judiciary Subcommittee on Antitrust, Commercial, and Administrative Law 20–25, May 11 (2020), addressing antitrust concerns and remedies about Amazon's dual role. According to Picker, "the behavior of third-party sellers suggests that Amazon is providing valuable services to those sellers in using its internal skill set in wholesale transactions on the Amazon platform. Requiring Amazon to exit one business or the other would reduce competition and would risk destroying these valuable arrangements. If the central concern is that Amazon is exploiting individual third-party seller information, there are much more direct interventions possible. In some sectors, we silo data and we could do that here. That said, do note, as the Rain Design example suggests, the real possible costs to consumers from limiting entry by Amazon into new product markets. And if there is a belief that product cloning is too easy, the natural place to fix that problem is in intellectual property law. On the buy box, the central allegation seems to be that Amazon uses the buy box to make money for Amazon. That of course is the business that Amazon is in and U.S. antitrust law doesn't create some sort of general nondiscrimination and access regime for third-party sellers."

policies which may impact third-party sellers' willingness to offer their products for sale at a lower price on other retail channels, such as their own websites or other online marketplaces; ii) the ability of third-party sellers to succeed on Amazon's marketplace without advertising on its website or using its fulfilment service; and iii) any efforts or strategies by Amazon that may influence consumers to purchase products it offers for sale over those offered by competing sellers.¹⁰⁸

Finally, the European Commission is evaluating the antitrust complaint filed by Spotify against Apple. Spotify alleges that Apple has unfairly limited competitors in their access to the Apple Music streaming service and, by imposing a 30% fee on subscriptions, has been using its App Store to impede Spotify's competitive potential to the advantage of Apple Music. Notably, the European Commission has opened antitrust investigations concerning the mandatory use of Apple's own proprietary in-app purchase system ("IAP") for the distribution of paid digital content (for which Apple generally charges app developers a 30% commission on all subscription fees) and restrictions on the ability of developers to inform users of alternative purchasing possibilities outside of apps.¹⁰⁹ Moreover, the European Commission has also opened an antitrust investigation concerning Apple's terms, conditions, and other measures for integrating Apple Pay in merchant apps and websites on iPhones and iPads, Apple's limitation of access to the near-field communication (NFC) functionality ("tap and go") on iPhones for payments in stores, and alleged refusals of access to Apple Pay for specific products of rivals on iOS and iPadOS smart mobile devices.¹¹⁰

¹⁰⁸ Press Release, Canadian Competition Bureau, Competition Bureau Seeks Input From Market Participants to Inform an Ongoing Investigation of Amazon (August 14, 2020) (<https://www.canada.ca/en/competition-bureau/news/2020/08/competition-bureau-seeks-input-from-market-participants-to-inform-an-ongoing-investigation-of-amazon.html>).

¹⁰⁹ European Commission Press Release IP/20/1073, *The Commission Opens Investigations into Apple's App Store Rules* (June 16, 2020).

¹¹⁰ European Commission Press Release, *The Commission Opens Investigation into Apple Practices Regarding Apple Pay*, (June 16, 2020).

While commenting on the opening of these investigations, executive Vice-President Margrethe Vestager made explicit reference to the gatekeeper role obtained by Apple with regards to the distribution of apps and content to users of Apple's popular devices.¹¹¹

These investigations are premised on either the assumption that BigTechs must ensure rivals a level playing field or a sort of platform neutrality regime which represents a version of the essential facility doctrine.¹¹² However, while awaiting the European General Court judgement in *Google Shopping*,¹¹³ a lively debate has taken place on the possibility to assess such conduct under one of the established categories of abuse, as the types of abuse closest to the challenged practice, i.e. essential facilities doctrine, discrimination, and tying, do not appear suitable to address cases of self-preferencing.¹¹⁴

¹¹¹ *Id.*

¹¹² Geoffrey A. Manne, *Correcting Common Misperceptions About the State of Antitrust Law and Enforcement*, Invited Statement on House Judiciary Investigation into Competition in Digital Markets 8, (April 17 2020), https://laweconcenter.org/wp-content/uploads/2020/04/Manne_statement_house_antitrust_20200417_FINAL3-POST.pdf. See also Niamh Dunne, *Public Interest and EU Competition Law* ANTITRUST BULL. (forthcoming), arguing that the notion that dominant platforms have a positive duty to ensure "fair" outcomes for rivals has inescapable parallels to more traditional forms of utilities regulation. On the risks arising from putting the government in the business of regulating these common carriage deals, see Picker, *supra* note 105, at 31: "Would Apple have an obligation to carry—here meaning pre-install—any app requesting that? I hope that merely to state the idea is to make clear why that would be an outcome that would be physically impossible and would create a terrible consumer experience. . . . Would a nondiscrimination regime require Apple to pre-install all competing music apps? Would we instead make the browser choice screen universal for any app category where Apple sought to pre-install all apps? Could Apple auction off the sole right to be pre-installed? And could Apple bid in that auction against outsiders? That might sound strange—Apple bidding to pay itself—but that is exactly how some versions of the Google Shopping remedy have operated."

¹¹³ GC, Case T-612/17, *Google and Alphabet v. Commission*.

¹¹⁴ See Niamh Dunne, *Dispensing with Indispensability*, 16 J. COMPETITION L. & ECON. 74 (2020); Graef, *supra* note 103; Pablo Ibáñez Colomo, *Indispensability and Abuse of Dominance: From Commercial Solvents to Slovak Telekom and Google Shopping*, 10 J. EURO. COMPETITION L. & PRAC. 532 (2019); Pinar Akman, *The Theory of Abuse in Google Search: A Positive and Normative Assessment under EU Competition Law*, 2 UNIV. ILL. J. L., TECH. & POL'Y 301 (2017); Bo Vesterdorf, *Theories of Self-Preferencing and Duty to Deal – two sides of the same coin?*, 1 COMPETITION L. & POL'Y DEBATE 4 (2015); Nicolas Petit, *Theories of Self-Preferencing Under Article 102 TFEU: A Reply to Bo Vesterdorf*, 1 COMPETITION L. & POL'Y DEBATE (2015). See also Pablo Ibáñez Colomo, *Self-Preferencing: Yet Another Epithet in Need of Limiting Principles*, 43 WORLD COMPETITION (Forthcoming 2020) <https://ssrn.com/abstract=3654083>, suggesting that self-preferencing, as a legal category, may be misleading

This debate provides useful insights for US policy circles as well, since the U.S. House Judiciary Committee’s Antitrust Subcommittee has suggested emulating the European model imposing a special responsibility on dominant firms by introducing the notion of the abuse of dominant position and overriding several Supreme Court’ decisions in order to clarify prohibitions on monopoly leveraging, predatory pricing, denial of essential facilities, refusals to deal, tying, and self-preferencing.¹¹⁵ Moreover, the recent lawsuits filed by Epic Games against Apple and Google resemble the European investigations. On August 2020, Epic added a discount direct payment option for the successful videogame *Fortnite* alongside the iOS App Store and Google Play payment options, in violation of those stores’ policies and bypassing their 30 percent fee. As a result, *Fortnite* was removed from both platforms and Epic filed lawsuits complaining that Apple and Google stand as unavoidable middlemen for app developers and in every in-app transaction, and alleging anti-competitive restraints in the app distribution market and in the in-app payment processing market.

In light of the debate around the *Google Shopping* decision, it seems that importing the European concept of abuse of dominance and the related types of abusive behaviors is not sufficient to tackle BigTechs’ strategies.¹¹⁶ Thus, many European antitrust

because the various manifestations of the phenomenon are far from identical, ranging from hypotheses that raise issues similar to those at stake in traditional tying cases to others that raise issues similar to those considered as a refusal to deal.

¹¹⁵ U.S. HOUSE OF REPRESENTATIVES REPORT, *supra* note 1, at 391–99, stating that, through adopting a narrow construction of consumer welfare as the sole goal of the antitrust laws, the U.S. Supreme Court has limited the analysis of competitive harm to focus primarily on price and output rather than the competitive process, hence contravening legislative history and legislative intent. *See also* Weber Waller, *supra* note 1; Eleanor M. Fox, *Platforms, Power, and the Antitrust Challenge: A Modest Proposal to Narrow the U.S.-Europe Divide*, 98 NEB. L. REV. 297 (2019); Lina M. Khan & Sandeep Vaheesan, *Market Power and Inequality: The Antitrust Counterrevolution and Its Discontents*, 11 HARV. L. & POL’Y REV. 235 (2017).

¹¹⁶ *See also* Picker, *supra* note 107, at 30, “There is this idea that antitrust enforcement has shifted from Washington DC to Brussels and that that reflects a better competition law in Europe and more aggressive competition regulators in Brussels. I am skeptical that an objective observer would describe the European record as one of success.”

authorities have been eager to impose new clear-cut *ex ante* prohibitions against dominant digital platforms, and they are placing a ban on self-preferencing at the top of the list.

However, it is questionable that such a prohibition would benefit consumers and achieve the expected pro-competitive goals.¹¹⁷ Digital intermediaries employ different business models and business models matter when policy makers are evaluating the dual role of platforms. As correctly argued, because the different strategies for monetizing the surplus created by their platforms influence their incentives, any regulatory framework needs to account for these differences, thereby avoiding the assumption that platforms adopting different business models inevitably have the same incentives to engage in self-preferencing.¹¹⁸

The target placed on self-preferencing seems to reflect the rhetoric of bigness that embraces the ongoing crusade against vertical integration of platforms due to their dual role.¹¹⁹ Notably, competitive risks do not appear significantly different from those

¹¹⁷ See James C. Cooper, Joshua D. Wright, & John M. Yun, Testimony on the State of Competition in the Digital Marketplace before the U.S. House of Representatives, Committee on the Judiciary, Subcommittee on Antitrust, Commercial, and Administrative Law 12–13 (George Mason University Law & Economics Research Paper Series No. 20-13, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3584629, arguing that a monopolization theory based on self-preferencing is a theory that tends to create liability for competition itself and noting that observing a dominant platform taking actions that disadvantage a rival does not answer the core question in any antitrust inquiry, that is, whether self-preferencing harms consumers rather than just rivals.”

¹¹⁸ See NORDIC COMPETITION AUTHORITIES, DIGITAL PLATFORMS AND THE POTENTIAL CHANGES TO COMPETITION LAW AT THE EUROPEAN LEVEL 17 (2020), arguing that the complexity and variety of business models adopted by digital platforms, together with the high pace of innovation that characterizes this dynamic sector, make the establishment of clear-cut *ex ante* criteria a challenging task. See also Cristina Caffarra, Federico Etro, Oliver Latham, & Fiona Scott Morton, *Designing Regulation for Digital Platforms: Why Economists Need to Work on Business Models*, VOXEU (June 04, 2020), <https://voxeu.org/article/designing-regulation-digital-platforms>; and Alexandre de Cornière & Greg Taylor, *A Model of Biased Intermediation*, 50 RAND J. ECON. 854 (2019), distinguishing among environments exhibiting conflict (i.e. where higher revenues are obtained by extracting more surplus at consumers’ expense) and those exhibiting congruence (i.e. when strategies that increase firms’ per-consumer revenues also increase consumers’ utility); and Andrei Hagiu & Julian Wright, *Marketplace or Reseller?*, 61 MGMT. SCI. 184 (2015), analyzing different trade-offs faced by intermediaries when choosing whether to function more as a marketplace or more as a reseller.

¹¹⁹ See Herbert Hovenkamp, *The Looming Crisis in Antitrust Economics* 43–44 (Univ. Penn. Inst. L. & Econ. Research Paper No. 20-15, March 10, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3508832,

common in any scenario of vertical integration. Vertical integration, however, whether by merger or by contract, may provide substantial procompetitive effects and tends to increase consumer welfare.¹²⁰ Specifically, vertical integration may decrease transaction costs, eliminate double marginalisation, reduce contracting frictions, enable better coordination in terms of product design, and increase organisation of the production process and the way in which the products are sold.

about Senator Warren’s proposal that large internet sellers such as Amazon should be prevented from selling both their own products and those of other sellers on the same platform: “I suspect, her advisors were so fixated on the rhetoric of bigness that they never sat down to figure out who was getting harmed or benefitted by this proposal.” See also Andrei Hagiu, Tat-How Teh, and Julian Wright, *Should Platforms be Allowed to Sell on Their Own Marketplaces?*, (June 15, 2020) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3606055, http://andreiagiu.com/wp-content/uploads/2020/05/Hagiu_Teh_Wright_May2020.pdf, showing that an outright ban of the dual mode intermediation tends to benefit third-party sellers at the expense of consumer surplus or welfare.

¹²⁰ See U.S. DEPARTMENT OF JUSTICE AND FEDERAL TRADE COMMISSION, VERTICAL MERGERS GUIDELINES 4–6, 11–12 (2020), evaluating whether the potential benefits of the elimination of double marginalization offset incentives to lessen competition by foreclosing rivals or raising their costs; European Commission, *Guidelines on the Assessment of Non-Horizontal Mergers Under the Council Regulation on the Control of Concentrations Between Undertakings*, (2008) OJ C 265/6, para. 13; and European Commission, *Guidelines for the Assessment of Vertical Restraints*, OJ C 130/1, para. 213, about the efficiencies of category management agreements. See also Margaret Slade & Francine Lafontaine, *Vertical Integration and Firm Boundaries: The Evidence*, 45 J. ECON. LITERATURE 629 (2007), providing empirical evidence about the significant efficiencies that can be found in vertical mergers; Thomas W. Hazlett, *U.S. Antitrust Policy in the Age of Amazon, Google, Microsoft, Apple, Netflix and Facebook* 15–22 (2020) Invited paper for the U.S. House of Representatives, Judiciary Committee, Bipartisan Investigation into Competition in Digital Markets, <https://ssrn.com/abstract=3594934>, illustrating how emerging digital platforms have benefited from vertical integration; Roger D. Blair, Christine S. Wilson, D. Daniel Sokol, Keith Klovers, and Jeremy A. Sandford, *Analyzing Vertical Mergers: Accounting for the Unilateral Effects Tradeoff and Thinking Holistically About Efficiencies*, 27 GEO. MASON L. REV. (forthcoming), noting that the economic literature finds that a vertical merger’s aggregate procompetitive benefits are likely to exceed its anticompetitive effects across a wide range of possible scenarios and that the economic evidence has indicated that vertical integration, whether by merger or otherwise, is typically procompetitive. However, see Dissenting Statement of Commissioner Rohit Chopra, Regarding the Publication of Vertical Merger Guidelines, FTC File No. P810034 (June 30, 2020) <https://www.ftc.gov/public-statements/2020/06/dissenting-statement-commissioner-rohit-chopra-regarding-publication>) and Dissenting Statement of Commissioner Rebecca Kelly Slaughter, Regarding the Publication of Vertical Merger Guidelines, FTC File No. p810034 (June 30, 2020), <https://www.ftc.gov/public-statements/2020/06/dissenting-statement-commissioner-rebecca-kelly-slaughter-re-ftc-doj>) questioning the over-emphasis on the benefits of vertical mergers and disapproving the newly released Vertical Merger Guidelines for supporting the belief that vertical mergers are presumptively benign.

B. Data Advantage and the Paradox of Data Sharing

Additional regulatory interventions have also been proposed to tackle BigTechs' data advantage.

Data is a precious source in digital markets allowing firms to design new goods, new processes, and new business strategies by guessing consumers' preferences and rivals' strategies, and testing the resulting conjectures in real time. Hence, the competitiveness of firms increasingly depends on timely access to relevant data. However, market imbalances are reportedly based on access to and use of data.¹²¹ Although a lot of data are publicly and commercially available, having accumulated large amounts of data over a long period of time often provides an incumbent a competitive advantage. Because data is accumulated as a by-product of the normal functioning of a platform, dominant online players have access to much more recent data than their rivals, thereby increasing their competitive advantage.¹²² Thus, as recently stated by the European Commission, the accumulation of vast amounts of data by BigTech companies, the role of data in creating or reinforcing imbalances in bargaining power, and the methods by which these companies use and share the data across sectors need to be analysed in order to evaluate whether sector-specific *ex ante* regulatory interventions are required.¹²³

Supporters of a new sectoral regulator propose assigning it the task of ensuring data portability and increasing data mobility in general, designing data sharing rules in

¹²¹ European Commission, *supra* note 100, at 8 and 14. See also Maurice E. Stucke, *Here Are All the Reasons It's a Bad Idea to Let a Few Tech Companies Monopolize Our Data*, Harvard Business Review (March 27, 2018) <https://hbr.org/2018/03/here-are-all-the-reasons-its-a-bad-idea-to-let-a-few-tech-companies-monopolize-our-data>, describing BigTech companies as "data-opolies" and considering them *more* dangerous than traditional monopolies because they can also affect privacy, autonomy, democracy, and well-being.

¹²² Crémer, de Montjoye, & Schweitzer, *supra* note 26, at 24, 29.

¹²³ European Commission, *supra* note 100, at 8, 14.

order to promote multi-homing, and creating open standards.¹²⁴ Despite the disagreement about the appointment of a new authority, the “antitrust-based” proposals also point to an *ad hoc* regulatory regime for large online platforms. Notably, while the German Commission endorses the idea of a “platform regulation” which supplements competition law by targeting dominant online platforms and imposing a requirement that they enable the portability of user and usage data in real time in an interoperable data format,¹²⁵ the French Competition Authority prefers to define a list of practices that raise competition concerns specific to “structuring digital platforms,” which consist of using data in a dominated market to make access to that market, data portability, and interoperability more difficult, and hindering the use of multi-homing.¹²⁶

These proposals reflect the idea that the antitrust enforcement toolbox is inadequate to effectively tackle the need to ensure access to data, since it can be imposed only pursuant to the essential facilities doctrine if the resource at issue is considered essential according to the requirements set by the case law.¹²⁷ The proposals aim to empower consumers with greater control over their data and to encourage switching and multi-homing by fostering interoperability and data portability. The rise of digital platforms provides opportunities to better engaging consumers, and as a result policymakers are increasingly turning to demand-side interventions to enhance competition.¹²⁸

¹²⁴ STIGLER COMMITTEE FOR THE STUDY OF DIGITAL PLATFORMS, *supra* note 9, at 32; UK COMPETITION AND MARKETS AUTHORITY, *supra* note 9, at 34; UK DIGITAL COMPETITION EXPERT PANEL, *supra* note 9, at 9. *See also* U.S. HOUSE OF REPRESENTATIVES REPORT, *supra* note 1, at 384–88, recommending that Congress consider data interoperability and portability to encourage competition by lowering entry barriers for competitors and switching costs by consumers.

¹²⁵ GERMAN COMMISSION, *supra* note 11, at 50–52.

¹²⁶ FRENCH COMPETITION AUTHORITY, *supra* note 11, at 7–8.

¹²⁷ Giuseppe Colangelo & Mariateresa Maggolino, *Big Data as Misleading Facilities*, 13 EURO. COMPETITION J. 249 (2017).

¹²⁸ Amelia Fletcher, *Disclosure As a Tool for Enhancing Consumer Engagement and Competition*, BEHAV. PUB. POL’Y (forthcoming); Executive Summary, OECD Session: Consumer-Facing Remedies (June 5, 2018),

Data portability has also become a key concern for major market players. In July 2018 four tech giants (Microsoft, Google, Twitter, and Facebook) announced the launch of a joint open-source initiative called the Data Transfer Project. Acknowledging that data portability and interoperability are central to innovation, its objective is to ease user data transfers among the platforms.¹²⁹

Relying on the same goals and premises of the abovementioned proposals, in recent years European institutions have tackled some important data-related issues by enacting regulatory interventions to grant users a right to personal data portability,¹³⁰ to promote the free flow of non-personal data in the commercial arena¹³¹ and the re-use of public sector information,¹³² and to empower individuals by introducing contractual rights when digital services are supplied to consumers who provide access to their data.¹³³ Moreover, sector-specific legislation on data access has been adopted to address identified market failures, such as payment service providers¹³⁴ and smart metering information.¹³⁵ Finally, the Commission recently announced a Data Act on issues that affect relations between actors in the data-agile economy to provide incentives for horizontal data sharing across sectors.¹³⁶

<http://www.oecd.org/daf/competition/consumer-facing-remedies.htm>.

¹²⁹ FACEBOOK, GOOGLE, MICROSOFT, AND TWITTER, DATA TRANSFER PROJECT 3 (2018).

¹³⁰ Commission Regulation 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, art. 20 2016 O.J. (L 119/1).

¹³¹ Commission Regulation 2018/1807 of 14 November 2018 on a framework for the free-flow of non-personal data in the European Union, 2018 O.J. (L 303/59).

¹³² Directive 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information, 2019 O.J. (L 172/56).

¹³³ Directive 2019/770 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the supply of digital content and digital services, art. 16 2019 O.J. (L 136/1).

¹³⁴ Directive 2015/2366, of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, 2015 O.J. (L 337/35).

¹³⁵ Directive 2019/944, of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity, 2019 O.J. (L 158/125).

¹³⁶ European Commission, *supra* note 98, at 13.

A general and broad data portability right is also the subject of the recent Australian Government's Consumer Data Right. As part of the commitment to giving consumers greater control over their data, all customers (both individuals and businesses): will be entitled to exercise the general portability right in relation to the classes of data covered by the right, will have greater access to their own data in a usable form, and will be able to securely transfer data to trusted third parties.¹³⁷ The Australian Consumer Data Right will be applied sector-by-sector, following an analysis of the merits of applying the right to different classes of data and data holders. Since data may vary between sectors, an industry data-specification process will enable the relevant industry to determine the types of data that will be covered, as well as mechanisms for transfer and security protocols. In particular, the Consumer Data Right will commence in the banking sector, followed by the energy and telecommunication sectors.

On a similar note, U.S. Senators Mark Warner, Richard Blumenthal, and Josh Hawley have recently cosponsored a bill ("Augmenting Compatibility and Competition by Enabling Service Switching Act") promoting the portability of data generated on large platforms as well as the interoperability among them.¹³⁸ Notably, the bill would require a large communications platform provider to maintain a set of transparent, third-party-accessible interfaces (including APIs) when transferring user data to a user or to a competing communications provider acting at the direction of a user, in a structured and readable format.

Alongside the access to account (XS2A) rule introduced by the EU Payment Service Directive (PSD2)¹³⁹ and the Australian Consumer Data Right¹⁴⁰, it is worth mentioning the

¹³⁷ Consumer Data Right Report, Australian Government (2019), <https://treasury.gov.au/consumer-data-right>.

¹³⁸ Augmenting Compatibility and Competition by Enabling Service Switching Act of 2019, S. 2658, 116th Cong. § 1 (2019).

¹³⁹ *Supra* note 134.

¹⁴⁰ AUSTRALIAN COMPETITION & CONSUMER COMMISSION, CONSUMER DATA RIGHT RULES 2020 (2020)

UK Open Banking remedy, which is the result of the CMA's market investigation in the British retail banking sector.¹⁴¹ Following this market investigation, the CMA enacted a comprehensive remedy package complementary to the PSD2 framework and explicitly designed it to accelerate the implementation of the XS2A. This mandates the nine major British banks to jointly develop a single, open standardized set of application programming interfaces (APIs) freely available for the whole industry.¹⁴²

All these digital regulatory interventions share a similar pro-competitive rationale—to encourage competition by promoting access to data and facilitating data sharing and portability. These provisions have a clear policy implication. Namely, they are undermining the narrative that tech giants do not deserve their dominant positions, because they have acquired them by leveraging their data against rivals and exploiting consumers' fragilities. By affirming individuals' control over their personal data and promoting the sharing of non-personal data in business activities, the European and Australian regulations are expected to avoid the lock-in of data, to re-balance the relationship between digital consumers and digital platforms, and to encourage competition between companies. Thanks to provisions which ensure data portability, data sharing, and access to bank accounts, tech-giants will no longer be able to use the competitive advantages deriving from data to defend and entrench their market positions. As a consequence, if consumers continue to prefer BigTechs, there would be no doubt that they are the most efficient and innovative players in the market.

Nonetheless, several studies are questioning the effectiveness of data portability in fostering market competition. Some commentators warn against the unintended

<https://www.accc.gov.au/media-release/consumer-data-right-rules-made-by-accc>.

¹⁴¹ UK COMPETITION AND MARKETS AUTHORITY, *Retail Banking Markets Investigation*, IN FINAL REPORT 3, 6 (2016).

¹⁴² See Oscar Borgogno & Giuseppe Colangelo, *Data sharing and interoperability: Fostering Innovation and Competition Through APIs*, 35 COMPUTER L. & SEC. REV. (2019).

competitive effects of the European General Data Protection Regulation (GDPR), claiming that it has entrenched the market power of incumbents.¹⁴³ Similar concerns have been raised about the entry of BigTechs into retail banking as a result of the access to account rule introduced by the revised EU Payment Service Directive (PSD2).¹⁴⁴ By harnessing massive quantities of data generated by their networks and having access to payment account information allowed by the PSD2, large technology companies may disrupt retail banking markets. Therefore, some voices warn against the risk of a regulatory backfire invoking further regulatory measures such as introducing *ad hoc* provisions to prevent anti-competitive practices by BigTech platforms instead of relying on antitrust law to oversee the digital transition of financial markets boosted by data sharing regulations.

In particular, a self-explanatory bill, “Keep Big Tech Out of Finance Act,” was introduced before the House of Representatives in October 2019.¹⁴⁵ If passed, the bill

¹⁴³ See Michail Batikas, Stefan Bechtold, Tobias Kretschmer, & Christian Peukert, *European Privacy Law and Global Markets for Data*, (CEPR Discussion Paper No. 14475, March 2020), http://cepr.org/active/publications/discussion_papers/dp.php?dpno=14475; James Bessen, Stephen M. Impink, Lydia Reichensperger, & Robert Seamans, *GDPR and the Importance of Data to AI Startups*, Boston University School of Law, (Law & Economics Series Paper No. 20-13, Sept. 10, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3576714; Michal Gal & Oshrit Aviv, *The Unintended Competitive Effects of the GDPR*, J. COMPETITION L. AND ECON. (forthcoming); Damien Geradin, Theano Karanikioti, & Dimitrios Katsifis, *GDPR Myopia: How a Well-Intended Regulation Ended up Favoring Google in Ad Tech*, (TILEC Discussion Paper No. 12, May 11, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3598130; Garrett Johnson & Scott Shriver, *Privacy & Market Concentration: Intended & Unintended Consequences of the GDPR*, (2020) (unpublished manuscript) (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3477686); Jian Jia, Ginger Zhe Jin, & Liad Wagman, *The short-run effects of GDPR on technology venture investment*, (NBER Working Paper No. 25248, Nov. 2018), <https://www.nber.org/papers/w25248>. See also Wing M.W. Lam & Xingyi Liu, *Does Data Portability Facilitate Entry?*, INT’L J. INDUST. ORG. (forthcoming), arguing that data portability may hinder switching and entry due to the demand-expansion effect where the prospect of easier switching due to data portability may entice consumers to provide even more data to the incumbent, hence strengthening the incumbency advantage.

¹⁴⁴ See Oscar Borgogno & Giuseppe Colangelo, *Data, Innovation and Competition in Finance: The Case of the Access to Account Rule*, 31 Euro. Bus. L. Rev. 573 (2020); Xavier Vives, *Digital Disruption in Financial Markets*, 11 ANN. REV. FIN. ECON. 243 (2019); Miguel de la Mano & Jorge Padilla, *Big Tech Banking*, 14 J. COMPETITION LAW & ECON. 494 (2018).

¹⁴⁵ H.R. 4813, 116th Cong. § 1 (2019).

would prohibit large technology companies from either acting as a financial institution or being affiliated with any financial institution. In the European landscape, the Expert Group on Regulatory Obstacles to Financial Innovation recommended that the European Commission introduce *ex ante* rules to prevent large, vertically integrated platforms from discriminating against products and services provided by third parties.¹⁴⁶ The fear is that BigTechs could quickly monopolize the market for financial services by combining different types of financial and non-financial services, and giving preferential treatment to their own products and services compared to those provided by incumbents and start-ups.¹⁴⁷

From this perspective, the growing use of technology to provide financial services (FinTech) and the emergence of platform business models in finance (Open Banking) represent a perfect case study to assess opportunities, limits, and risks of regulating emerging technologies and digital players. As I will illustrate in the following section, crafting an *ex ante* asymmetric regulation tailored to the size of online companies could be at odds with the pro-competitive aim of data sharing provisions and illustrate that policymakers may be intervening simply because they dislike certain market outcomes.

1. Open Banking and BigTechs in Finance

The European XS2A rule, the UK Open Banking remedy, and the Australian Consumer Data Right are meant to spur innovation and competition in retail payment and banking industries. The retail banking sector has traditionally been affected by low elasticity of demand, consumer adherence, and lock-in problems allowing banks to enjoy economic rents. Namely, an established customer base (so-called “back-book customers”) gives an unfair competitive advantage to incumbents, and less favourable conditions are offered when compared to front-book customers who are more prone to switching in

¹⁴⁶ EXPERT GROUP ON REGULATORY OBSTACLES TO FINANCIAL INNOVATION, *supra* note 78, at 79–80.

¹⁴⁷ Crémer, de Montjoye, & Schweitzer, *supra* note 26, at 33.

search of a better deal. Consequently, the more established banking firms have not only been able to retain stable and broad market shares, but they have also been substantially free to engage in bundling and tying practices to the detriment of competition and, ultimately, of consumer welfare.

Technology-enabled solutions might alter the bargaining power between customers and financial providers, thereby transforming how providers will compete and how customers will interact with financial providers.¹⁴⁸ Indeed, FinTech retains the potential to trigger a process of adding banking into its core activities. FinTech can perform domestic and cross-border payment services (through digital wallets or pre-funded e-money), customer relationship (by providing price comparison, switching services, and robot-advisory services), retail and commercial banking (by offering innovative lending and borrowing platforms), wholesale banking and markets, wholesale payment, clearing, and settlement infrastructure.

However, in order to promote innovation and competition in the banking and financial landscape and pave the way for *FinTech*, *policymakers need to address a data bottleneck problem*.¹⁴⁹ Information is a key input to compete in financial services, since the entire sector builds on information and information management. Therefore, the type of information that financial institutions have and the way they use it is pivotal for the potential impact of FinTech. As keepers of customers' finances, banks play a gateway role that is crucial to the viability of many FinTech business models. While newcomers seek to gain access to this essential information in order to steer customers towards their services, incumbents will be unwilling to share their data booty. In this respect, customers' account data can be regarded as a barrier to entry for newcomers.

Against this background, the European PSD2, the UK Open Banking remedy, and

¹⁴⁸ Oscar Borgogno & Giuseppe Colangelo, *Consumer Inertia and Competition-Sensitive Data Governance: The Case of Open Banking*, 9 J. EURO. CONSUMER & MKT. L. 143 (2020).

¹⁴⁹ Borgogno & Colangelo, *supra* note 142.

the Australian Consumer Data Right give customers the ability to control their accounts by allowing third party providers to initiate payment orders or to use their transaction data, thus paving the way towards open banking. Open Banking is flourishing around the world, and it represents a natural consequence of consumer data portability.¹⁵⁰ Within an Open Banking environment, customers can easily perform banking activities with different providers, relying on a single online app to collect all the data necessary to manage their finances. This brings together payment accounts and other products like mortgages, pensions, and investments.

Although these regulatory interventions may create new opportunities for FinTech, data portability and interoperability may also favor the entry of BigTechs. In fact, the competitive impact of BigTech companies may be greater than that of FinTech. The latter face competitive disadvantages vis-à-vis incumbent banks in terms of compliance costs, limited access to soft information about potential customers, brand recognition, lack of reputation, and a relatively high cost of capital. As a result, the relationship between banks and FinTech is likely to be cooperative and complementary

¹⁵⁰ See, e.g., *Ley de Instituciones de Tecnología Financiera* (FinTech Institutions Law), Diario Oficial De La Federación El Diez de Marzo, the new Mexican law regulating FinTech Institutions that came into force on 10 March 2018 and requires financial entities and FinTech institutions to establish APIs to allow, with the prior consent of users, connectivity and access to interfaces developed or managed by other financial entities and FinTech players. In the same vein, the Canadian Competition Bureau has invited policymakers to take significant steps to welcome FinTech by enacting broader open access regimes to financial data through APIs. See Conference Transcript, *Technology-Led Innovation and Emerging Services*, (Nov. 20, 2017) <https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04315.html>. As a result, the Canadian Minister of Finance appointed an Advisory Committee to guide the Government's review into the merits of open banking. See Press Release, *Consumer-Directed Finance: the Future of Financial Services*, (2019) <https://www.canada.ca/en/department-finance/programs/consultations/2019/open-banking/report.html>. Moreover, in 2017 Japan amended its Banking Act to promote open innovation, enabling FinTechs to access financial institution systems via API connection. In the same vein, the Hong Kong Monetary Authority launched the Open API Framework in 2018, providing specific guidance to enable collaboration between banks and third-party service providers, and the Monetary Authority of Singapore published an API Playbook and set up an API register to encourage banks to open up their systems. Finally, also Brazil is following suit with an Open Banking regulation that should be effective by the end of 2020.

in nature.¹⁵¹ Similarly, banks show a willingness to interact with FinTech as service providers, avoiding expensive integration efforts.¹⁵²

Unlike FinTech, BigTech firms already enjoy reputation, established networks, large installed customer bases, considerable earnings, powerful brands, and unfettered access to capital markets. Furthermore, they can leverage proprietary data silos derived from their non-financial-service operations to provide consumers with tailored offers, and they have the analytical skills and the most advanced technologies with which to process transaction and consumer data so as to get the most out of their resources. Because of these factors, BigTech firms could scale-up in financial markets very quickly, thereby posing a significant competitive, and potentially disruptive, threat to traditional banking.

The entry of large digital platforms into the financial sector magnifies both the benefits provided and the concerns raised by FinTech companies. Focusing just on antitrust implications, on the one hand, drawing on their leadership in big data analytics as well as on digital services and infrastructure, BigTechs may further increase competitive pressure on the incumbent side. In turn, this will likely stimulate responses from the incumbent side, ultimately improving consumer welfare and financial inclusion. On the other hand, the disruption evidenced by other industries because of BigTechs

¹⁵¹ Luca Enriques & Wolf-Georg Ringe, *Bank-Fintech Partnerships, Outsourcing Arrangements and the Case for a Mentorship Regime*, (Euro. Corp. Gov. Inst. Working Paper No. 527, 2020) http://ssrn.com/abstract_id=3625578; Rebel A. Cole, Douglas J. Cumming, & Jon Taylor, *Does FinTech Compete with or Complement Bank Finance?*, (Sept. 5, 2019) (unpublished manuscript) (<https://ssrn.com/abstract=3302975>); FINANCIAL STABILITY BOARD, *FinTech and Market Structure in Financial Services: Market Developments and Potential Financial Stability Implications*, (Feb 14, 2019) <http://www.fsb.org/2019/02/fintech-and-market-structure-in-financial-services-market-developments-and-potential-financial-stability-implications/>.

¹⁵² See Jonathan Cardenas, *Corporate Venture Capital Investment in Fintech: A Transatlantic Perspective 7* (Stanford-Vienna Trans-Atlantic Tech. L. Forum Working Paper No. 56, 2020), <https://law.stanford.edu/publications/no-56-corporate-venture-capital-investment-in-fintech-a-transatlantic-perspective/>, noting that banks are increasingly collaborating with early-stage Fintech startups through incubator and accelerator programs (including Barclays Accelerator, Citi Ventures Fintech Accelerator, Deutsche Bank Innovation Labs and Goldman Sachs Accelerate), as well as through corporate venture capital investment.

entry might raises antitrust concerns. Digital platforms can make full use of data access mechanisms in order to strengthen their business potential even further by leveraging their data advantage in downstream or conglomerate markets, thereby attaining significant portfolio effects.¹⁵³ Therefore, nothing prevents them from engaging in self-preferencing, bundling new products with traditional services, or discriminating traditional incumbents when accessing to their platforms.

For these reasons, proposals have been specifically targeted to the role of BigTechs in finance. Banks run the risk of being enveloped by BigTech platforms, which may harness the network effects that previously protected the incumbent by assembling much of the information the customer's bank or asset manager possesses, and supplementing it with their detailed knowledge of many other aspects of the customer's choices and preferences.¹⁵⁴

In particular, a bill has been introduced before the U.S. House of Representatives which would prohibit technology companies that have an annual global revenue of over twenty-five billion dollars from either acting as a financial institution or being affiliated with a financial institution.¹⁵⁵ The bill would ban BigTechs from establishing, maintaining, or operating a digital asset that is intended to be widely used as medium of exchange, unit of account, store of value, or any other similar function, thus effectively banning virtual currencies.

Furthermore, the European Expert Group on Regulatory Obstacles to Financial

¹⁵³ BANK FOR INTERNATIONAL SETTLEMENTS, *Big Tech in Finance: Opportunities and Risks*, in BIS ANNUAL ECONOMIC REPORT 67–68 (2019).

¹⁵⁴ See Thomas Eisenmann, Geoffrey Parker, & Marshall Van Alstyne, *Platform Envelopment*, 32 STRATEGIC MGMT J. 1270 (2011), describing the platform envelopment strategy by referring to the entry of a platform with market power in an origin market into another platform's market (the target market): according to this strategy, by combining its own functionality with that of the target in a multi-platform bundle that leverages shared user relationships, the enveloper captures market share by foreclosing an incumbent's access to users and harnesses the network effects that previously had protected the incumbent.

¹⁵⁵ H.R. 4813, 116th Cong. §1 (2019).

Innovation has recommended the introduction of *ex ante* rules to prevent large, vertically integrated platforms from discriminating against products and services offered by third parties.¹⁵⁶ Notably, the Expert Group list three main scenarios: a) large technology companies with access to significant social media, search history, and other data, leveraging their preferential data access to enter the market for financial services and benefiting from access to payment account information; b) providers of smartphone operating systems not providing access to the relevant devices' interface for competing payment applications; and c) providers giving access to devices or software under conditions that can create inefficiencies, such as prohibiting the use of other consumer interfaces or demoting rivals' financial products and services in search engine results.

Finally, incumbents and commentators have proposed to complement the data sharing rule with a reciprocity obligation between BigTechs and banks:¹⁵⁷ if the beneficiary is a large digital company, the access to account rule should be integrated with a corresponding right for banks to access BigTech data that may be used to enhance digital payment services.

With data portability provisions in place to address concerns about the data power of incumbent banks over FinTechs, attention has shifted toward BigTechs' data power over incumbent banks. The regulatory pendulum swings back and forth as more asymmetric regulation is introduced.

However, it is worth remembering that, in the banking sector, gatekeepers are represented by financial institutions, rather than BigTechs. Therefore, by adopting *ex ante*

¹⁵⁶ EXPERT GROUP ON REGULATORY OBSTACLES TO FINANCIAL INNOVATION, *supra* note 78, at 79-80.

¹⁵⁷ de la Mano & Padilla, *supra* note 144, at 503, 514. In 2018 Ana Botín, executive chairman of Santander, voiced a similar call for a data access regime in favor of retail banks: see Nicholas Megaw and Rochelle Toplensky, *Santander Chair Calls EU Rules on Payments Unfair*, FINANCIAL TIMES (April 17, 2018), <https://www.ft.com/content/d9f819f2-3f39-11e8-b7e0-52972418fec4>.

prohibitions against digital players, policy makers run the risk of missing the forest for the trees.

Because regulation significantly affects innovation, competition, and consumer welfare, policymakers ought to be aware of the trade-offs embedded in different approaches. Specifically, policymakers should carefully consider whether it is premature to implement new regulations to protect big banks from BigTechs.¹⁵⁸ As matters stand, it is not yet possible to predict if and how BigTechs are going to approach or disrupt retail banking markets. At present, we are still witnessing individual and cautious attempts by technology companies to provide specific services to their platform users. At the same time, it is becoming evident that FinTech start-ups are set to cooperate, rather than compete, with incumbent banking players. Whether this complementarity ends up in cooperation or full-fledged integration between large incumbent banks and FinTech start-ups, we are still halfway to achieving the pro-competitive goal underlying data access regulatory regimes. In fact, regulatory interventions such as the PSD2, the Open Banking remedy, and the Consumer Data Right, were designed to serve the purpose of creating a more competitive retail banking environment to deliver lower prices and better quality to consumers.

If new asymmetric regulations were introduced as a containment measure specifically aimed at shielding traditional banks from BigTechs' competitive pressure, a twofold problem would arise. First, innovations and efficiencies that potentially could have emerged from platforms would be jeopardized, thereby preventing the creation of new products and services beneficial to consumers. Such a form of regulation would asymmetrically target specific entities, thereby subjecting them to a non-neutral regulatory burden based on a bigness biased assumption that they would behave unfairly

¹⁵⁸ Oscar Borgogno & Giuseppe Colangelo, *The Data Sharing Paradox: BigTechs in Finance*, EURO. COMPETITION J. (forthcoming 2020).

once engaged in retail financial markets. Second, large incumbent banks would be in a privileged position because they would be protected from BigTechs' potential competition but still free to harness FinTech-enabled solutions to drive out of the market small local banks unable to bear the cost of the Open Banking transition. Further, FinTech firms and established financial institutions may join forces to counter the entry of BigTechs.¹⁵⁹ Hence, somewhat paradoxically, early regulatory measures specifically imposed on BigTechs could end up frustrating the pro-competitive aim of data portability regimes previously introduced. Finally, it should be borne in mind that the ordinary legal framework would still apply. Hence, antitrust enforcement would still be required to oversee and fight any anti-competitive conduct as it may arise.

C. Winners, Losers, and the Competition Policy

The debate around the unintended consequences of data sharing provisions, such as those introduced by the GDPR and the several Open Banking initiatives, highlights two main risks associated with the regulation of digital markets.

First, it shows the inherent limitations of regulation, which are heightened when dealing with emerging technologies. Predicting how these technologies will evolve is an unmanageable task even for the most illuminated policymaker. Thus, the final outcome may be remarkably different from the starting goal, especially where the technicalities are not adequately addressed. In this regard, the recent European experience is insightful. As already mentioned, during the last years the European Commission has decided to strengthen competition in data-driven markets with a broad array of different and heterogeneous regulatory initiatives which mandate or encourage data sharing. APIs surfaced as a technical tool capable of ensuring a smooth flow of data between undertakings. By allowing a firm to easily access the data gathered by another company,

¹⁵⁹ Enriques & Ringe, *supra* note 151, at 3.

APIs are set to boost interoperability among different players and facilitate the exchange of data streams or datasets between data holders. However, a clear view as to who should define APIs and how they should define them (i.e. how to standardize their creation) is still lacking.¹⁶⁰ This is an extremely sensitive issue as the success of any data sharing regulation is mainly dependent on the way the industry will implement its technicalities.

Open Banking represents, instead, the leading application of interoperability requirements in a market.¹⁶¹ In order to facilitate data sharing interactions between banks and third-party service providers, this pro-competitive remedy mandates the creation of open standardised APIs which ensures that data are shared in an interoperable form. Thus, this promotes a new, platform-based business ecosystem characterised by the widespread use of data-enabled services to deliver innovative and competitive services to consumers. The economic rationale of Open Banking is to empower customers over their own transaction data so that they can benefit from a strengthened bargaining position against the banks. By departing from paternalistic and defensive consumer protection approaches which have proven to be somewhat ineffective, the Open Banking project gives the centre stage to consumers and puts them in charge of their digital data portfolio. Therefore, Open Banking should serve as a blueprint for data portability and interoperability legislation.

¹⁶⁰ Borgogno & Colangelo, *supra* note 142.

¹⁶¹ OECD Secretariat, *Lines of Business Restrictions – Background Note 27–28* (June 8, 2020) [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WP2\(2020\)1&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WP2(2020)1&docLanguage=En). See also Geoffrey Parker, Georgios Petropoulos, and Marshall Van Alstyne, *Digital Platforms and Antitrust* 20 (June 17, 2020) (unpublished manuscript) (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3608397), looking at the financial regulation as a model for addressing the market design for data sharing. However, see Geoffrey A. Manne & Sam Bowman, *Data Portability and Interoperability: The Promise and Perils of Data Portability Mandates As a Competition Tool*, INTERNATIONAL CENTER FOR LAW & ECONOMICS (Sept. 10, 2020) <https://laweconcenter.org/resource/issue-brief-data-portability-and-interoperability-the-promise-and-perils-of-data-portability-mandates-as-a-competition-tool/>, questioning the benefits of Open Banking in the UK in terms of costs for its implementation and limited users' adoption, hence inviting policymakers to think carefully about imposing broad-based data portability or interoperability mandates across complex markets.

However, the concerns about the possibility that BigTech companies may prevail hide the second major risk associated with top-down solutions. That is, the regulation of digital markets seems to revolve around outcomes rather than on principles.

Moreover, concerns arise with regard to definitions and thresholds for antitrust intervention.¹⁶² Indeed, the very definition of gatekeepers is vague. For instance, according to the EU Commission's proposal for an *ex ante* regulatory framework, this subset of online platforms would be identified on the basis of criteria, such as significant network effects, the size of the user base, and the ability to leverage data across markets, whose relevance has yet to be decided.

Additional doubts emerge about the definition of "tipping" markets. Indeed, the new competition tool envisaged by the European Commission would justify an intervention not only in case of a structural market failure, but also in a scenario of structural risks for competition.¹⁶³ According to the Commission, the latter case applies to tipping markets which require an early intervention to prevent the emergence of risks for competition that can arise through the creation of powerful market players with an entrenched market and/or gatekeeper position. These markets are apparently defined by just referring to certain characteristics (e.g. network and scale effects, lack of multi-homing, and lock-in effects) and the presence of companies with a gatekeeping position.

As recently noted by the UK CMA, whose investigating powers have inspired the European Commission, "identifying when a market might tip is very difficult. There are real risks and difficulties of intervening pre-emptively without significant investigation and strong information gathering powers to determine in which markets and what type of intervention may be warranted and effective. . . . even if one could accurately identify

¹⁶² See Nordic Competition Authorities, *supra* note 118, at 17, stressing that such a regulatory intervention should rely on a clear and objective set of criteria. It needs to be clear which companies are considered digital gatekeepers, and companies must be able to foresee which type of regulation they will be subject to.

¹⁶³ European Commission, *supra* note 96.

when tipping may occur and could identify and act swiftly enough to implement a suitable remedy, there remain questions as to the benefits of intervening. Intervening where unwarranted would have significant negative consequences in the market in which intervention occurs but could also deter procompetitive innovation across all markets.”¹⁶⁴

In sum, in preserving the intensity of competition among platforms, a sector-specific regulation could be a valuable complement to antitrust enforcement where data represent a real bottleneck that does not allow a level playing field, such as in the banking and financial industry. However, the regulatory proposals for digital markets by asymmetrically targeting specific entities (i.e. banning BigTechs from operating in financial markets or *ex ante* preventing them from adopting certain practices) suggests that regulatory interventions in digital markets may be underpinned on a bigness bias. That is, the idea that competition is good only when it comes from some players, even when new big digital players are challenging actual (although non-digital) gatekeepers and making contestable markets that have been traditionally affected by low elasticity of demand and lock-in problems that allow incumbents to enjoy significant economic rents. Hence, digital policies are required to ensure an outcome, rather than safeguarding the process.

For these reasons, it is appropriate to embrace regulatory humility, acknowledging the limits of regulation and refraining from picking winners and losers in the marketplace and from preemptively intervening in absence of solid evidences of market failure and consumer harm.¹⁶⁵

¹⁶⁴ Press Release, Competition and Markets Authority, Response to the European Commission’s Consultations in Relation to the Digital Services Act package and New Competition Tool ¶¶ 65, 68 (2020) (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/917455/CMA-response_to_DSA_and_NCT_consultations.pdf).

¹⁶⁵ Maureen K. Ohlhausen, Former FTC Comm’r, Remarks before American Enterprise Institute: Regulatory Humility in Practice (April 1, 2015). *See also* Ajit Pai, Chairman, Fed. Comm’n Comm’n, Remarks Before

IV. CONCLUDING REMARKS: THE LAST DANCE OF ANTITRUST?

This is not the first time antitrust law and policy has faced a stress test to evaluate whether it is able to keep up with changing and challenging times. Technology and innovation fuel a longstanding and ongoing process of assessment and re-evaluation of rules, tools, and doctrines. A couple of decades ago, similar concerns were expressed that antitrust law was not well-equipped to address the new economy. The toolkit developed to deal with competition in the brick-and-mortar age was deemed ill-suited to face the dynamism of the new economy. However, as noted by Richard Posner, “antitrust doctrine is supple enough, and its commitment to economic rationality strong enough, to take in stride the competitive issues presented by the new economy.”¹⁶⁶ By the same token, more recently Daniel Sokol has reminded us that “[i]n a world of continuous change, antitrust is what remains constant. It has the tools to police against unlawful exercise of monopoly power and adapts to changes in economic theory and empirics.”¹⁶⁷

The state of competition in the digital marketplace is now questioned because of the emergence of large tech companies, commonly labeled as titans, giants, and gatekeepers.¹⁶⁸ The success of these companies has attracted every kind of spotlight, enough to become a literary genre.¹⁶⁹

The current debate about the alleged crisis of antitrust in the digital economy is driven by two main arguments. First, digital markets move too fast to be supervised *ex*

the 18th Global Symp. for Regulators, (July 10, 2018).

¹⁶⁶ Richard A. Posner, *Antitrust in the New Economy*, 68 ANTITRUST L. J. 925 (2001).

¹⁶⁷ Daniel D. Sokol, *Antitrust’s “Curse of Bigness” Problem*, 118 MICH. L. REV. 1, 22–23 (2020).

¹⁶⁸ See Dirk Auer & Nicolas Petit, *Two Systems of Belief about Monopoly: The Press vs. Antitrust*, 39 CATO J. 99 (2019), noting that much of the press coverage describes these large corporate organizations in derogatory terms and makes extensive use of the word “monopoly” in a pejorative way conveying the vision of monopoly as *malum in se*.

¹⁶⁹ As noted by NICOLAS PETIT, *BIG TECH AND THE DIGITAL ECONOMY: THE MOLIGOPOLY SCENARIO* 92 (2020) (“[b]ooks on the tech giants have become a genre of their own. There is one for every taste, and in every airport.”).

post, hence antitrust enforcers would often intervene after the tipping point. Second, the emergence of platform-based companies enjoying a brand-new type of market power implies greater responsibilities and justifies specific responses. By acting as gatekeepers and private regulators, large digital platforms perform a systemic role in markets, increasing the risk of tipping and an uneven playing field within their digital ecosystems.¹⁷⁰ These concerns are heightened by their dual role and the associated conflict between playing both the role of traditional retailers and third-party sales platforms simultaneously. For these reasons, it is argued that BigTechs deserve to be treated like common carriers and subjected to a neutrality regime aimed at ensuring fairness and contestability on the platform and on neighbouring markets.

The need for timely intervention in fast-moving markets by introducing a blend of corrective tools such as *ex ante* prohibitions, market investigations, break-ups and bans on vertical integration, legal presumptions, and shifts of the burden of proof supports a regulatory approach aimed at making antitrust assessment faster and simpler. As maintained by prominent antitrust scholars, “antitrust laws, as interpreted and enforced today, are inadequate to confront and deter growing market power . . . current antitrust doctrines are too limited to protect competition adequately, making it needlessly difficult to stop anticompetitive conduct in digital markets.”¹⁷¹ As further argued by the American Antitrust Institute, “[s]uch solutions should be unnecessary if antitrust law were better enforced.”¹⁷²

By advocating an overhaul of the antitrust toolkit with the introduction of *ex ante* prohibitions against gatekeeping platforms, the reform proposals blur the line between

¹⁷⁰ Tech platforms also serve as private courthouses for disputes about speech, lodging, commerce, elections, and reputation in the information age. See Rory Van Loo, *Federal Rules of Platform Procedure*, Univ. Chi. L. Rev. (forthcoming 2020), analyzing the processes that tech platforms use to resolve disputes.

¹⁷¹ WASHINGTON CENTER FOR EQUITABLE GROWTH, *supra* note 1, at 1.

¹⁷² AMERICAN ANTITRUST INSTITUTE, *supra* note 1, at 3.

regulation and antitrust and mix their respective features and goals. For this reason, it seems appropriate to label it as the “more regulatory” approach to antitrust law in order to describe a shift of antitrust enforcement from the law enforcement model toward the regulatory model, as Douglas Melamed anticipated some years ago.¹⁷³

Indeed, the solutions offered do not reflect the traditional paradigm of economic regulation, because they are aimed at curing an enforcement failure rather than a market failure. Further, they are cross-sectoral, general in scope, and applicable to any business performed via a digital platform. Since the data-driven economy is pushing a platformization process in many industries, we can argue that, in the near future, this special set of regulatory provisions will represent the ordinary state of the economy. At the same time, the interventions proposed do not reflect the standard antitrust analysis, either. They call for an assessment that is neither flexible nor technology-neutral or facts-based. Moreover, the *ex ante* regime for platforms revolves around outcomes rather than principles, hence competition enforcers would be required to intervene in order to ensure a particular market result, rather than safeguarding the competitive process.

Herbert Hovenkamp has recently noted that the history of digital platform monopolies is not distinctive from that of other industries¹⁷⁴: “[T]here does not seem to be any evidence that durability of a dominant position is a more prominent feature of digital platform markets than for markets generally. Even among digital markets, entry and exit continuously occur, shares change, and dominance comes and goes.” Further, there is little empirical support for the proposition that digital platforms as a group are winner-take-all markets, rather the landscape for digital markets resembles the landscape for markets in general.¹⁷⁵ “Some of them are more conducive to single firm dominance

¹⁷³ A. Douglas Melamed, *Antitrust: The New Regulation*, 10 *Antitrust* 13 (1995).

¹⁷⁴ Herbert Hovenkamp, *Antitrust and Platform Monopoly*, 27 (Univ. Pa. Inst. for L. & Econ., Research Paper No. 20-43, 2020).

¹⁷⁵ *Id.* at 15.

than others, and few are true natural monopolies. Some resemble markets with a dominant firm plus a competitive fringe. Others enjoy competition among more evenly sized rivals.”

In sum, the real focus of the ongoing debate is not whether, in the digital economy, *ex ante* regulation may be favoured to antitrust enforcement; rather, it is whether well-established economic standards of antitrust analysis should leave room for a tailored set of *ex ante* provisions which, under closer scrutiny, reveal the attempt to move from an effects-based approach to a system centred on legal presumptions and legal testing. Identifying *ex ante* the types of conduct that are anticompetitive and reversing the burden of proof would save time and alleviate risks of underenforcement. Rather than reflecting the distinctive structural features of digital markets, the invoked regulatory approach seems to be merely an enforcement short-cut and is an attempt to address alleged anti-competitive practices by online platforms while avoiding the hurdles and burdens of the standard antitrust analysis.¹⁷⁶ Thus, against this background, the circumstance that some reports proposed the establishment of a digital authority appears of little significance.

However, the features of platform economics contribute crucially to the analysis of the effects of conduct. As acknowledged in the special advisers’ report for the European Commission, the efficiencies of certain practices in the platform economy are “not yet well understood and our knowledge and understanding still needs to evolve

¹⁷⁶ See Joint Submission of Antitrust Economists, Legal Scholars, and Practitioners to the House Judiciary Committee on the State of Antitrust Law and Implications for Protecting Competition in Digital Markets, 8–11 (May 15, 2020) https://gai.gmu.edu/wp-content/uploads/sites/27/2020/05/house_joint_antitrust_letter_20200514.pdf. Claiming that there is no evidence of systematic harm in digital markets arising from lax antitrust enforcement and there is no sound basis for abandoning Supreme Court precedent simply to make it easier for the Government and private plaintiffs to prevail. The signatories are Jonathan M. Barnett, Michael R. Baye, James C. Cooper, Daniel Crane, Kenneth G. Elzinga, Richard A. Epstein, Deborah A. Garza, Thomas Hazlett, Justin Hurwitz, Benjamin Klein, Abbott Lipsky, Geoffrey A. Manne, Scott Masten, Maureen K. Ohlhausen, James F. Rill, Jan M. Rybnicek, Vernon L. Smith, David J. Teece, Robert Willig, and Joshua D. Wright.

step by step.”¹⁷⁷ Because of network externalities, the circumstances in which the conduct within a multisided platform can determine a restriction of the market are exactly the same as those which can generate procompetitive effects.¹⁷⁸ Hence, intervening by picking and choosing conduct that harms competition irrespective of their effect would not be appropriate and could irreversibly compromise the platform’s very existence.¹⁷⁹ In order to consider a practice, by its very nature, harmful to competition, without an analysis of its effects, there must be “sufficiently reliable and robust experience.”¹⁸⁰

Similarly, by attaching a special responsibility to digital platforms due to their rule-setting role, the reform proposals are challenging their business models and their multi-sided nature, or in other words, their status. Quite simply, their fault is essentially that they are successful, and thus subject to scrutiny regardless of whether they have achieved their leading positions through competing on the merits.¹⁸¹

Despite the lack of a universally-adopted definition of two/multi-sided markets, their roots are mainly grounded in the theory of network externalities and in the Coasian analysis of private bargaining as a means of addressing transaction cost problems. A two/multi-sided market is generically characterized by the following distinctive traits:

¹⁷⁷ Crémer, de Montjoye, & Schweitzer, *supra* note 26, at 70.

¹⁷⁸ Alfonso Lamadrid de Pablo, *The Double Duality of Two-Sided Markets*, 64 COMPETITION L. 5 (2015).

¹⁷⁹ See Geoffrey A. Manne, *Against the Vertical Discrimination Presumption*, 2 CONCURRENCES 1 (2020), underlining the relevance of optimizing openness in order to preserve the effective operation of the platform and its own incentives for innovation, since, while constraints on complementors’ access and use may look restrictive compared to an imaginary world without any restrictions, in such a world the platform would not be built in the first place.

¹⁸⁰ CJEU, 2 April 2020, Case C-228/18, *Gazdasági Versenyhivatal v. Budapest Bank Nyrt*, para. 76.

¹⁸¹ From this perspective, as argued by Picker, *supra* note 107, at 2, 35, whether the question is about how to support the role that newspapers and media play in democracies or how to establish fair competition on the platform, it would be better to look outside of antitrust for solutions because these questions belong to regulation: “How these companies have behaved once they achieved their leading positions is something very much within traditional antitrust analysis, but their success in achieving those positions initially is something that the United States should celebrate and is outside traditional antitrust analysis. This is market success, not fault. And, based on the enforcement record so far, I am doubtful that a more encompassing European Union-style competition law would be effective either.”

the presence of indirect network externalities that cannot be internalized through a bilateral exchange (usage and membership externalities); the necessity for an intermediary to intervene to resolve a transaction cost issue, thereby generating value for at least one of the interested sides; the interdependence needed between the groups that interact through the platform to bring “both sides on board” as the platform has to gather a sufficient number of economic agents on every side of the market in order to reach a critical mass to foster indirect network effects; the non-neutrality of price structuring by the platform which, in order to bring both sides on board, needs to impose asymmetrical prices on the different groups operating on the platform (skewed pricing), so that these prices, although not reflecting the effective cost of the service offered to a given group of users, can incorporate demand elasticity.¹⁸²

In addition to being useful in understanding a possible theory of harm, these characteristics of two/multi-sided markets have an impact on the antitrust evaluation of conduct and price strategies.¹⁸³ If the agents on each side are interdependent and their welfare depends on the combination of the effects on the different sides of the platform, businesses compete to attract two demands so that the coordinating role played by platforms is required by the essential feature of the competition in digital markets. By setting rules, platforms attempt to bring and keep both sides on board because they address externalities among users and balance different interests.¹⁸⁴ Thus, by developing

¹⁸² For more on platforms and two-sided markets, see John M. Yun, *Overview of Network Effects & Platforms*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

¹⁸³ Oscar Borgogno & Giuseppe Colangelo, *Antitrust analysis of two-sided platforms: The day after AmEx*, 15 EURO. COMPETITION J.107 (2019); Giuseppe Colangelo & Mariateresa Maggiolino, *Applying Two-Sided Markets Theory: The MasterCard and American Express Decisions*, 14 J COMPETITION L & ECON. 115 (2018); Dirk Auer & Nicolas Petit, *Two-Sided Markets and the Challenge of Turning Economic Theory into Antitrust Policy*, 60 ANTITRUST BULLETIN 426 (2015).

¹⁸⁴ See, e.g., David S. Evans, *Governing Bad Behaviour by Users of Multi-Sided Platforms*, 27 BERKELEY TECH. L. J. 1201 (2012). See also Kevin Boudreau & Andrei Hagiu, *Platform Rules: Multi-Sided Platforms as Regulators*, in PLATFORMS, MARKETS AND INNOVATION (Annabelle Gawer, ed., 2009) (providing a conceptual framework for interpreting various non-price instruments used by them in order to solve what would otherwise be

governance mechanisms, platforms protect the value of the ecosystem. Since competition in the digital economy is essentially a competition between ecosystems,¹⁸⁵ setting rules within their ecosystem platforms would not be equivalent to private regulation; they would merely compete in the way they are expected to.¹⁸⁶

Moreover, digital platforms employ different business models and this choice inevitably affects their incentives, determining how they react to the evolution of the ecosystem and how strategies for interacting with third party complementors affect consumers.¹⁸⁷ Hence, business models matter even more when policy makers are evaluating the dual role of platforms and it is problematic to design a single regulatory framework which encompasses heterogeneous players on the only premise that they exert gatekeeper power. Finally, the very definition of gatekeepers is vague.

This does not mean that platforms have a license to engage in any conduct simply because it is in line with their business model. But, it is necessary to foresee the degree to which a regulatory intervention can affect competition by considering the specificity of the business models involved.

The emergence of platform business models does not require a shift in the current equilibrium between antitrust and regulation.¹⁸⁸ Competition law is fit to preserve the

(multi-sided) market failures).

¹⁸⁵ See Crémer, de Montjoye, & Schweitzer, *supra* note 26, at 33–34; Petit, *supra* note 169, referring to BigTechs as “mologopolies,” meaning conglomerates which play a dynamic oligopoly game competing across industries, rather than competing within itemized relevant markets where they are monopolists.

¹⁸⁶ Alfonso Lamadrid de Pablo, *Shortcuts and Courts in the Era of Digitization*, CPI ANTITRUST CHRON. (Oct. 2019), <https://antitrustlair.files.wordpress.com/2019/11/cpi-shortcuts-and-courts-in-the-era-of-digitization-lamadrid.pdf>.

¹⁸⁷ Caffarra, Etro, Latham, & Scott Morton, *supra* note 118.

¹⁸⁸ See Hovenkamp, *supra* note 174, at 8, arguing that, beyond platform mergers, there are several things that courts could do better without new legislation or significant change in judicial enforcement. *See also* Hazlett, *supra* note 120, at 33, noting that business model competition shapes markets en route to the discovery of varied and surprising forms of competitive superiority, hence where anti-competitive outcomes result, it will be the exception rather than the rule.

contestability of markets. Because the incumbency advantage in digital markets significantly depends on whether customers multi-home, competition policy should be focused on reducing barriers to entry, lowering switching costs, and encouraging interoperability and consumer engagement¹⁸⁹ rather than targeting corporate bigness regardless of whether they affect the competitive process.¹⁹⁰

At the same time, in preserving the intensity of competition among platforms, regulation may undoubtedly play a relevant role that is limited to structural problems. Notably, in specific markets such as the banking and financial industry where data represent a real bottleneck that does not allow a level playing field, data portability provisions envisaged in the European PSD2, the UK Open Banking remedy, and the Australian Consumer Data Right unlock competition and innovation by ensuring adequate levels of interoperability so that consumers are able to share their data with different providers in a secure and standardized format. In cases like this, a sector-specific regulation is a valuable complement to antitrust enforcement.

As pointed out by Dennis Carlton and Randy Picker, “in the century-long seesaw battle over how to design competition policy, [antitrust law] has turned out to be more enduring than regulation. . . . The history shows that at least for the United States, the increased use of the Sherman Act instead of regulation to control competition, and when necessary, the complementary use of the two, has brought benefits to consumers.”¹⁹¹

¹⁸⁹ Pinar Akman, *An Agenda for Competition Law and Policy in the Digital Economy*, 10 J EURO. COMPETITION L. & PRACTICE 589, 590 (2019). See also Tirole, *supra* note 6, stressing the competitive benefits of multihoming.

¹⁹⁰ Hearing on “Online Platforms and Market Power Part 2: Innovation and Entrepreneurship Before the Subcomm. On Antitrust, Commercial, and Administrative Law, 116th Cong. (2019) (statement of Maureen K. Ohlhausen, Partner, Baker Botts L.L.P.). See also Daniel A. Crane, *Four Questions for the Neo-Brandeisians*, 1 CPI ANTITRUST CHRON. 63, 66 (2018) (maintaining that “[e]ven during the era in which Brandeisian views largely prevailed in the Supreme Court, mere corporate bigness was not sufficient to constitute an antitrust offense.”).

¹⁹¹ DENNIS W. CARLTON & RANDAL C. PICKER, *Antitrust and Regulation*, in ECONOMIC REGULATION AND ITS REFORM 25–26, 58 (N.L. Rose ed., 2014).

Competition is the best regulator, even in the platform economy. Looking forward to the challenges ahead.

Algorithmic Collusion and Algorithmic Compliance: Risks and Opportunities

Ai Deng*

INTRODUCTION

Recent years have seen a surge of interest in algorithmic collusion in the global antitrust community. Since the publication of Ariel Ezrachi and Maurice Stucke's influential *Virtual Competition* in 2016,¹ which brought algorithmic collusion to the forefront of the world of antitrust, numerous articles, commentaries, and agency reports have been published on this topic. In late 2018, the US Federal Trade Commission (FTC) devoted an entire hearing to the implications of artificial intelligence (AI) and algorithms at its Hearings on Competition and Consumer Protection in the 21st Century. António Gomes, Head of the Competition Division at the Organization for Economic Co-operation and Development (OECD), succinctly summarized the concerns about algorithmic collusion in a 2017 interview, stating that developing artificial intelligence (AI) and machine learning that enable algorithms more efficiently to achieve a collusive outcome is "the most complex and subtle way for companies to collude, without explicitly programming algorithms to do so."²

The possibility of tacit collusion is not hard to see in some highly stylized cases. For example, suppose you and I are the only two online sellers of a homogeneous product and we know that our procurement costs are similar. Because our prices are posted

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¹ See ARIEL EZRACHI & MAURICE STUCKE, *VIRTUAL COMPETITION* (2016).

² *CPI Talks... Interview with Antonio Gomes of the OECD*, CPI ANTITRUST CHRON., May 2017, at 1, <https://www.competitionpolicyinternational.com/cpi-talks-interview-with-antonio-gomes-of-the-oecd/>.

online, we also know each other's pricing.

Suppose I adopt the following strategy: First, I raise and then keep my price high until you also change your price. If you do not raise your price in response to my price increase, I then drop my price to the cost of the product, or even below the cost. The low price "hurts" both your revenue and mine. I keep this "low price" regime for a period of time and then repeat the process of raising and then lowering prices if you do not raise your prices as well. After several rounds of interaction, it is *possible* that you realize that I appear to be sending you a signal: raise price with me or suffer financial losses. At that point, you might decide to reciprocate my price increase, given our shared interest in long-term profitability. Notice that during the entire interaction, there are no traditional communications between us. We do not even need to know each other as long as all the conditions are met and the intended learning is somehow achieved.³ Note the "reward-punishment" element in my algorithm, a point which I will return to.

Many have argued that the threat of algorithmic collusion is real and poses much greater challenges for antitrust enforcement than human coordination and collusion. Maurice E. Stucke and Ariel Ezrachi postulate that AI "can expand tacit collusion beyond price, beyond oligopolistic markets, and beyond easy detection."⁴ Michal S. Gal stated that "a more complicated scenario involves tacit collusion among algorithms, reached without the need for a preliminary agreement among them."⁵ Dylan I. Ballard and Amar S. Naik echoed, "Joint conduct by robots is likely to be different—harder to detect, more

³ Obviously, there are many "ifs" in this stylized example as well as unanswered questions. For example, for the tacit collusion to be sustainable, the question whether the firms would at any point in time have incentive to deviate is a critical question.

⁴ Maurice E. Stucke & Ariel Ezrachi, *How Pricing Bots Could Form Cartels and Make Things More Expensive*, HARV. BUS. REV. (Oct. 27, 2016), <http://governance40.com/wp-content/uploads/2018/11/How-Pricing-Bots-Could-Form-Cartels-and-Make-Things-More-Expensive.pdf>.

⁵ Michal Gal, *Algorithmic-Facilitated Coordination: Market And Legal Solutions*, CPI ANTITRUST CHRON., May 2017, at 27.

effective, more stable and persistent.”⁶ The background note by the OECD Secretariat also states that “once it has been asserted that market conditions are prone to collusion, it is likely that algorithms learning faster than humans are also able through high-speed trial-and-error to eventually reach a cooperative equilibrium.”⁷ These concerns naturally make one wonder what we should do about the possibility of algorithms reaching a collusive outcome even without companies intending that result. Under this premise, many authors then went on to examine the legal challenges and potential solutions.⁸

At the same time, some have emphasized that autonomous algorithmic collusion in real markets is at most a theoretical possibility at the moment given the lack of empirical evidence. For example, Nicolas Petit argued that “AAI [Antitrust and Artificial Intelligence] literature is the closest ever our field came to science-fiction.”⁹ Salil K. Mehra stated that, regarding algorithms, the “possibility of enhanced tacit collusion . . . remains theoretical.”¹⁰ Gautier et al. went as far as to argue that “the hype surrounding the capability of algorithms and the potential harm that they can cause to societal welfare is currently unjustified.”¹¹

Turning to the views of antitrust enforcers, one senior U.S. Department of Justice (DOJ) Antitrust Division official stated in 2018 that “[C]oncerns about price fixing

⁶ Dylan I. Ballard & Amar S. Naik, *Algorithms, Artificial Intelligence, and Joint Conduct*, CPI ANTITRUST CHRON., May 2017, at 29.

⁷ OECD Directorate for Financial and Enterprise Affairs, Competition Comm., *Algorithms and Collusion* 76, No. DAF/COMP(2017)4 (June 2017), [https://one.oecd.org/document/DAF/COMP\(2017\)4/en/pdf](https://one.oecd.org/document/DAF/COMP(2017)4/en/pdf).

⁸ For example, Michal Gal discusses challenges for enforcers and potential countermeasures “when the algorithm employs machine learning based on neural networks, that is, it teaches itself the best way to behave in the market even if the coder did not model such conduct.” Gal, *supra* note 5, at 28.

⁹ Nicolas Petit, *Antitrust and Artificial Intelligence: A Research Agenda*, 8 J. EUR. COMPETITION L. & PRACT. 361, 361–362 (2017).

¹⁰ Salil K. Mehra, *Robo-Seller Prosecutions and Antitrust’s Error-Cost Framework*, CPI ANTITRUST CHRON., May 2017, at 37.

¹¹ Axel Gautier, Ashwin Ittoo & Pieter Van Cleynenbreugel, *AI Algorithms, Price Discrimination and Collusion: A Technical, Economic and Legal Perspective*, EUR. J. L. ECON., July 14, 2020, at 26.

through algorithms stem from a lack of understanding of the technology, and that tacit collusion through such mechanisms is not illegal without an agreement among participants.”¹² The Competition Bureau of Canada, while recognizing the constantly evolving technology and business practices, pointed out the lack of evidence of such autonomous algorithmic collusion.¹³ Even if algorithmic collusion is possible, the French and German antitrust authorities concluded in their recent Joint Report that “the actual impact of the use of algorithms on the stability of collusion in markets is *a priori* uncertain and depends on the respective market characteristics.”¹⁴

In the context of this ongoing debate, the evaluation of the plausibility of tacit algorithmic collusion becomes an important exercise. Insights about how algorithms may or may not come to collude are invaluable in focusing attention on the key legal and economic questions, policy dilemmas, and practical real-world evidence. As we will see, the state-of-the-art research has a lot of insights to offer and a good understanding of this literature is a crucial first step to better understanding the antitrust risks of algorithmic pricing and devising better antitrust policies to mitigate those risks. This is the focus of the second part of this chapter in which I survey and draw lessons from the literature on

¹² Pallavi Guniganti, *US DOJ Deputy: Algorithmic Cartel Requires Agreement*, GLOB. COMPETITION REV. (Feb. 5, 2018), <https://globalcompetitionreview.com/us-doj-deputy-algorithmic-cartel-requires-agreement>; see also U.S. Dep’t of Justice & Fed. Trade Comm’n, *Algorithms and Collusion—Note by the United States* 6 (Bkgd. Note for OECD Competition Cmte., May 26, 2017), [https://one.oecd.org/document/DAF/COMP/WD\(2017\)41/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2017)41/en/pdf):

Absent concerted action, independent adoption of the same or similar pricing algorithms is unlikely to lead to antitrust liability even if it makes interdependent pricing more likely. For example, if multiple competing firms unknowingly purchase the same software to set prices, and that software uses identical algorithms, this may effectively align the pricing strategies of all the market participants, even though they have reached no agreement.

¹³ See COMPETITION BUREAU CANADA, *BIG DATA AND INNOVATION: KEY THEMES FOR COMPETITION POLICY IN CANADA* 10 (2017), [http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/vwapj/CB-Report-BigData-Eng.pdf/\\$file/CB-Report-BigData-Eng.pdf](http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/vwapj/CB-Report-BigData-Eng.pdf/$file/CB-Report-BigData-Eng.pdf).

¹⁴ BUNDESKARTELLAMT & AUTORITE DE LA CONCURRENCE, *ALGORITHMS AND COMPETITION* ii, (Nov. 2019), https://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Berichte/Algorithms_and_Competition_Working-Paper.pdf?__blob=publicationFile&v=5.

AI and the economics of algorithmic collusion.¹⁵ Most notably, there is growing experimental evidence in both the AI and the economics literature showing that algorithms *can* be developed to cooperate and even elicit cooperation from competitors. At the same time, as most of these studies acknowledge, there are many technical challenges. As I elaborate below, these challenges imply that one should be able to uncover *attempts* to develop collusive algorithms *ex post*, even without technical expertise on the part of the investigators. Of course, existence of technical challenges does not mean that we should simply dismiss the risk of algorithmic collusion. I explain why we should remain vigilant in light of recent studies and research agenda proposed in the AI field. In terms of antitrust policy implications, I argue that at a minimum, designing and deploying autonomous collusive algorithms should be prohibited even if humans take their hands off the wheel after deploying such algorithms and it is an algorithm that ultimately colludes with others.

A more challenging situation is one where an algorithm that is *not* designed to collude, but rather simply through profit-maximizing learns to collude with competitors. I discuss some recent experimental evidence showing this type of learning to collude is indeed possible. The good news is that these early studies also demonstrate that it is possible to check for collusive conduct, suggesting that we may have the tool to uncover such learned collusion and the black-box nature of an algorithm itself does not necessarily leaves us completely in the dark.

Next, I explore the emerging area of algorithmic compliance. Most of the policy debate on algorithmic collusion so far has focused on the question of how algorithms may harm competition. I argue in this chapter that AI also holds a great deal of promise in enhancing antitrust compliance and helping us combat collusion, human or algorithmic.

¹⁵ While we can broadly group many research studies under the umbrella of AI, the relevant literature is cross-disciplinary and involves game theory, experimental science, machine learning, and operational research.

Specifically, I discuss some existing proposals, draw additional lessons from the recent AI literature, and present potential technical frameworks, inspired by the current machine learning literature, for compliant algorithmic design.

This chapter is not the first to survey and draw lessons from the relevant literature. Earlier discussions can be found in Schwalbe (2018), Deng (2018), Van Uytsel (2018), and more recently Gautier et al (2020), among others.¹⁶ In addition to covering more recent academic research in AI and economics, much of which appeared after 2019, this chapter also offers a broader coverage by bringing two closely related topics together: algorithmic collusion and algorithmic compliance.

While I mainly focus on the evidence and the lessons from academic literature and do not discuss legal approaches such as *per se* illegality and evidentiary standards, interested readers can find much insightful discussion in Harrington (2019), Gal (2019), and Ezrachi and Stucke (2020), among others.¹⁷ Another important topic that falls outside the scope of this chapter is the important interaction between algorithmic price discrimination and algorithmic collusion, especially the observation that algorithmic

¹⁶ For a sample of the earlier literature, see, for example, Ulrich Schwalbe, *Algorithms, Machine Learning, and Collusion*, 14 J. COMPETITION L. & ECON. 568 (2018); Ai Deng, *What Do We Know About Algorithmic Tacit Collusion*, 33 ANTITRUST 88 (2018); Steven Van Uytsel, *Artificial Intelligence and Collusion: A Literature Overview*, in ROBOTICS, AI AND THE FUTURE OF LAW, (M. Corrales et al., 2018); Gautier et al., *supra* note 11.

¹⁷ Some scholars have highlighted the limited reach of existing antitrust law. Harrington, for example, writes:

Jurisprudence regarding Section 1 of the Sherman Act does not prohibit collusion . . . Effectively, what is illegal is communication among firms intended to achieve an agreement where an agreement is mutual understanding between firms to limit competition. Though the courts are clear in defining liability as an agreement, they are equally clear that there must be some overt act of communication to create or sustain that mutual understanding. . . . According to that jurisprudence, I claim that firms that collude through the use of AAs are *not* guilty of a Sherman Act Section 1 violation.

[emphasis added]. Joseph E. Harrington, Jr., *Developing Competition Law for Collusion by Autonomous Artificial Agents*, 14 J. COMPETITION L. & ECON. 331, 346 (2019). For other examples, see Michal S. Gal, *Algorithms as Illegal Agreements*, 34 BERKELEY TECH. L. J. 68 (2019); Maurice E. Stucke & Ariel Ezrachi, *Sustainable and Unchallenged Algorithmic Tacit Collusion*, 17 NW. J. TECH. & INTELL. PROP. 217 (2020).

price discrimination *could* hinder collusion. On this topic, interested readers are referred to the 2018 CMA report on pricing algorithms.¹⁸ Finally, the same CMA report and the “2019 Joint Report on Algorithms and Competition” by the Bundeskartellamt and Autorité de la concurrence also review the relevant literature and lay out the latest thinking of these antitrust agencies.

I. A BRIEF INTRODUCTION TO AI AND MACHINE LEARNING¹⁹

The antitrust community is largely playing catch-up on the technical aspects of AI and machine learning (ML). As the former Acting Chair of the Federal Trade Commission Maureen K. Ohlhausen put it, “[t]he inner workings of these tools are poorly understood by virtually everyone outside the narrow circle of technical experts that directly work in the field.”²⁰

While antitrust practitioners, scholars, and policy makers do not need to know all the nuts and bolts of these technologies, a basic understanding is necessary to assess the

¹⁸ U.K. Competition & Mkts. Auth., *Pricing Algorithms: Economic Working Paper on the Use of Algorithms to Facilitate Collusion and Personalized Pricing* 44 (Working Paper No. CMA94, 2018), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/746353/Algorithms_econ_report.pdf [hereinafter “CMA Report”]:

[W]e expect that there are likely to be relatively few retail markets in which there could be both explicit coordination and personalised pricing. Regardless of whether firms are using pricing algorithms, for both collusion and personalised pricing to coexist, all the ‘traditional’ conditions for both perfect price discrimination and collusion should be satisfied, and this is quite unlikely. In addition, we suspect that, particularly in retail markets, there may be a tension between a) the transparency and level of information needed to explicitly coordinate over many personalised prices, and b) the opacity needed to evade detection by competition authorities and to prevent customer resistance, particularly to personalised prices. There would need to be a very large asymmetry between cartelists and customers/regulators in technical ability and access to information about prices and transactions.

¹⁹ This section draws heavily from Ai Deng, *An Antitrust Lawyer’s Guide to Machine Learning*, 33 ANTITRUST 82 (2018).

²⁰ Maureen K. Ohlhausen, Acting Chairman, Fed. Trade Comm’n, *Should We Fear the Things That Go Beep in the Night? Some Initial Thoughts on the Intersection of Antitrust Law and Algorithmic Pricing* (May 23, 2017), https://www.ftc.gov/system/files/documents/public_statements/1220893/ohlhausen_-_concurrences_5-23-17.pdf.

implications of the AI/ML research on antitrust issues, especially algorithmic collusion. Through a series of examples, I introduce fundamental concepts in ML. Along the way, I also discuss a wide variety of ML applications in the law and economics fields to build the readers' understanding of AI/ML. Since the discussion here is aimed at readers without a technical background, I prioritize intuitions and pedagogy over analytical or theoretical rigor.

A. Machine Learning vs. Artificial Intelligence

The distinction between ML and AI is not always made in the antitrust literature. This is largely harmless because the discussion about the antitrust concerns is rarely about the definitions or other technical subtleties. It is still helpful that we understand that ML and AI are different concepts. At a basic level, the difference can be understood as the difference between *learning* and *intelligence*. Obviously, learning is not intelligence but rather a way to achieve intelligence. Computer scientist Tom Mitchell gave a widely quoted and more formal definition of a machine learning algorithm: "a computer program is said to learn from experience E with respect to some class of tasks T and performance measure P if its performance at tasks in T , as measured by P , improves with experience E ."²¹ To put it simply, machine learning algorithms are computer programs that learn from and improve with experiences. The definition of artificial intelligence, on the other hand, focuses on the question of what intelligence is. In the book *Artificial Intelligence: A Modern Approach*, the authors listed eight definitions of AI in four categories along two dimensions: (1) thinking and acting humanly, and (2) thinking and acting rationally.²² Although there are other approaches to obtaining AI, machine learning has become the dominant one in recent years.²³

²¹ Mitchell, T., MACHINE LEARNING 2 (1997).

²² Stuart Russell & Peter Norvig, ARTIFICIAL INTELLIGENCE: A MODERN APPROACH 2 (3d ed. 2010).

²³ There is at least one other view about the difference between ML and AI. As Matt Taddy stated in an

B. How Do Machines Learn?

1. Supervised Learning: Learning Through Examples

Econometrics and statistics are now routinely used in antitrust litigation and merger review. As a result, many antitrust practitioners have a basic understanding of techniques. Linear regression, one of the most common analytical tools used in antitrust, turns out to be a machine learning algorithm. While economists and even statisticians seldom use the term “machine learning,” computer scientists do. This is rapidly changing as ML is quickly gaining popularity outside of computer science.

The concept of a regression is simple and intuitive. We do “mental” regressions all the time. For instance, we all know roughly the average temperature of the summer where we have lived for 10 years. When we compute that average, what we do is, in essence, a regression, albeit a very simple one. The key ingredient for such a calculation is a collection of what we could call *examples* i.e., data on temperature in the summer. Effectively, these examples guide or *supervise* how we learn. Perhaps not surprisingly, the related ML techniques (regressions included)—i.e., those that rely on the availability of examples—are called *supervised learning* methods. And the examples are also known as *training data* or a *training sample* in the sense that they allow us to *train* the learning process. You can also see why it makes sense to call them ML methods. They at least mimic in concept how a human learns about our world.²⁴

interview:

The terms “machine learning” and “artificial intelligence” are often used interchangeably. But there’s a distinction, and it’s an important one. Machine learning is largely restricted to predicting a future that looks like the past. In contrast, an artificial intelligence system is able to solve complex problems that have previously been reserved for humans.

Arun Krishnan, *Business Data Science Is a Lot More Than Just Making Predictions*, AMAZON SCI. (Dec. 5, 2019), <https://www.amazon.science/business-data-science-is-a-lot-more-than-just-making-predictions-matt-taddy>.

²⁴ In fact, the analogy to human learning does not stop there. ML also makes heavy use of “test” data to “validate” what it learns about the problem.

Example: To antitrust attorneys and economists, the most familiar application of regression is probably a model of prices of the product in question. The model relates the prices to the observed drivers of prices (supply and demand factors). The quantity of interest is not limited to prices, however. In a merger analysis, for example, economists may also build regression models for market shares. In fact, regression analysis is rather common in today's antitrust cases. Not surprisingly, there are many references on regressions written for the antitrust audience.²⁵

Example: As more and more electronic documents are preserved and become available, identifying relevant documents in the legal discovery process has become a costly endeavor. Against this backdrop, a set of supervised learning techniques, generally called *predictive coding*, has been employed to facilitate this process. A prototypical predictive coding approach works as follows. First, a subset of potentially relevant documents is selected. Then human experts review a random subsample of these selected documents and mark the relevant and responsive documents (together with associated metadata such as the author and date). These marked documents provide the *examples* necessary for the application of supervised learning methods.²⁶ Since the goal is to label a document as either relevant or not, the problem that predictive coding tries to solve is also known as *classification*.

Example: *Artificial neural network* (ANN) has become a buzzword in the recent AI/ML literature, as well as in the antitrust debate, as has the closely related concept of *deep learning* or *deep neural network*. ANN has seen a wide variety of successful

²⁵ See, e.g., AM. BAR ASS'N, *ECONOMETRICS: LEGAL, PRACTICAL, AND TECHNICAL ISSUES* (2d ed. 2014); see also Ai Deng, *Book Review: Econometrics—Legal, Practical, and Technical Issues*, 61 ANTITRUST BULL. 461, 461–66 (2016).

²⁶ For more details, see, for example, *Predictive Coding* (presentation for panel discussion at ABA Section of Litigation 2012 Section Annual Conference, (Apr. 2012), https://www.americanbar.org/content/dam/aba/administrative/litigation/materials/sac_2012/14-1_predictive_coding_written_materials.authcheckdam.pdf).

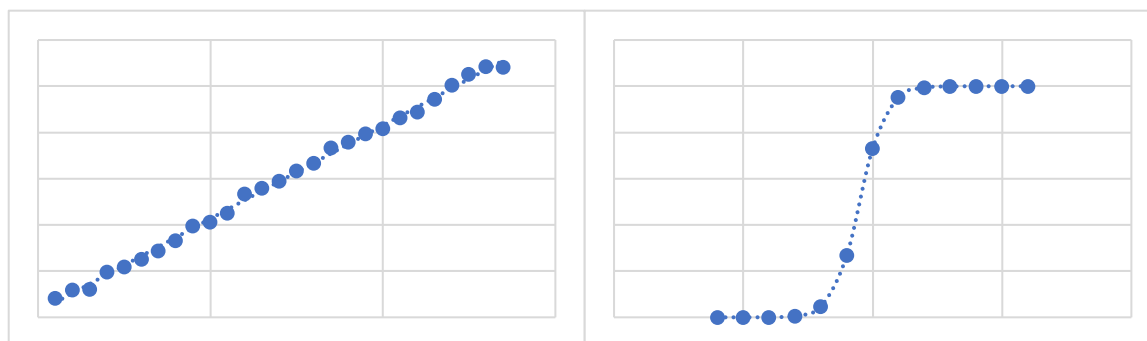
applications ranging from image recognition to machine translation. But as with any technical jargon, these terms are extremely vague to anyone outside the technical field. It turns out that the basic ANN is just a regression (with technical bells and whistles) and hence another supervised learning method. Figure 18 shows two possible relationships between two quantities. On the graph on the left, the two quantities appear to have a *linear* relationship in that they appear to move along a *straight* line, although not perfectly. The graph on the right shows a *nonlinear* relationship. This is why a regression model that reflects a linear relationship is called a linear regression and a regression model that reflects a nonlinear relationship is called a nonlinear regression.²⁷ ANN is a type of nonlinear regression, flexible in that it can capture different and complex shapes of nonlinearity. However, this flexibility comes with a cost. Typically, for ANNs to work well, a large number of examples is required. It has been argued that, if ANNs are used to design business decision algorithms, the complexity of this technology could significantly complicate antitrust enforcement efforts.²⁸ As I have argued elsewhere, whether complex techniques such as ANN are necessarily superior in designing potentially collusive algorithms is unclear.²⁹

²⁷ For the readers familiar with regression analysis, the second chart is based on a simple logistic function. Of course, to be technically correct, nonlinearity pertains to model parameters, not the quantities themselves.

²⁸ “Therefore, by relying on *deep learning*, firms may be actually able to reach a collusive outcome without being aware of it, raising complex questions on whether any liability could ever be imposed on them should any infringement of the law be put in place by the deep learning algorithms.” OECD, *supra* note 7, at 79 (emphasis added).

²⁹ See Ai Deng, When Machines Learn to Collude: Lessons from a Recent AI Research (Sept. 2017) (unpublished manuscript), <https://ssrn.com/abstract=3029662>; see also Ai Deng, *Four Reasons Why We Won't See Colluding Robots Any Time Soon*, LAW360 (Oct. 3, 2017), <https://www.law360.com/articles/970553/4-reasons-we-may-not-see-colluding-robots-anytime-soon>.

Figure 18: Illustration of a linear and nonlinear relationship



Example: Algorithmic price discrimination has also been a focus of recent discussion in the antitrust literature. The idea is that as companies collect more and more personal data on their customers, they may be increasingly capable of price discrimination among them. In economic terms, companies may be able to use personal data to gauge individual willingness to pay. The availability of such data, as well as customers’ past purchasing/spending behavior (again, examples), could be used to train supervised learning methods to better predict consumer behavior and hence enable companies to offer personalized product options and pricing.³⁰

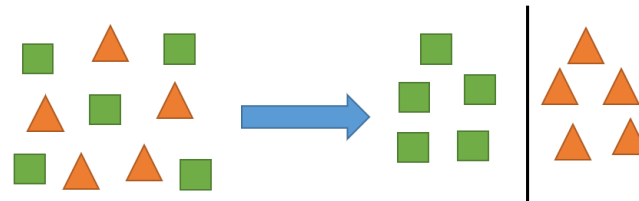
2. Unsupervised Learning: Learning Through Differences

We as humans engage in other cognitive tasks. Consider the following example. Suppose there is a mix of triangles and squares. The task is to put different shapes into separate groups. While this task is incredibly trivial for us, let’s think about exactly how our brains work in such a situation. One plausible hypothesis is that we have “a mental ruler” that measures pairwise differences of—or, using a slightly more technical term, *distances* between—the shapes. We then put the objects in one group when their

³⁰ In a recent paper, Terrell McSweeney and Brian O’Dea discussed the implications of algorithmic price discrimination on antitrust market definition. See Terrell McSweeney & Brian O’Dea, *The Implications of Algorithmic Pricing for Coordinated Effects Analysis and Price Discrimination Markets in Antitrust Enforcement*, 32 ANTITRUST 75, 75–81 (2017). Gautier et al reviewed the latest AI and economic literature on algorithmic price discrimination and discussed policy implications. See Gautier et al, *supra* note 11.

differences are “small” and in a different group when the differences are “large.” Figure 19 illustrates this. Note that the task does not require us to know what a triangle or a square look like. In other words, we do not need a set of shapes with labels (triangle vs. square) in order to separate them. The absence of such labelled training data is the hallmark of what is known as *unsupervised learning*. And the grouping exercise is known as *clustering* in ML jargon. In these types of learning, the concept of distance is a critical ingredient and underlies even the most sophisticated unsupervised learning techniques.

Figure 19: Classification as unsupervised learning



Example: In document review, another objective is to group documents based on certain criteria even before we know whether a document is relevant. For example, one may want to group documents by author or date, or, in more complex cases, by content through the use of other unsupervised ML algorithms.

Example: *Novelty* or *anomaly detection*, which identifies the few instances that are different from the majority, is conceptually similar to clustering. In many industries (credit card, telecommunications, etc.), anomaly detection is hugely important in detecting fraud. One simple but powerful idea behind anomaly detection is to start with characterizing the “norm.” For example, once we use a credit card long enough, the card company is able to build a personal profile for our spending behavior. If we have never made a purchase in a foreign country when a transaction just took place in that location, that transaction may be flagged as an anomaly and the card company could issue an alert. In the antitrust domain, similar techniques can be used to detect and monitor cartel

formation. I elaborated on how ML/AI could be leveraged to do so in another article.³¹ As an example, Joseph Harrington has argued that a *sharp increase* in the price-cost margin could signal the onset of a cartel.³² Such a price-cost margin “screen,” as it is commonly known in the cartel detection literature, fits nicely in the unsupervised learning framework. Thus, despite the concerns mentioned earlier that ML/AI could facilitate collusion, the very same set of tools might be used to deter and prevent cartel formation. This is a point I will elaborate below in the context of algorithmic compliance.

3. Reinforcement Learning: Learning Through “Trial and Error”

Another type of machine learning that is particularly relevant to the discussion of algorithmic collusion is known as reinforcement learning (RL). Consider the case of a child learning about different animals. When a child picks up a toy elephant but calls it a giraffe, we would correct her. When she gets it right, we congratulate and reward her. And we repeat that process until she gets it. This process is probably the most common way of reinforcing proper behavior.

Andrew G. Barto and Thomas G. Dietterich give another example. Imagine that you are talking on the phone where the signal is not very good, but moving around to find the right spot.³³ Every time you move, you ask your partner whether he or she can hear you better. You do this until you either find a good spot or give up. Reinforcement learning mimics this type of “trial and error” process. Notice here that the information we receive does not directly tell us where we should go to obtain good reception. In other words, we do not have a collection of examples of location or reception as in a supervised learning case, at least not in a new environment. We make a move and then assess our

³¹ See Ai Deng, *Cartel Detection and Monitoring: A Look Forward*, 5 J. ANTITRUST ENF'T 488 (2017).

³² Joseph E Harrington, Jr., *Detecting Cartels*, in HANDBOOK OF ANTITRUST ECONOMICS 213 (Paolo Buccirossi ed., 2008).

³³ A.G. Barto & T.G. Dietterich, *Reinforcement Learning and Its Relationship to Supervised Learning*, in HANDBOOK OF LEARNING AND APPROXIMATE DYNAMIC PROGRAMMING 47–64 (J. Si et al., eds., 2004).

current situation. As Barto and Dietterich put it, “[w]e have to move around—explore—in order to decide where we should go.” This is a main difference between RL and supervised learning.

Some of the most prominent success stories of RL come from the field of game play. *AlphaGo*, an RL algorithm, beat world champions at the ancient game of Go in 2016 and 2017. AlphaGo was, however, recently defeated by the next generation of the algorithm *AlphaGoZero*, losing all 100 games played.³⁴ In fact, *AlphaGoZero* uses RL to start from scratch (hence the zero in the name of the algorithm) and trains itself by playing against itself. In the emerging antitrust and AI literature, Ittoo and Petit (2017) argue that “RL is a suitable framework to study the interaction of profit maximizing algorithmic agents because it shares several similarities with the situation of oligopolists in markets.”³⁵ Many economic studies on algorithmic collusion, that I will discuss below, use RL.

Particularly relevant to algorithmic collusion is the *multi-agent learning problem*. This is where multiple parties are involved in the learning process and their behavior directly affects each other. For example, in a zero-sum game, if one player wins, another player must lose. In a coordination game such as basketball, the incentives of the players on the same team are generally aligned. In contrast, in a positive-sum game such as *prisoner’s dilemma*, a stylized model I will discuss in detail below, even though the parties understand that they could achieve a higher overall and individual payoff if they coordinate their behavior, there is a temptation to defect. The last situation resembles the problem cartel members may face and is the most familiar to antitrust attorneys and

³⁴ See Larry Greenemeier, *AI Versus AI: Self-Taught AlphaGo Zero Vanquished Its Predecessor*, SCI. AM., (Oct. 18, 2017), <https://www.scientificamerican.com/article/ai-versus-ai-self-taught-alphago-zero-vanquishes-its-predecessor/>.

³⁵ Ashwin Ittoo & Nicolas Petit, *Algorithmic Pricing Agents and Tacit Collusion: A Technological Perspective* (Oct. 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3046405.

economists. Research on multi-agent learning in the prisoner's dilemma type of situation is particularly pertinent to our understanding of algorithmic collusion. We will return to this topic in the next section.

4. Explainable AI

In the recent years, there has been a rapidly growing interest in explainable AI in both academia and the private sector. As the name suggests, explainable AI aims to make algorithmic decision-making understandable to humans.³⁶ Notably, the Defense Advanced Research Projects Agency (DARPA) sponsors a program called XAI (Explainable Artificial Intelligence).³⁷ The organization FATML (Fairness, Accountability, and Transparency in Machine Learning) also aims to promote the explainable AI effort. Recent privacy regulations such as GDPR have also put a spotlight on explainability. While we still have a long way to go in the explainable AI research, the industry and academic interest is a promising starting point.³⁸

Some of the commercial interest in explainable AI comes from the commercial lending industry because of the regulation and the need to explain lending decisions to consumers, especially when the decision is made by machine learning models. It should be no surprise that the same need for explainability goes well beyond the lending industry. For example, being able to explain algorithmic decisions or recommendations is equally important in the medical and health care domains. Leveraging explainable AI can and should also be an important part of the research program for antitrust compliance by design, a concept I will elaborate below.

³⁶ See also Finale Doshi-Velez & Been Kim, *Towards A Rigorous Science of Interpretable Machine Learning 2* (Mar. 2, 2017) (unpublished manuscript), <https://arxiv.org/abs/1702.08608>.

³⁷ *Explainable Artificial Intelligence (XAI)*, DARPA (Aug. 6, 2016), <https://www.darpa.mil/program/explainable-artificial-intelligence>.

³⁸ See Will Knight, *The Dark Secret at the Heart of AI*, MIT TECH. REV. (Apr. 11, 2017), <https://www.technologyreview.com/s/604087/the-dark-secret-at-the-heart-of-ai/>.

The AI research community has proposed several ideas to help achieve interpretability and explainability of AI. Two common approaches, rooted in the technical aspects of AI, are (1) the use of inherently interpretable algorithms (known as “white-box algorithms”) and (2) the use of clever backward engineering (also known as post hoc methods).³⁹ Naturally, there is not a single definition of explainability, and different domains may find different definitions acceptable. I will argue below that, in the context of algorithmic compliance, an algorithm’s ability to explain and answer *why*, *why not*, and *what-if* questions is particularly helpful.

II. WHAT DO WE KNOW ABOUT ALGORITHMIC COLLUSION?⁴⁰

A. Cartels’ Incentive Problem

To better understand the problems a cartel must solve to sustain an agreement to restrict competition (e.g., raise prices or reduce output), it is instructive to look at the well-known prisoner’s dilemma (PD). Imagine two accomplices of a crime are being interrogated in separate rooms and they cannot communicate. They must decide whether to confess to the crime and hence expose the accomplice. Table 1 shows the consequences of their decisions.

³⁹ See, e.g., PATRICK HALL & NAVDEEP GILL, H2O.AI, AN INTRODUCTION TO MACHINE LEARNING INTERPRETABILITY 3–4 (2019), <https://www.h2o.ai/wp-content/uploads/2019/08/An-Introduction-to-Machine-Learning-Interpretability-Second-Edition.pdf>; see also Joel Vaughan et al., Explainable Neural Networks based on Additive Index Models (June 5, 2018) (unpublished manuscript), <https://arxiv.org/abs/1806.01933>. Some scholars distinguish interpretability and explainability. For example, according to Cynthia Rudin, when we use a black box algorithm and explain it afterwards (post hoc), we are doing explainable machine learning while when we use a “white box” model to begin with, we are doing interpretable machine learning. Her view is that post hoc explainability is largely unhelpful. See Cynthia Rudin, *Stop Explaining Black Box Machine Learning Models for High Stakes Decisions and Use Interpretable Models Instead*, 1 NATURE MACH. INTELL. 206, 206–215 (2019).

⁴⁰ This section draws heavily from Ai Deng, *What Do We Know About Algorithmic Tacit Collusion?*, 33 ANTITRUST, Fall 2018, at 88.

Table 2: A Prisoner’s Dilemma: Understanding the incentive problem of a cartel

		Prisoner B	
		Not confess (Cooperate)	Confess
Prisoner A	Not confess (Cooperate)	$(-1, -1)$	$(-3, 0)$
	Confess	$(0, -3)$	$(-2, -2)$

The two rows and two columns in Table 2 represent the two prisoners and their two possible choices. For example, the cell $(-1, -1)$ tells us that if neither confesses, each would get one year in prison. Similarly, if Prisoner A does not confess but Prisoner B does, then Prisoner A gets three years in jail and Prisoner B goes free; this corresponds to the upper right cell $(-3, 0)$. Since the situation is symmetric, the lower left cell is $(0, -3)$ and the penalty is reversed. Finally, if both confess, then each would get two years (as shown in the lower right cell).

Given these numbers, it is clear from a joint-interest perspective that the best outcome is $(-1, -1)$, a total of two years. And the prisoners can achieve that by “cooperating” (i.e., not confessing). Unfortunately for the prisoners, since confessing is the rational move regardless of what the other does, both will end up confessing, leading to two years for each, an outcome *strictly* worse than the “cooperative” outcome. It is not surprising that cartel members face a similar type of incentive problem. They are both better off if they cooperate (e.g., raise prices or reduce output). But at the same time, if I know that my competitors are raising prices, I have an incentive to lower mine to steal the business and increase my revenue. Since a formal cartel contract is not enforceable in most if not all jurisdictions, they have to find other and often imperfect ways to implement their agreement.

A critical point is that solving this incentive problem is key to the success of a cartel: the use of an algorithm does not magically remove this fundamental incentive

problem that a cartel faces. And unlike the “one-shot” situation in the standard prisoner’s dilemma, competitors interact with each other repeatedly in the market. It turns out that in repeated interactions, there is “more hope” that firms can learn to cooperate. In fact, repeated interaction is an important reason that tacit collusion emerges in the stylized example discussed earlier in the chapter.

B. The AI Literature

Is there any evidence that computer algorithms can (tacitly) collude? We have not seen tacitly colluding robots in real markets. The infamous Topkins and Trod cases involve the use of pricing algorithms that implement human agreements.⁴¹ However, they are not the focus of this chapter.

But there is growing theoretical and experimental evidence showing that certain algorithms could lead to tacit coordination. In the AI field of multi-agent learning, there is an active literature on designing algorithms that can cooperate and even elicit cooperation in social dilemmas such as the PD. The AI researchers’ goal is, of course, *not* to design evil collusive robots. Rather, they are interested in designing AIs that have the

⁴¹ Press Release, U.S. Dep’t of Justice, *Former E-Commerce Executive Charged with Price Fixing in the Antitrust Division’s First Online Marketing Prosecution* (Apr. 6, 2015), <https://www.justice.gov/opa/pr/former-e-commerce-executive-charged-price-fixing-antitrust-divisions-first-online-marketplace>:

According to the charge, Topkins and his co-conspirators agreed to fix the prices of certain posters sold in the United States through Amazon Marketplace. To implement their agreements, the defendant and his co-conspirators adopted specific pricing algorithms for the sale of certain posters with the goal of coordinating changes to their respective prices and wrote computer code that instructed algorithm-based software to set prices in conformity with this agreement.

Trod is a similar case. The UK CMA found that Trod Ltd and GB eye Limited conspired to not undercut each other’s prices. The agreement was also implemented by automated repricing tool. *See Online Sales of Posters and Frames*, COMPETITION & MKTS. AUTH. CASES (Dec. 4, 2015), <https://www.gov.uk/cma-cases/online-sales-of-discretionary-consumer-products>. Note also the recent OFGEM UK’s decision to fine energy suppliers for a market allocation agreement facilitated by software programs. U.K. Gas & Elec. Mkts Auth., *Infringement by Economy Energy, E (Gas and Electricity) and Dyball Associates of Chapter I of the Competition Act 1998 with Respect to an Anti-Competitive Agreement* (July 26, 2019), <https://www.ofgem.gov.uk/publications-and-updates/decision-impose-financial-penalties-economy-energy-e-gas-and-electricity-and-dyball-associates-following-investigation-infringement-chapter-i-competition-act-1998>.

ability to cooperate with each other and with humans for social good.⁴²

One algorithm that has been found to be conducive to cooperative behavior in experimental settings is the so-called tit-for-tat (TFT) algorithm.⁴³ This strategy starts with cooperation, but then each party will simply copy exactly what the opponent did in the previous period in repeated interaction. Intuitively, if two opponents start by cooperating, then the very definition of the TFT algorithm dictates their continued cooperation. But will competitors have an incentive to deviate from cooperation? The answer is that they might not, if they realize that despite the higher profit they could obtain by cheating in the current period, they will have to compete with others and hence generate lower profit in the future. While not guaranteed, if the firms care enough about future profitability, they might not find it worthwhile to deviate.

The TFT algorithm, despite its simplicity, intuitive appeal, and some experimental

⁴² See, e.g., Jacob W. Crandall et al., *Cooperating with Machines*, NATURE COMMUNICATIONS 2 (Jan. 16, 2018), <https://www.nature.com/articles/s41467-017-02597-8>:

The emergence of driverless cars, autonomous trading algorithms, and autonomous drone technologies highlight a larger trend in which artificial intelligence (AI) is enabling machines to autonomously carry out complex tasks on behalf of their human stakeholders. To effectively represent their stakeholders in many tasks, these autonomous machines must interact with other people and machines that do not fully share the same goals and preferences. While the majority of AI milestones have focused on developing human-level wherewithal to compete with people or to interact with people as teammates that share a common goal, many scenarios in which AI must interact with people and other machines are neither zero-sum nor common-interest interactions. As such, AI must also have the ability to cooperate even in the midst of conflicting interests and threats of being exploited.

See also Jakob N. Foerster et al., *Learning with Opponent-Learning Awareness* 1 (Sep. 19, 2018) (unpublished manuscript), <https://arxiv.org/abs/1709.04326>:

The human ability to maintain cooperation in a variety of complex social settings has been vital for the success of human societies. Emergent reciprocity has been observed even in strongly adversarial settings such as wars, making it a quintessential and robust feature of human life. In the future, artificial learning agents are likely to take an active part in human society, interacting both with other learning agents and humans in complex partially competitive settings. Failing to develop learning algorithms that lead to emergent reciprocity in these artificial agents would lead to disastrous outcomes.

⁴³ For a well-cited study, see ROBERT M. AXELROD, *THE EVOLUTION OF COOPERATION* (1984).

success, has a number of limitations. For example, to implement TFT, one needs to know what the competitors have done (because TFT copies the competitors' behavior) and the consequences of future interactions (because they need to assess if it pays to cooperate). In the real world, firms typically do not possess that information, except in certain special cases.⁴⁴

In recent years, there has been more research that aims to relax various assumptions and construct more robust cooperative algorithms. In a study published in 2018, a team of researchers designed an expert system (a type of AI technology) that can cooperate with opposing players in a variety of situations. Intuitively speaking, an expert system requires two components: a pool of "experts" or strategies and a mechanism to choose a particular subset of strategies given the information available to the AI system. Among the pool of experts in their algorithm are TFT-style "trigger" strategies. The researchers found that although the previous version of their expert system (codenamed S++) was better than many other algorithms at cooperating, the performance of a modified algorithm (codenamed S#) is significantly better, especially when playing against humans, because it is equipped with the capability to communicate (through costless "cheap" talk based on a set of pre-programmed messages).⁴⁵ But the engineering process is by no means easy or obvious. In addition to the capability to communicate, the

⁴⁴ Furthermore, unless the products are completely homogeneous and firms have identical costs, firms may not find copying competitors' pricing from the last period desirable. Equally important is that theoretically, it is known that TFT is not a robust strategy. There is much discussion on the weaknesses of TFT in the literature. For example, a single mistake in either party's action could lead to a "death spiral." That is, when one party defects while the opponent cooperates in just one period, the parties will end up alternating between cooperation and defection, yielding worse payoff for both than if they had cooperated.

⁴⁵ See Crandall et al., *supra* note 42. Examples of these messages include proposals to take a certain action (e.g., cooperate), threats (e.g., "do as I say, or I'll punish you") as well as either positive or negative reactions (e.g., "You betrayed me" and "Sweet. We are getting rich"). Jacob W. Crandall et al., *Cooperating with Machines* (Supplementary Table 21), NATURE COMMUNICATIONS 2 (Jan. 16, 2018), https://static-content.springer.com/esm/art%3A10.1038%2Fs41467-017-02597-8/MediaObjects/41467_2017_2597_MOESM1_ESM.pdf. For an in-depth discussion of the lessons one could draw from this study on algorithmic collusion, see Deng, *supra* note 29.

researchers also attribute the success of their algorithm to a carefully selected pool of experts and an optimization procedure that is “non-conventional.”⁴⁶ We will discuss the implications of this study, especially the algorithm’s ability to communicate and the associated technical challenges, on antitrust and compliance below.

Even more recently, two researchers developed algorithms that can cooperate with opponents in similar social dilemmas.⁴⁷ One of their algorithms was, in fact, inspired by the TFT algorithm. Specifically, the researchers tried to relax the strong information requirements of the naïve TFT algorithm. Another recent study adopted an interesting approach to design an algorithm that promotes cooperation. Its idea is to introduce an additional planning agent that can distribute rewards or punishments to the algorithmic players as a way to guide them to cooperation, analogous to an algorithmic hub and spoke scheme.⁴⁸ Another group of researchers recently proposed an algorithm that

⁴⁶ “Finally, the somewhat non-conventional expert-selection mechanism used by S# (see Eq. 1 in Methods) is central to its success. . . . Given the same full, rich set of experts, more traditional expert-selection mechanisms establish effective relationships in far fewer scenarios than S#.” Jacob W. Crandall et al., *Cooperating with Machines*, NATURE COMM’NS (Jan. 16, 2018), <https://www.nature.com/articles/s41467-017-02597-8>.

⁴⁷ See Adam Lerer & Alexander Peysakhovich, *Maintaining Cooperation in Complex Social Dilemmas Using Deep Reinforcement Learning* (Mar. 2, 2018) (unpublished manuscript), <https://arxiv.org/abs/1707.01068> [hereinafter *Maintaining Cooperation*]; see also Alexander Peysakhovich & Adam Lerer, *Consequentialist Conditional Cooperation in Social Dilemmas with Imperfect Information*, PROCS INT’L CONF. ON LEARNING REPRESENTATIONS (Mar. 2, 2018), <https://arxiv.org/abs/1710.06975> [hereinafter *Consequentialist Conditional Cooperation*].

⁴⁸ See Tobias Baumann, Thore Graepel & John Shawe-Taylor, *Adaptive Mechanism Design: Learning to Promote Cooperation* (Nov. 20, 2019) (unpublished manuscript), <https://arxiv.org/abs/1806.04067>. For a definition of a hub and spoke conspiracy, see U.S. Dep’t of Justice & Fed. Trade Comm’n, *Hub-and-Spoke Arrangements—Note by the United States 2* (Bkgd. Note for OECD Competition Cmte., Nov. 28, 2019), https://www.ftc.gov/system/files/attachments/us-submissions-oecd-2010-present-other-international-competition-fora/oecd-hub_and_spoke_arrangements_us.pdf:

In United States antitrust law, a ‘hub and spoke conspiracy’ is a term of art used to describe horizontal conspiracies that include participants who are in a vertical relationship with one or more of the competitor conspirators. The conspiracy is organized so that one level of a supply chain—a buyer or supplier—acts like the ‘hub’ of a wheel. Vertical relationships up or down the supply chain act as the ‘spokes’ and, most importantly, a horizontal agreement among the spokes acts as the “rim” of the wheel. The distinguishing feature of a hub and spoke conspiracy is the participation of the vertically aligned conspirator in the horizontal agreement.

explicitly takes into account the opponent's learning through interactions and found that their algorithm worked well in eliciting cooperative behavior.⁴⁹ Yet other researchers tried to make algorithms learn to cooperate with others by modifying the algorithm's objective. For a pricing algorithm, the most natural objective would be to maximize profits. But one study shows that by adopting an objective that "encourages an [AI] agent to imagine the consequences of sticking to the status-quo," their algorithm is able to learn to cooperate "without sharing rewards, gradients, or using a communication channel."⁵⁰ The researchers credit this capability to the fact that the "imagined stickiness ensures that an agent gets a better estimate of the cooperative or selfish policy."⁵¹ Finally, a carefully designed reinforcement learning algorithm, called "Foolproof Cooperative Learning" (FCL), was recently developed and shown to learn to play TFT, without being explicitly programmed to do so.⁵² In the researchers' words, FCL, "by construction, converges to a Tit-for-Tat behavior, cooperative against itself and retaliatory against selfish algorithms" and "FCL is an example of learning equilibrium that *forces* a cooperative behavior."⁵³ New AI research on the topic of machine-machine and machine-human cooperation continues to appear.

With growing experimental evidence that algorithms can be designed to tacitly cooperate, the next question naturally becomes whether a collusive pricing algorithm inspired by this research is available for use in the real world. The answer is that despite the promising theoretical and experimental results discussed above, we have a long way

⁴⁹ See Foerster et al, *supra* note 42, at 1.

⁵⁰ Pinkesh Badjatiya et al., Inducing Cooperative Behaviour in Sequential-Social Dilemmas Through Multi-Agent Reinforcement Learning Using Status-Quo Loss 2, 9 (Feb. 13, 2020) (unpublished manuscript), <https://arxiv.org/pdf/2001.05458.pdf>.

⁵¹ *Id.* at 2.

⁵² Alexis Jacq et al., Foolproof Cooperative Learning 1 (Sep. 5, 2019) (unpublished manuscript), <https://arxiv.org/abs/1906.09831>.

⁵³ *Id.* at 1 (emphasis added).

to go.

Several limitations are worth keeping in mind. First, almost all of these studies focus on two players (a duopoly). It is well recognized that everything else being equal, as the number of players increases, collusion, tacit or explicit, becomes more difficult. Second, the type of games (e.g., repeated prisoner's dilemma and its variants) is simplistic and the universe of possible strategies in these experimental studies are rather limited, especially when compared to the real business world.⁵⁴ Third, most of these experimental studies assume a stable market environment. For example, in most AI studies, the payoffs to the AI agents, as well as the environment in which AI agents operate, are typically fixed.⁵⁵ This is a significant limitation because demand variability and uncertainty is not just a norm in the real world, but also has been long recognized by economists to have important implications on how cartels operate. For example, with imperfect monitoring, if the market price is falling, cartel firms may have a hard time figuring out whether the falling price is due to cheating or to declining demand ("a negative demand shock"). In fact, the economic literature shows that a rational cartel would need to internalize the disruptive nature of demand uncertainty when the cartel monitoring is imperfect.⁵⁶

⁵⁴ As Harrington noted, "[A]ctual markets are far more complicated than the stark simplicity of the Prisoners' Dilemma. Actual markets have many possible prices to be selected for multiple products, and firms that are subject to changes in cost and demand." Joseph E. Harrington, Jr., *Developing Competition Law for Collusion by Autonomous Price-Setting Agents* 20 (Aug. 22, 2017) (unpublished manuscript), <https://ssrn.com/abstract=3037818>. This is an earlier manuscript of Harrington, *supra* note 17.

⁵⁵ Note that some studies assume that the AI agents are not aware of the payoffs but rather have to learn about them in the process. So, the assumption of fixed payoffs is distinct from the assumption regarding the information set of the AI agents.

⁵⁶ For example, Green and Porter show that under such conditions, one way for the cartel to sustain its agreement is to agree to revert to competition if the market price falls below a certain level (known as a "trigger price"), as a way to "punish" potential cheaters and reduce the incentive to cheat. Clearly, a price war may simply be triggered because the demand is weak (hence lower prices) but not because of cheating. More generally, economists have argued that demand volatility tends to hinder collusion. *See*, Edward J. Green & Robert H. Porter, *Noncooperative Collusion under Imperfect Price Information*, 52 *ECONOMETRICA* 87 (1984); Robert H. Porter, *A Study of Cartel Stability: The Joint Executive Committee, 1880–1886*, 14 *BELL J. ECON.* 301 (1983). In Rotemberg and Saloner's model, a positive demand shock (e.g., an economic boom) could disrupt collusion by increasing firms' incentive to deviate from their agreement because they could profit

Interestingly, as we will discuss in the next section, recent economic studies have shown that reduced demand uncertainty, achieved by the use of algorithms, for example, may actually make a cartel more difficult to sustain.

Another important observation from the AI research is that the algorithms being designed are not necessarily what economists call “equilibrium” strategies. Equilibrium strategies are “stable” in the sense that, if you know that you and your competitors adopt this strategy, none of you would have the incentive to switch to another strategy.⁵⁷ That is not the case for some of the algorithms recently developed by AI researchers.⁵⁸ In a recent study mentioned earlier, despite the promising experimental findings, the researchers acknowledge that unless an algorithm is an equilibrium learning strategy, it can be exploited by others, meaning that players may have an incentive to move away from their proposed algorithm.⁵⁹ This observation has a powerful implication: unless firms are fully committed to a “collusive” algorithm that is not an equilibrium strategy, there will be a temptation for the (rational) firms to change their strategy and hence potentially disrupt the status quo or a potentially tacitly collusive outcome.

Also relevant is whether the AI agents are symmetric; in other words, whether the opposing players have identical payoffs if they adopt the same strategies. In fact, almost

more from the high demand by doing so (say, by lowering prices). Julio J. Rotemberg & Garth Saloner, *A Supergame-Theoretic Model of Business Cycles and Price Wars During Booms*, 76 AM. ECON. REV. 390 (1986); G. Ellison, *Theories of Cartel Stability and the Joint Executive Committee*, 25 RAND J. ECON. 37 (1994).

⁵⁷ This situation is known as the “Nash equilibrium” in game theory. There are also many “refinements” to Nash equilibria, some of which are designed to be even more robust and stable.

⁵⁸ Peysakhovich and Lerer explicitly make this distinction:

[T]he question of designing a good agent for social dilemmas can sometimes be quite different from questions about computing equilibrium strategies. For example, in the repeated PD, tit-for-tat is held up as a good strategy for an agent to commit to (Axelrod, 2006). However, both players using tit-for-tat is not an equilibrium (since the best response to tit-for-tat is always cooperate).

Lerer & Peysakhovich, *Consequentialist Conditional Cooperation*, *supra* note 47, at 2. In fact, it is clear that one of their designs, the so-called amTFT, is not an equilibrium strategy based on their Figure 5.

⁵⁹ See Foerster et al., *supra* note 42, at 8.

all the AI studies that use the repeated prisoner's dilemma or its variants focus on the symmetric case. As I will discuss in the next section, the existence of various types of asymmetry (cost, market share, etc.) tends to make reaching a cartel agreement harder and the use of algorithms is unlikely to change that. Similar to the case of time-varying demand, economists have shown that a rational cartel may also need to explicitly take asymmetry into account and adapt its pricing arrangement accordingly.⁶⁰ So there are good reasons to suspect that the AI algorithms designed under symmetry do not necessarily fare well in more realistic, asymmetric situations.

Given all these real-world complications, it is not surprising that empirically, as of now, there is no known case of tacitly colluding robots in the real world. But at the same time, the AI literature offers several insights that inform us how best to approach the antitrust risk of algorithmic collusion. The most significant, and perhaps also the most obvious is that designing algorithms with proven capability to tacitly collude in realistic situations is a challenging technical problem. The large-scale study (Crandall et al, 2018) started with 25 algorithms and found that, in a variety of contexts, not all of them learned to cooperate effectively, either with themselves or with other algorithmic players. In fact, the researchers identified the more successful algorithms only after extensive experiments and careful “non-conventional” design choices. They highlighted a number of technical challenges. For example, they pointed out that a good algorithm must be flexible in that it needs to learn to cooperate with others without necessarily having prior knowledge of their behaviors. But to do that, the algorithm must be able to deter potentially exploitative behavior from others and, “when beneficial, determine how to elicit cooperation from a (potentially distrustful) opponent who might be disinclined to

⁶⁰ See, e.g., Susan Athey, Kyle Bagwell & Chris Sanchirico, *Collusion and Price Rigidity*, 71 REV. ECON. STUD. 317, (2004); see also Jeanine Miklos-Thal, *Optimal Collusion Under Cost Asymmetry*, 46 ECON. THEORY 99, 99-125 (2011).

cooperate.”⁶¹ The researchers went on to state that these challenges often cause AI algorithms to defect rather than to cooperate “even when doing so would be beneficial to the algorithm’s long-term payoffs.”⁶² Another paper further noted “[l]earning successfully in such circumstances is challenging since the changing strategies of learning associates creates a non-stationary environment that is problematic for traditional artificial learning algorithms.”⁶³ One of the researchers of this study reiterated in a 2020 article that “despite substantial progress to date, existing agent-modeling methods too often (a) have unrealistic computational requirements and data needs; (b) fail to properly generalize across environments, tasks, and associates; and (c) guide behavior toward inefficient (myopic) solutions.”⁶⁴ Indeed, each one of the AI studies reviewed above had to use clever engineering to confront and solve *some* of these challenges.

In the next section, I will discuss and comment on some important, recent experimental studies in which standard reinforcement learning pricing algorithms are shown to be able to learn to collude with one another without any special design tweaks or instructions from the human developers. Given the limitations to be discussed below and the early stage of the recent research, however, it is safe to conclude that to design an algorithm that has some degree of *guaranteed* success in eliciting tacit collusion in realistic situations and timeframes, the capability to collude most likely needs to be an explicit design feature.⁶⁵

⁶¹ Crandall et al., *supra* note 45, at 2.

⁶² Crandall et al., *supra* note 45, at 2.

⁶³ Jacob W. Crandall & Michael A. Goodrich, *Learning to Compete, Coordinate, And Cooperate in Repeated Games Using Reinforcement Learning*, 82 MACH. LEARNING 281, 281–314 (2011), p.281.

⁶⁴ Jacob W. Crandall, *When Autonomous Agents Model Other Agents: An Appeal for Altered Judgment Coupled with Mouths, Ears, And A Little More Tape*, 280 A.I. 103219, Dec. 16, 2019, at 1.

⁶⁵ But what are the chances that a collusive algorithmic feature is also procompetitive (that is, efficiency enhancing)? Harrington (2019) concluded that the “properties of pricing algorithms that deliver these efficiencies are not directly relevant to generating collusion.” Harrington, *supra* note 17, at 24. Anticipating an imperfect delineation, Harrington also proposed a framework to assess the antitrust liability of a particular algorithm to the extent that there is some uncertainty. *See id.*

This means that there may very well be important leads that the antitrust agencies and even private litigants could look for in an investigation or a discovery process.⁶⁶ Several types of documents are of particular interest. These include any internal document that sheds light on the design goals of the algorithm, any documented behavior of the algorithm, and any document that suggests that the developers had revised and modified their algorithm to further the goal of tacit coordination. Another type of document that should raise red flags is any marketing and promotional material that suggests that the developers may have promoted the algorithm's capability to elicit coordination from competitors. Note that it is not necessary for the investigators to have an intimate understanding of the technical aspects of the AI algorithm to look for such evidence.⁶⁷

C. The Economics Literature

The economics literature that explicitly examines algorithmic collusion is more limited than the AI literature surveyed above but growing rapidly.⁶⁸ In an experimental

⁶⁶ The joint French and German report provides a more detailed discussion. BUNDESKARTELLAMT & AUTORITE DE LA CONCURRENCE, *supra* note 14, at 68–74.

⁶⁷ This is important because there is a natural and understandable “fear” of complex AI/ML methods such as deep neural networks. For example, Stucke and Ezrachi emphasize,

We note how, to date, most strategies discussed are powered by price algorithms and are yet to include cutting-edge neural networks. The increased use of neural networks will indeed complicate enforcement efforts. . . . Due to their complex nature and evolving abilities when trained with additional data, auditing these networks may prove futile. The knowledge acquired by a Deep Learning network is diffused across its large number of neurons and their interconnections, analogous to how memory is encoded in the human brain. These networks, based on non-linear transformations, are considered as opaque, black boxes. Enforcers may lack the ability to trace back the steps taken by algorithms and unravel the self-learning processes. If deciphering the decision making of a deep learning network proves difficult, then identifying an anticompetitive purpose may be impossible.

Ariel Ezrachi & Maurice E. Stucke, *Algorithmic Collusion: Problems and Countermeasures* 17, 26 (Bkgd. Note for OECD Competition Cmte., May 31, 2017), <https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WD%282017%2925&docLanguage=En>.

⁶⁸ Here, I treat the literature on algorithmic collusion somewhat distinctively from the large experimental literature in economics that studies human behavior in oligopolistic markets. For an example in the latter

study, a team of researchers recently showed that their algorithm successfully induced human rivals to fully collude in a simulated duopoly market with a homogenous product and that such a collusive outcome was reached relatively quickly.⁶⁹ Despite the various limitations, many of which are discussed in the previous section, it is one of the strongest pieces of evidence that supports the algorithmic collusion hypothesis in economics. But an important observation relevant to our discussion is that their algorithmic design was based on the so-called zero-determinant strategy (ZDS) that is *known* to be able to extort and elicit cooperation from opponents in iterated prisoners' dilemmas.⁷⁰ I argue below that this type of algorithmic design approach should raise red flags regardless of the fact that it is the algorithms, not the humans, that ultimately collude with others.

Turning to algorithms that are not explicitly designed to collude or elicit collusion, one early study showed that a particular type of RL algorithm called Q-learning could lead to some degree of imperfect tacit collusion in a quantity-setting environment.⁷¹ More recently, another study reported a similar finding in a price-setting environment.⁷² Both are important contributions and demonstrate the theoretical possibility of algorithmic collusion, when collusion is not an explicit design goal.⁷³ The strongest evidence comes

literature, see Steffen Huck, Hans-Theo Normann & Jörg Oechssler, *Two Are Few and Four Are Many: Number Effects in Experimental Oligopolies*, 53 J. ECON. BEHAV. ORG. 435 (2004).

⁶⁹ Nan Zhou et al, *Algorithmic Collusion in Cournot Duopoly Market: Evidence from Experimental Economics* (Feb. 21, 2018) (unpublished manuscript), <https://arxiv.org/abs/1802.08061>.

⁷⁰ See William H. Press & Freeman J. Dyson, *Iterated Prisoner's Dilemma Contains Strategies That Dominate Any Evolutionary Opponent*, 109 PROCS. NAT'L ACAD. SCI. 10409, 10409 (2012).

⁷¹ See Ludo Waltman & Uzay Kaymak, *Q-Learning Agents in a Cournot Oligopoly Model*, 32 J. ECON.

DYNAMICS & CONTROL 3275, 3287 (2008). For a user-friendly introduction to Q-learning, see Ittoo & Petit, *supra* note 35. Note that the Foolproof Cooperative Learning developed by Jacq et al. (2019) also uses Q-learning. See Jacq et al., *supra* note 52.

⁷² See Emilio Calvano et al., *Algorithmic Pricing and Collusion: What Implications for Competition Policy?*, 55 REV. INDUS. ORG. 155 (2019).

⁷³ For a discussion on the implausibility of "accidental tacit collusion" or "blundering into tacit collusion," see, for example, Edward J. Green, Robert C. Marshall & Leslie M. Marx, 2, *Tacit Collusion in Oligopoly*, in OXFORD HANDBOOK INT'L ANTITRUST ECON. (Roger D. Blair & D. Daniel Sokol eds., 2014).

from another even more recent study, in which the researchers found that their RL algorithms “consistently learn to charge supra-competitive prices, without communicating with one another . . . This finding is robust to asymmetries in cost or demand, changes in the number of players, and various forms of uncertainty.”⁷⁴

One of the most interesting observations in this study is that the RL algorithm appears to have learned to punish the “cheater” and reward the “collaborator.”⁷⁵ This type of reward-punishment strategy has been labeled as problematic collusive behavior and is the defining characteristic of collusion by Harrington (2019).⁷⁶ And it is this observation that led the researchers to conclude that the RL algorithm has learned to tacitly collude.

The finding of the RL algorithm’s robust tendency to tacitly collude is concerning. A common caveat for such an experimental study, however, is that the artificial market is too simplistic relative to any real market. Other challenges and limitations have already been discussed in the previous section.⁷⁷ I highlight one difficulty here.⁷⁸ The RL algorithm in the researchers’ experiments takes an average of 850,000 periods of training

⁷⁴ Emilio Calvano et al., *Artificial Intelligence, Algorithmic Pricing and Collusion*, AM. ECON. REV. (forthcoming 2020) (manuscript at 1), <https://ssrn.com/abstract=3304991>.

⁷⁵ To show this, the researchers forced their algorithm to “cheat” in one period by lowering its own price. They found that the competitor would immediately lower its price in the next period by even a larger amount, suggesting a “punishment.” What is also interesting is that it appears that the “cheating” algorithm anticipates the punishment because it also immediately lowers its price. After that, the researchers find that both algorithms gradually raise their price to a pre-cheating supra-competitive level in almost lock-steps.

⁷⁶ See, e.g., Harrington, *supra* note 17, at 6 (“Definition: Collusion is when firms use strategies that embody a reward–punishment scheme which rewards a firm for abiding by the supracompetitive outcome and punishes it for departing from it.”); see also Alexander Peysakhovich & Adam Lerer, *Towards AI That Can Solve Social Dilemmas* 5, ASS’N FOR ADVANCEMENT A.I. (Mar. 15, 2018), <https://www.aaai.org/ocs/index.php/SSS/SSS18/paper/view/17560/15514> (“Any conditionally cooperative strategy needs access to the cooperative strategy and a ‘threat’ strategy.”).

⁷⁷ See Ittoo & Petit, *supra* note 35 (discussing additional technical challenges related to RL).

⁷⁸ For additional commentary on this study and suggested future research topics, see Ai Deng, *Algorithmic Tacit Collusion is a Limited Threat to Competition*, LAW360 (Dec. 10, 2019), <https://www.law360.com/articles/1226694/algorithmic-tacit-collusion-is-a-limited-threat-to-competition>.

to learn to “tacitly collude.”⁷⁹ Although that amounts to less than one minute of CPU time, it means that, in the real world, the algorithm “learns” after over 2,300 years if they change prices daily, or over 1.5 years if they change every minute. And this is after the researchers limited the set of possible prices the algorithm could choose from.⁸⁰ It is unlikely that any company would be amenable to allow the algorithm to trial-and-error with actual prices, let alone for years. Future technological advances, especially in markets where firms’ algorithms interact at (ultra-)high frequency, may significantly reduce the learning time, but the point is that a “collusive” algorithm is arguably less relevant to the antitrust community if it takes an unrealistically long time to learn to collude. Indeed, the longer the learning takes, the more likely the market structure will change during the learning stage. For example, the number of competitors may change due to entries and exits; new technologies may emerge and disrupt an industry; even the macroeconomic environment may change, all of which create a “non-stationary” environment, making it difficult for an algorithm to learn. Recognizing this limitation, the researchers focused entirely on the algorithmic behavior *after* the training process had completed.⁸¹ In the researchers’ words, this means that the learning happens “off the job.”

If the training is done offline in a lab environment, the developers could in principle assess algorithmic behavior in a controlled environment as well. In fact, the researchers’ demonstration that detecting collusive behavior is possible shows that the black-box nature of algorithms does not necessarily inhibit our understanding of algorithmic behavior. We do need to keep in mind, however, that algorithmic behavior

⁷⁹ Under the learning parameters considered by the researchers, the learning can take as short as 400,000 and as long as up to 2.5 million periods. *See* Calvano et al., *supra* note 74, at 18.

⁸⁰ In their baseline experiment, the researchers allow only 15 different choices. *Id.* at 21.

⁸¹ “The downside of such relatively simple AI technology is the slowness of learning. But this is not a problem as long as one focuses on the behavior of the algorithm once they have completed the training process. This paper takes precisely such off-the-job approach. That is, we conform to the standard practice of training the algorithm before assessing their performance.” Calvano et al., *supra* note 74, at 12.

manifested in controlled experiments will be driven by the assumptions imposed in that environment and as a result, may or may not materialize in real markets.

Another paper (Klein, 2019) follows a similar line of research and shows that Q-learning can also lead to tacit collusion in a simulated environment of sequential competition.⁸² Among other assumptions, the study finds that the algorithmic behavior depends critically on the number of prices the AI algorithm is allowed to choose from. Specifically, the algorithms do not consistently learn to price optimally (i.e., play “best response”) with respect to each other. They do so in 312 out of 1,000 simulation experiments (31.2%) when they have seven prices to choose from and only 10 out of 1,000 experiments (1%) when they have 25 prices to choose from.⁸³ Furthermore, while the algorithm also exhibits the reward-punishment behavior similar to that documented by the previous study when it learns to price at the fully collusive (i.e., monopoly) level, the researcher was able to document this behavior in only 13.5% of their experiments when there are seven prices to choose from and only 1.9% (with at most one price increment away from the monopoly level) when there are 13 possible prices.⁸⁴ To put the finding of algorithmic collusion in perspective, the author noted that “for the environment considered in this paper, humans are expected to show a superior collusive performance

⁸² See Timo Klein, *Autonomous Algorithmic Collusion: Q-Learning Under Sequential Pricing* 34 (Amsterdam L. Sch. Rsch. Paper No. 2018-15, 2019), <https://ssrn.com/abstract=3195812>. The author considered the situation where both competitors use Q-learning algorithms as well as the situation where one uses Q-learning and other uses the tit-for-tat strategy. My discussion here is limited to the baseline results pertaining to Q-learning vs. Q-learning. Klein’s work also extended an earlier paper by Tesauro & Kephart (2002) that assumed the algorithms have full knowledge of the environment. See Gerald Tesauro & Jeffrey O. Kephart, *Pricing in Agent Economies Using Multi-Agent Q-Learning*, 5 AUTONOMOUS AGENTS & MULTI-AGENT SYS. 289, 292–93 (2002).

⁸³ “For those runs where both algorithms are playing best response to each other, Figure 3 lower panel shows the joint distribution of profitabilities Q^i . It shows that a Nash equilibrium is reached in 312 runs for $k = 6$, 79 runs for $k = 12$ and only 10 runs for $k = 24$.” Klein, pp. 18-19, *supra* note 82. Note that the number of possible prices is equal to $k+1$. Klein, *supra* note 82, at 7.

⁸⁴ “Results are shown for those runs in which the algorithms managed to coordinate on a Nash equilibrium with joint-profit maximizing prices in case of $k = 6$ (135 runs) and with at most one price increment away from joint-profit maximizing prices in case of $k = 12$ (19 runs).” *Id.* at 21.

because tacit collusion is relatively straightforward.”⁸⁵ As the researcher recognizes, “while this [the finding of the paper] shows that autonomous algorithmic collusion is in principle possible, practical limitations remain (in particular long learning and required stationarity).”⁸⁶

Another interesting recent article (Salcedo, 2016) provides a set of sufficient conditions under which the use of pricing algorithms leads to tacit collusion.⁸⁷ The author considered an algorithmic version of an “invitation to collude.” Three conditions must be true for algorithmic collusion to materialize in his framework. First, competitors should be able to decode each other’s pricing algorithms. Second, after decoding others’ algorithms, the competitors should be able to revise their own pricing algorithms in response. Third, firms should not be able to revise or change their algorithms too fast.⁸⁸ Intuitively, under these conditions, a firm could essentially communicate its intent to collude by adopting a “collusive” algorithm and letting the competitor decode it. Once this invitation to collude is decoded, the competitor can then choose to follow the lead or not. When making the decision, the firm on the receiving end will naturally be concerned about the possibility that the invitation is no more than a trick and that once that firm starts to cooperate, the competitor would take advantage of it by immediately reversing course (say, by immediately lowering prices to steal customers away). This is where the third condition comes into the picture. If the firms understand that changing the strategy takes time, then the receiving firm’s concern would be alleviated. Schwalbe (2018) has argued that the situation postulated by Salcedo is an example of direct communication (through the decoding of an algorithm), rather than tacit and is thus equivalent to explicit

⁸⁵ *Id.* at 32.

⁸⁶ *Id.* at 34.

⁸⁷ See Bruno Salcedo, *Pricing Algorithms and Tacit Collusion* (Nov. 11, 2015) (unpublished manuscript), <http://brunosalcedo.com/docs/collusion.pdf>.

⁸⁸ And all these are also common knowledge among the competitors.

collusion.⁸⁹

1. Algorithms and Structural Characteristics

One strand of economic literature that has received much attention in the antitrust community identifies the structural characteristics that tend to facilitate/disrupt collusion. We've already discussed some of these when we assessed the limitations of the AI studies. In this section, we provide a more systematic discussion on how algorithms could impact these market characteristics.

A partial list of such structural characteristics that some have argued tend to facilitate collusion includes the following:

- Higher market transparency
- More stable demand
- Small and frequent purchases by customers
- Symmetric competitors
- Fewer competitors
- More homogeneous products
- Higher barriers to entry

Market transparency is one obvious characteristic that an algorithm could potentially enhance. Some have argued that algorithm-enhanced market transparency will in turn facilitate collusion. For example, the Autorité de la Concurrence and Bundeskartellamt stated in their "2016 Joint Report on Competition Law and Data" that "... market transparency ... gains new relevance due to technical developments such as sophisticated computer algorithms. For example, by processing all available information and thus monitoring and analysing or anticipating their competitors' responses to current

⁸⁹ See Schwalbe, *supra* note 16, at 590 ("It should be noted, however, that such collusion is not tacit, as the title of Salcedo's (2015) paper suggests, but involves direct communication between the firms through the decoding of an algorithm and is thus equivalent to explicit collusion between the firms.").

and future prices, competitors may easier be able to find a sustainable supra-competitive price equilibrium which they can agree on.”⁹⁰ In their recent “2019 Joint Report on Algorithms and Competition”, the agencies again noted that “[m]arket transparency for companies facilitates the detection of deviations and thus can increase the stability of collusion. By allowing a greater gathering and processing of information, monitoring algorithms collecting these data could thus foster collusion.”⁹¹ Francisco Beneke and Mark-Oliver Mackenrodt also stated that “coordinated supra-competitive pricing is in many settings difficult due to uncertainties regarding costs of competitors and other variables. If the algorithms can learn how to make accurate predictions on these points, then the need to solve these problems with face-to-face meetings may disappear. . . . One common source of equilibrium instability in oligopoly settings is said to be changes in demand.”⁹²

Recent empirical evidence shows that increased transparency may have indeed led to potential tacit collusion in real markets.⁹³ While these arguments highlight the ways in which transparency could facilitate collusion, it is critical that we recognize that under some conditions, transparency can also undermine it. In fact, firms in several cartels took pains to limit the information they shared and maintained a certain degree of privacy. For example, in the isostatic graphite cartel, firms would enter their own sales on a calculator that was then passed around the table so that only the aggregate sales were

⁹⁰ BUNDESKARTELLAMT & AUTORITE DE LA CONCURRENCE, COMPETITION LAW AND DATA 14 (2016), <https://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.html>.

⁹¹ BUNDESKARTELLAMT & AUTORITE DE LA CONCURRENCE, *supra* note 14, at 18.

⁹² Francisco Beneke & Mark-Oliver Mackenrodt, *Artificial Intelligence and Collusion*, 50 INT’L REV. INTELL. PROP. & COMPETITION L. 109, 126 (2019).

⁹³ See, e.g., Fernando Luco, *Who Benefits from Information Disclosure? The Case of Retail Gasoline*, 11 AM. ECON. J.: MICROECON. 277, 303 (2019) (“Regarding disclosure policies in general, this paper shows that mechanisms that increase market transparency may increase competition and benefit consumers only if consumers can easily access and use the disclosed information. Otherwise, the supply-side response to disclosure is likely to dominate, and the intensity of competition will decrease.”).

observed. Thus, they could compute their own market shares but not their competitors'. In the plasterboard cartel, firms set up a system for exchanging information through an independent third party that would consolidate and then circulate the aggregate information among the firms.⁹⁴

Sugaya and Wolitzky (2018) provided an economic theory to explain why privacy (i.e., less transparency) can be beneficial to the sustainability of a cartel.⁹⁵ Specifically, they considered cartels that engage in market/customer allocation; that is, cartel firms agree to serve only their own "home" market and not to sell to the competitors' home markets. The basic intuition is as follows: When the demand in your home market is strong (and hence you have an incentive to raise your prices), transparency about the (higher) demand in your home market, your costs, and your prices would give the other cartel firms more incentive to enter your markets simply because there would be more to gain. This incentive is stronger, the less patient the competitors are. Along similar lines, Miklos-Thal and Tucker (2019) build a theoretical model to show that while "better forecasting allows colluding firms to better tailor prices to demand conditions, it also increases each firm's temptation to deviate to a lower price in time periods of high predicted demand."⁹⁶ This result leads them to conclude that "despite concerns expressed by policy makers, better forecasting and algorithms can lead to lower prices and higher consumer surplus."⁹⁷ Under a different economic model, O'Connor and Wilson (2019) reached the same conclusion that greater transparency and clarity about the demand has ambiguous effects on consumer welfare and firm profits. These authors therefore call for a cautious

⁹⁴ See Joseph. E. Harrington, Jr., *How Do Cartels Operate?*, 2 *FOUND. & TRENDS MICROECON.* 1, 53–54 (2006).

⁹⁵ See Takuo Sugaya & Alexander Wolitzky, *Maintaining Privacy in Cartels*, 126(6) *J. POL. ECON.* 2569, 2600 (2018).

⁹⁶ Jeanine Miklos-Thal & Catherine Tucker, *Collusion by Algorithm: Does Better Demand Prediction Facilitate Coordination Between Sellers?* 65 *MGMT. SCI.* 1455, 1552 (2019).

⁹⁷ *Id.* at 1552.

antitrust policy toward the use of AI algorithms.⁹⁸

Sugaya and Wolitzky (2018) gave an analogy that should make it intuitively clear why more information does not necessarily facilitate collusion. Imagine there are two sellers at a park.⁹⁹ They can bring either ice cream or umbrellas to sell. Ice cream is in demand on sunny days and umbrellas are in demand on rainy days, and if both sellers bring the same good, they sell at a reduced price. In the absence of weather forecasts, it is an equilibrium for one seller to bring ice cream, the other to bring umbrellas as each expects to receive half the monopoly profits. But if the two sellers know the weather with a high degree of certainty before they pack their carts, they would both have incentive to bring the in-demand good and end up competing and splitting the reduced profits. Thus, in this simple example, transparency about the weather (though not transparency about the firms' actions) actually hinders collusion.

Some have also argued that an algorithm's speed could prevent cartels from cheating because any deviation from a tacitly or explicitly agreed-upon price could be detected and potentially retaliated against immediately.¹⁰⁰ For example, OECD's "Report on Algorithms and Collusion" states that "the advent of the digital economy has revolutionized the speed at which firms can make business decisions. . . . If automation through pricing algorithms is added to digitalization, prices may be updated in real-time, allowing for an immediate retaliation to deviations from collusion."¹⁰¹ Beneke and Mackenrodt echoed: "... price lags will tend to disappear since pricing software can react instantly to changes from competitors. Therefore, short-term gains from price cuts will

⁹⁸ See Jason O'Connor & Nathan E. Wilson, *Reduced Demand Uncertainty and the Sustainability of Collusion: How AI Could Affect Competition*, INFO. ECON. & POL'Y (forthcoming 2020).

⁹⁹ Sugaya & Wolitzky, *Supra* note 95.

¹⁰⁰ Michal S. Gal, *Algorithmic-facilitated Coordination—Note by Michal Gal* 26 (Bkgd. Note to Competition Cmte., June 22, 2017), [https://one.oecd.org/document/DAF/COMP/WD\(2017\)26/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2017)26/en/pdf).

¹⁰¹ OECD, *ALGORITHMS AND COLLUSION: COMPETITION POLICY IN THE DIGITAL AGE* 22 (2017), www.oecd.org/competition/algorithms-collusion-competition-policy-in-the-digital-age.htm.

decrease in markets. . . .”¹⁰² The observation that faster reaction reduces the incentive to deviate in the first place under *perfect* monitoring has been recognized in the economic literature as well. But economists have also shown that faster responses can be a double-edged sword when it comes to cartel stability under *imperfect* monitoring. A seminal article in this literature (Sannikov & Skrzypacz, 2007) shows that under some conditions, if market information arrives continuously and firms can react to it quickly (for instance, with flexible production technologies), collusion becomes very difficult.¹⁰³ Why is that?

Recall that earlier I discussed a situation where consumer demand is volatile and a cartel, producing a homogeneous product, can only observe the market price but not the production of individual cartel members. In that situation, when the firms observe a lower market price, they cannot perfectly tell whether it is due to someone deviating from their agreement or simply due to weak aggregate demand. Firms can deter cheating by resorting to price wars (by producing more, for example) when the price falls below a certain level. In this framework, when the time firms take to adjust their production becomes shorter, there are two counteracting effects on the sustainability of a cartel. On the one hand, the ability to change their production quickly means that they could start a price war as quickly as they want to. This tends to reduce the incentive to cheat and hence makes a cartel more sustainable. On the other hand, when the demand is noisy and hence the market price moves due to short-term idiosyncratic factors, firms that are constantly watching the market price trying to detect potential cheating will likely receive many idiosyncratic signals of lower prices. Under additional assumptions, the study shows that firms will simply commit too many Type I errors (false positives): that is, start price wars too often to sustain collusion in this environment. An experimental study

¹⁰² Beneke & Mackenrodt, *supra* note 92, at 126.

¹⁰³ See Yuliy Sannikov & Andrzej Skrzypacz, *Impossibility of Collusion under Imperfect Monitoring with Flexible Production*, 97 AM. ECON. REV. 1794, 1814 (2007).

yields results largely consistent with these theoretical predictions.¹⁰⁴ In fact, some studies have shown that one way a cartel could combat the issue is to deliberately delay the information flow.¹⁰⁵ At a theoretical level, it is not hard to imagine that using algorithms to continuously monitor the market information and enable firms to react quickly could bring the reality closer to the one considered in these research studies.¹⁰⁶

The effect of algorithms on many other factors is ambiguous.¹⁰⁷ Take asymmetry as an example. In general, economists believe that various forms of asymmetry among competitors tend to make (efficient) collusion more difficult.¹⁰⁸ A leading example is one where competitors have different cost structures (i.e., cost asymmetry). In this case, firms may find it difficult to agree to a common price because a lower-cost firm has an incentive to set a lower price than a higher-cost firm. This tends to make the coordination problem harder. In addition, as a research paper put it, “[E]ven if firms agree on a given collusive price, low-cost firms will be more difficult to discipline, both because they might gain more from undercutting their rivals and because they have less to fear from a possible

¹⁰⁴ Cf. Maria Bigoni et al, *Frequency of Interaction, Communication and Collusion: An Experiment*, 68 ECON. THEORY 827 (2018). Specifically, the authors find a U-shaped relationship between the speed of reaction and collusion. Subjects in their experiments were able to sustain collusion the longest when the speed of their reaction is intermediate. Interestingly, the authors also find that communication is the key to successful collusion and the speed of their reaction has only a secondary effect.

¹⁰⁵ See David Rahman, *Information Delay in Games with Frequent Actions i* (June 23, 2013) (unpublished manuscript), https://87b2a7c5-a-62cb3a1a-s-sites.googlegroups.com/site/davidrahmanwork/delay.pdf?attachauth=ANoY7comvISckGGlk2n1o6YMhD7VfA1Lg31ICZdNcMyLE5hU55uLB66KIX5rE1w6YNxtz4lipZqZclVtyO7nSOQdn7kXkY-nYk7-o2e6b2mf4YroH4PXFfrNPkpnPCH9IL0-c3_Dcz-LqIPw1VKgs5ToUFx4Jg-OS. (“I study repeated games with frequent actions and obtain a Folk Theorem in strongly symmetric strategies for the Prisoners’ Dilemma if public information can be *delayed*.” (emphasis added)).

¹⁰⁶ It is worth noting that some have also argued that this theoretical result is largely driven by certain assumptions made previously. See, e.g., António M. Osório, *A Folk Theorem for Games When Frequent Monitoring Decreases Noise*, 12 B.E.J. THEORETICAL ECON. 1 (2012).

¹⁰⁷ See OECD, *supra* note 101, at 23.

¹⁰⁸ See, e.g., Jeanine Miklos-Thal, *supra* note 60, at 1 (“Cost asymmetry is generally thought to hinder collusion”). But see David P. Byrne & Nicolas De Roos, *Learning to Coordinate: A Study in Retail Gasoline*, 109 AM. ECON. REV. 591, 618 (2019) (“[M]ergers that generate asymmetric firms may also facilitate collusion by enabling price leadership and experimentation.”).

retaliation from high-cost firms.”¹⁰⁹

Even if firms use the same algorithm provider, they are likely to customize their versions of the algorithm. As a simple example, imagine that some developers tell us that their algorithm is going to increase our profit. But what profit? Certainly, an algorithm that aims to maximize short-term profit is not going to behave the same way as an algorithm that aims to maximize long-term profit.¹¹⁰ Similarly, we also expect an algorithm to incorporate firm-specific cost information or objectives in its decision-making process. For example, *Feedvisor*, a provider of pricing algorithms for third-party Amazon marketplace sellers, states that its “pricing strategies for each individual SKU can be set based on a seller’s business objectives, such as revenue optimization, profit, or liquidation.”¹¹¹ That is, even if the algorithms adopted by competitors have the same structure and capability, they do not necessarily or automatically eliminate asymmetry. In fact, the algorithms are typically expected to reflect, if not exacerbate, existing asymmetries. Finally, pricing algorithms, by themselves, are unlikely to affect many other structural characteristics, especially those related to demand and firms’ product offerings.

It is worth emphasizing that these structural factors only predict which markets are more susceptible to coordination, not whether market participants are explicitly or tacitly colluding.

¹⁰⁹ Marc Ivaldi et al., *The Economics of Tacit Collusion* 36 (IDEI, Working Paper No. 186, Mar. 2003), http://idei.fr/sites/default/files/medias/doc/wp/2003/tacit_collusion.pdf.

¹¹⁰ See CMA Report, *supra* note 18, at 15:

[C]ompetition authorities could also examine whether the algorithm can place weight on or value future profits. If the algorithm’s objective function is very short-term (e.g. maximise profit on each and every sale, with no regard for the impact of its current actions on future profits) then the algorithm is less likely to lead to coordination.

¹¹¹ Natalie Taylor, *Know Your Competition: How to Increase Sales on Amazon*, FEEDVISOR (Aug. 30, 2019), <https://feedvisor.com/resources/e-commerce-strategies/know-your-competition-how-to-increase-sales-on-amazon-webinar-recap/>.

D. Implications for Antitrust Compliance and Policy

Despite the significant technical challenges in designing tacitly collusive algorithms and the ambiguous economic relationship between algorithms and collusion, the AI and economic research I surveyed above clearly shows that algorithmic collusion is *possible*. If there is one lesson we have learned from past experiences, it is that predicting the future of technology is notoriously difficult. In this section, I discuss the reasons we should stay vigilant and what we can do to combat the risk of algorithmic collusion.

As a starting point, a potentially effective antitrust policy is to explicitly prohibit the development and deployment of autonomously collusive algorithms. Consider the algorithmic design that equips an algorithm with the ability to communicate. In a study discussed earlier, the algorithm's capability to learn to cooperate and maintain cooperation (Crandall et al, 2018) is significantly improved when it can communicate with others (including human counterparts) through costless, non-binding messages ("cheap talk"). That research demonstrates that, just like humans, the ability to communicate can be a key to forging a cooperative relationship among competing algorithms.¹¹² Recognizing the importance of such non-binding signals, the lead author of that study argued in a recent article that "research into developing algorithms that better utilize non-binding communication signals should be more abundant" because "non-binding communication signals are not being given sufficient attention in many scenarios and algorithms considered by AI researchers. . . ."¹¹³ The author also believes that "the potential value of better using non-binding communication signals often

¹¹² Not surprisingly, the capability to communicate by itself is not sufficient to develop an effective cooperative algorithm. Algorithms will also need to know how to best respond to communications. This is particularly important when AI agents' self-interests diverge as in PDs and in competitive marketplaces. For an overview, see Angeliki Lazaridou & Marco Baroni, Emergent Multi-Agent Communication in the Deep Learning Era, (Jul. 14, 2020) (unpublished manuscript), <https://arxiv.org/abs/2006.02419>.

¹¹³ Crandall, *supra* note 64, at 2.

outweighs” the challenges in doing so.¹¹⁴ He went on to propose a two-step strategy, the first step of which is for AI algorithms to “learn (or being given) a shared-communication protocol.”¹¹⁵ As the author noted, several strands of AI research, including on automated negotiation¹¹⁶ and vocabulary alignment¹¹⁷ can further improve and even automate algorithmic communication. Future research along these lines could accelerate the development of algorithms capable of reaching and sustaining collusion. Designs that enable pricing algorithms to communicate and even negotiate with competitors (humans or algorithms) with the goal of achieving collusion put consumer welfare at risk even if such capability is encoded in machine-readable syntax and humans do not participate in the actual communication or negotiation.¹¹⁸

I also discussed AI studies in which researchers were able to design cooperative algorithms by carefully modifying their objective.¹¹⁹ Any such design modifications with the goal of ensuring or eliciting cooperative behavior from competitors are another example of problematic conduct, regardless of whether supra-competitive prices are ultimately set “autonomously” by the algorithms. More generally, absent procompetitive

¹¹⁴ *Id.* at 8.

¹¹⁵ *Id.* at 9.

¹¹⁶ See, e.g., Cédric Buron et al., MCTS-based Automated Negotiation Agent, INT’L CONF. ON PRINCIPLES & PRAC. MULTI-AGENT SYS. (Sept. 23, 2019), <https://arxiv.org/abs/1909.09461>; Tim Baarslag et al., *A Survey of Opponent Modeling Techniques in Automated Negotiation* (AAMAS Working Paper, May 2016), <https://eprints.soton.ac.uk/393780/>; Tim Baarslag et al., *A Tit for Tat Negotiation Strategy for Real-Time Bilateral Negotiations*, in COMPLEX AUTOMATED NEGOTIATIONS: THEORIES, MODELS, AND SOFTWARE COMPETITIONS 229 (Takayuki Ito et al. eds., 2013).

¹¹⁷ See, e.g., Paula Chocron & Marco Schorlemmer, *Vocabulary Alignment in Openly Specified Interactions*, 68 J.A.I. RSCH. 69 (2020); see also research on natural language generation (NLG), for example, Will Douglas Heaven, *OpenAI’s New Language Generator GPT-3 Is Shockingly Good – and Completely Mindless*, MIT TECH. REV. (July 20, 2020), <https://www.technologyreview.com/2020/07/20/1005454/openai-machine-learning-language-generator-gpt-3-nlp/>.

¹¹⁸ This is consistent with the point made by Harrington (2019). He writes that “AAs would not be in compliance if they coordinated their conduct using arbitrary messages unrelated to the competitive process” Harrington, *supra* note 17, at 19.

¹¹⁹ See Gautier et al., *supra* note 11 (identifying such algorithmic designs as examples of the so-called predictable agent scheme).

justifications, basing the design of pricing algorithms on those already known to elicit and maintain cooperation is highly suspicious. The success of such an approach in experimental studies is another reason why we should remain vigilant.¹²⁰

The current research has more to offer. For example, antitrust scholars have advocated more research to understand “collusive” features of an algorithm. Ezrachi and Stucke called this type of research a “collusion incubator.”¹²¹ Harrington went a step further and proposed a detailed research program and discussed its promises and challenges.¹²² Specifically, he proposed to create simulated market settings to test and identify algorithmic properties that support supra-competitive prices. AI researchers, in their pursuit of robots capable of cooperating with others, have laid some important groundwork for this effort. On this point, let’s take a closer look at an instructive algorithmic taxonomy discussed in a recent AI study.¹²³

Based on this particular taxonomy, algorithms such as TFT are examples of the type of algorithms known as *Leaders*. Leader algorithms “begin with the end in mind” and “focus on finding a ‘win-win’ solution” by pursuing an answer to the question of what desirable outcome is likely to be acceptable to the counterpart. And once the outcome (e.g., joint-monopoly price) is selected by *Leaders*, they would then stick to it, as long as their counterparts cooperate and “otherwise punish deviations from the outcome to try to promote its value.”¹²⁴ This is precisely the type of problematic reward and punishment scheme discussed by Harrington (2019). If for one reason or another, the

¹²⁰ AI researchers have recognized that doing so is a natural starting point for designing AIs that can learn to cooperate (“A natural desiderata then is to ask for agents in complex social dilemmas that maintain the good properties of these well-known PD strategies.”) Peysakhovich & Lerer, *Towards AI that Can Solve Social Dilemmas*, 2018 AAAI Spring Symposium Series; see also Zhou et al., *supra* note 69.

¹²¹ Ezrachi & Stucke, *supra* note 67, at 28.

¹²² See Harrington, *supra* note 17, at 356–58.

¹²³ Crandall, *supra* note 64, at 4–5.

¹²⁴ *Id.* at 5.

counterpart does not accept the outcome, the more flexible *Builders* algorithms would move on to iteratively seek for consensus and compromises. An example of this type of *Builder* algorithm is the expert system proposed by Crandall et al (2019) that I discussed earlier. From an antitrust perspective, this is a helpful taxonomy in that it suggests that *Leader* and *Builder* algorithms are probably what we should be most concerned about.

1. A Comment on Digital Markets¹²⁵

Before we move on to the lessons for antitrust compliance more specifically, I want to comment on the implications of pricing algorithms on digital markets. Not surprisingly, as more and more businesses are moving online and have at least some online presence, “digital” market is becoming increasingly encompassing. However, many would probably agree that a quintessential digital market should have the following characteristics:

1. Prices are posted online, transparent, and potentially scrapable; and
2. Competitors sell largely homogenous products either on the same online store (e.g., Amazon) or on their own online websites (e.g., Staples.com and OfficeDepot.com).

In fact, the simulated markets in which Calvano et al (2020) and Klein (2019) demonstrated the possibility of tacit collusion by self-learning algorithms share these characteristics. So, there are good reasons why this type of markets is of great interest and potentially more susceptible to algorithmic collusion. More generally, to the extent that a market already exhibits structural characteristics that are conducive to coordination, the

¹²⁵ I focus on the potential risks of collusion in this section. Algorithms obviously have many positive and pro-competitive effects on digital markets. See, e.g., Thibault Schrepel & Michal S. Gal, *Algorithms & Competition Law: Interview of Michal Gal by Thibault Schrepel*, CONCURRENCES (May 14, 2020), <https://www.concurrences.com/en/bulletin/special-issues/algorithms/algorithms-competition-law-prof-michal-gal-s-interview-about-eu-and-national-en>; CMA Report, *supra* note 18, at 20–31, 47–51.

CMA report argues that “algorithmic pricing may be more likely to facilitate collusion.”¹²⁶

As Schwalbe (2018) pointed out, most of the earlier literature on the risk of algorithmic collusion in this type of digital market, however, is illustrated not by self-learning AI algorithms but by simple deterministic pricing rules, most commonly, price-matching ones. Intuitively, if algorithms enable a seller to continuously monitor competitor prices and automatically match them, there would be less competitive pressure and thus less incentive to lower prices to begin with, especially when the algorithms can detect price changes and react instantaneously. This impact on firms’ incentives is no different from other types of price guarantees, however, and “does not pose any novel problems for competition that would not occur, for example, with the widespread use of price guarantees.”¹²⁷

We have already discussed the relationship between market transparency and tacit collusion and, in particular, when transparency could facilitate or hinder (algorithmic) collusion. Even in situations where transparency unequivocally facilitates collusion, it is not implausible that oligopolistic firms sophisticated enough to use complex pricing algorithms, upon seeing a profitable deviation, would use technologies or other workarounds to obscure transparency and secure higher profits. The simple practice of allowing a customer to see the price only after the item is added to their shopping cart would not deter automated price scraping but could make competitor price tracking more difficult.¹²⁸ They can and indeed do deny web scraping altogether, especially if it is determined that the scraping is being done by an algorithm. If firms do not want to wholesale-block information scraping by competitors (for example, when they are engaging in some kind of tacit or explicit collusion), they could in theory

¹²⁶ CMA report, *supra* note 18, at 13; *see also* OECD, *supra* note 7, at 5.

¹²⁷ Schwalbe, *supra* note 16, at 154.

¹²⁸ I note that the current practice of not displaying prices until after the item is added to one’s cart is likely largely driven by the minimum advertised price (MAP) requirement.

selectively change the information displayed depending on who is visiting, potentially defeating automated price monitoring.¹²⁹ That is, if algorithms can facilitate tacit collusion, there do not appear to be a strong a priori reason that technologies would not be able to facilitate deviation as well. Which of these incentives dominates is an empirical question.

III. EXPLORING ALGORITHMIC ANTITRUST COMPLIANCE

Having explored the evidence of algorithmic collusion, we turn to another pertinent question: *If* pricing algorithms could autonomously collude, can they be made antitrust-compliant as well? Many have started pondering this after a series of public comments by EU competition officials in recent years. Explaining this concept, the EU Competition Commissioner Margrethe Vestager stated in a recent speech that “[w]hat businesses can—and must—do is to ensure antitrust compliance by design. That means pricing algorithms need to be built in a way that doesn’t allow them to collude.”¹³⁰ She later elaborated on her view at another conference: “[s]ome of these algorithms will have to go to law school before they are let out. You have to teach your algorithm what it can do and what it cannot do, because otherwise there is the risk that the algorithm will learn the tricks. . . . We don’t want the algorithms to learn the tricks of the old cartelists. . . . We want them to play by the book also when they start playing by themselves.”¹³¹ Another

¹²⁹ See, e.g., U.S. Patent No. 8,595,847 col. 3 ll. 48–53 (issued Nov. 26, 2013) (“If the requester is determined to be a bot, the web server may selectively provide or not provide certain information/content of the web page. For example, when a web page is visited by a bot of a search engine, dynamic content and graphical contents and/or advertisements may not be presented, while relevant keywords can be added.”). Firms may also use technology to circumvent such restrictions (say, with the use of VPN).

¹³⁰ Margrethe Vestager, Comm’r for Competition, Eur. Comm’n, Algorithms and Competition: Speech at the Bundeskartellamt 18th Conference on Competition, Berlin (Mar. 16, 2017), https://wayback.archive-it.org/12090/20191129221651/https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/bundeskartellamt-18th-conference-competition-berlin-16-march-2017_en.

¹³¹ Recode, *Web Summit in Lisbon – Interview of Commissioner Vestager (Competition)* by Kara Swisher (Recode), YOUTUBE (Nov. 6, 2017), <https://youtu.be/90OhCfyYOOK>.

senior EU official echoed the view that firms should program “software to avoid collusion in the first place”¹³² and that “[r]espect for the rules must be part of the algorithm that a company configures and for whose behavior the company will be ultimately liable.”¹³³

As desirable as antitrust compliance by design is, Simonetta Vezzoso pointed out that the implementation may not be straightforward: “[w]hile the idea of competition compliance by design might be gaining some foothold in the mind-sets of some competition authorities, there are currently no clear indications how it could be integrated into the already complex competition policy fabric.”¹³⁴ Indeed, what does it mean to “program compliance with the Sherman Act?” That is the question that Joseph Harrington asked in a recent paper. He concluded that all that the current jurisprudence tells us is to make sure algorithms do not “communicate with each other in the same sense that human managers are prohibited from communicating” under the Sherman Act.¹³⁵ But as both Vezzoso and Harrington suggested, there is more we could do.

In this section, I discuss several potential pathways to algorithmic compliance and argue that a robust compliance program should take a holistic and multi-faceted view. Specifically, I will look at a monitoring approach to compliance, then venture into the harder problem of designing compliant algorithms from the ground up. I will also discuss some existing proposals, draw additional lessons from the recent AI literature, and finally present potential technical frameworks, inspired by the current machine learning

¹³² Johannes Laitenberger, Dir.-Gen., DG-Comp, Competition at the Digital Frontier: Speech at the Consumer and Competition Day (Apr. 24, 2017), http://ec.europa.eu/competition/speeches/text/sp2017_06_en.pdf.

¹³³ Johannes Laitenberger, Dir.-Gen., DG-Comp, Level and Open Markets Are Good for Business: Speech at the AMCHAM-EU 34th Annual Competition Policy Conference (Oct. 27, 2017), https://ec.europa.eu/competition/speeches/text/sp2017_19_en.pdf.

¹³⁴ Simonetta Vezzoso, *Competition by Design* 1 (Nov. 28, 2017) (unpublished manuscript), <https://ssrn.com/abstract=2986440>.

¹³⁵ Harrington, *supra* note 17, at 348–49.

literature, for compliant algorithmic design.¹³⁶

A. Algorithmic Compliance: A Monitoring Approach

The first approach is to use automated monitoring as a compliance tool. Despite not being the type of competition by design that would immediately come to mind, these algorithmic tools can be an important component of a compliance program. Instead of trying to dictate the design process, these tools monitor the behavior of humans as well as algorithms. The main advantage of this approach is that it does not attempt to open the black box of complicated computer programs; it focuses instead on the relevant firm behaviors that can be observed and interpreted.

Directly monitoring the “symptoms” of an antitrust violation is the most straightforward starting point. These “symptoms” are often referred to as plus factors or collusive markers. More formally, Kovacic, et al., define plus factors as “economic actions and outcomes, above and beyond parallel conduct by oligopolistic firms, that are largely inconsistent with unilateral conduct but largely consistent with explicitly coordinated action.”¹³⁷ They further define the *super* plus factors as the strongest of such factors. For example, unexplainable price increases or other types of abnormalities in prices have been recognized as such plus factors.¹³⁸ There is by now a robust “cartel screen” literature that studies empirical approaches and designs algorithms to detect such price anomalies.¹³⁹ And with adequate data and necessary analytical capabilities, empirical screening algorithms could be an important addition to an algorithmic compliance

¹³⁶ For readers interested in legal implications and current proposals, see references *supra* note 17. I also do not discuss the use of algorithms by consumers to combat algorithmic collusion. This is the idea of algorithmic consumers proposed by Michal S. Gal and Niva Elkin-Koren. See Michal S. Gal & Niva Elkin-Koren, *Algorithmic Consumers*, 30 HARV. J.L. & TECH. 309 (2017).

¹³⁷ William E. Kovacic et al., *Plus Factors and Agreement in Antitrust Law*, 110 MICH. L. REV. 393, 393 (2011).

¹³⁸ *Id.* at 393.

¹³⁹ For a review and a discussion about future research areas in this literature, see Deng, *supra* note 31.

program.¹⁴⁰

Michal Gal (2019) proposed several plus factors directly related to the use of pricing algorithms. For example, she argues that red flags should be raised if firms “consciously use similar algorithms even when better algorithms are available to them” or if “firms make conscious use of similar data on relevant market conditions even when better data sources exist,” among others.¹⁴¹

The second approach to algorithmic compliance has seen increasing adoption and success in the Regulatory Technology (RegTech) industry where AI technologies are being deployed to help companies meet their regulatory compliance needs. RegTech as an industry, often labelled as the new FinTech, or Financial Technology, has seen rapid growth in recent years.¹⁴² Several RegTech companies currently offer AI-based compliance technologies based on natural language processing (NLP) and natural language understanding (NLU). According to one company, their NLP/NLU technology can “detect intentions, extract entities, and detect emotions” in human communications.¹⁴³ This type of technology could also be used to monitor communications among competitors to detect, and hence potentially deter, collusive

¹⁴⁰ While almost never made explicit, it is worth noting that almost all the current discussions in the antitrust community are limited to price-setting algorithms. Obviously, cartels and cartel agreements come in different shapes and forms. Some cartels fix prices, while others allocate markets or rig bids. Some cartels use list pricing, while others mainly rely on sales representatives, with or without list prices. Depending on the nature of the cartel, the ways to implement an agreement, tacit or explicit, are also going to be different. And as a result, the types of collusive markers may also be different.

¹⁴¹ Gal, *supra* note 16, at 114. When considering these factors, it is important to keep in mind that better algorithms and better data may be more costly to the firms, which might explain firms’ choices.

¹⁴² Deloitte curates a list of RegTech companies and, as of August 16th, 2020, there are 378 companies on the list. See *RegTech Universe 2020*, DELOITTE, <https://www2.deloitte.com/lu/en/pages/technology/articles/regtech-companies-compliance.html> (last visited Aug. 16, 2020). Eighty percent of these companies were started in the past 10 years. Companies started in the five-year span between 2012 and 2016 account for over 60% of all RegTech firms. The UK Financial Conduct Authority is also actively looking to RegTech. See Alison Noon, *UK Finance Cop ‘Aggressively’ Pursuing Robo Regulation*, LAW360, (Jan. 17 2019), <https://www.law360.com/articles/1119869/uk-finance-cop-aggressively-pursuing-robo-regulation>.

¹⁴³ *Success Stories*, FONETIC, <https://fonetic.com/en/success-stories/> (last visited Sept. 23, 2020).

behavior. Indeed, evidence of interfirm communications played a critical role in the investigation of a number of international cartel cases. With NLP and NLU AI technologies, machines can potentially flag problematic communications in real time in a cost-effective manner.

Despite the active and promising research in collusive markers and their uses for cartel detection and monitoring, developing these monitoring algorithms is by no means a trivial exercise. Collecting adequate and quality data is almost always the very first step. To the extent that a company or an antitrust agency wants to incorporate these tools in a compliance or a monitoring program, analytical capabilities may also be necessary.¹⁴⁴ Equally important to keep in mind is that findings of plus factors should typically lead to further investigation as there may be legitimate reasons for a specific conduct or market outcome.

B. Algorithmic Compliance: Compliance by Design

A much more challenging task is identifying specific algorithms or algorithmic features that should or should not be built in, a question that many may have in mind when thinking about compliance by design. But as discussed extensively above, existing AI research has given us many insights. Design features that have been exploited to achieve cooperation include the capability to communicate, use of a planning agent, modified objectives, and potentially other features guided by the answers to the questions posed by *Leader*- and *Builder*-type algorithms.

In the rest of this section, I discuss potential ways to implement compliance by design when we do not necessarily have knowledge about the problematic features beforehand or when it is difficult to isolate the properties that lead to supra-competitive pricing.

¹⁴⁴ Careful implementation of these tools is also critical. For a discussion of some of the analytical pitfalls, see Deng, *supra* note 31.

1. Looking Forward: A Research Proposal

Vezzoso highlighted the significant challenges in programming antitrust law directly into algorithms. She noted that “[p]rogrammers must articulate their objectives as ‘a list of instructions, written in one of a number of artificial languages intelligible to a computer’. . . . The flexibility of human interpretations, meaning the possibility that legal practitioners interpret norms and principles differently and that legal interpretation evolves over time, may conflict with the apparent stiffness of computer language. . . . The degree to which competition law is, or should be, suitable for automation is an interesting yet neglected topic.”¹⁴⁵ Indeed, given how concise the Sherman Act is, most legal scholars, if not all, would agree that turning the Sherman Act into a set of specific if-then type instructions is a tall order, if not outright impossible.

But here is what’s particularly interesting about how *programmable* antitrust laws are: The lack of (traditional) programmability is precisely the problem that modern machine learning and AI technologies are designed to circumvent. Consider the task of automatically recognizing and distinguishing cats and dogs in images. The traditional rule-based computer programming approach would be to enumerate all the physical differences between cats and dogs. But given how many subtle physical differences and similarities there are between cats and dogs, it gets difficult very quickly to improve classification accuracy. The standard (supervised) machine learning approach circumvents this problem by providing a large number of examples that consist of inputs (images) and associated outputs (the “label” describing whether the image is a cat or a dog) to a statistical model. A large number of such examples (i.e., training data) allows the model to search for the most predictive inputs, as well as the best way to map these inputs to the correct output, all without relying on rules that humans must painstakingly write down. This tells us that, perhaps, we also do not need to write down *all* the explicit

¹⁴⁵ Vezzoso, *supra* note 134, at 26.

instructions of antitrust compliance. Fortunately, economists and courts have identified a set of indicators predictive of collusive conduct. These are the plus factors I discussed above in the context of a monitoring approach to antitrust compliance. The question we address in this section is whether these predictors and the algorithms designed to monitor them can contribute *directly* to the design of antitrust-compliant algorithms, and if so, how.¹⁴⁶

Before drawing inspirations from the existing AI literature, we should note that the first step of designing an algorithm is typically to specify its objective function. The most likely objective of a pricing algorithm is to maximize profit. But firms face various constraints when they maximize their profits. They may have limited capital or limited production capacity. There are also regulatory and ethical constraints on a firm's pursuit of profits. Conceptually, antitrust compliance can be thought of as a similar constraint. Therefore, the technical challenge of compliance by design can be seen as one of implementing compliance as a constraint in the training/learning process of the algorithm.

Once we cast the technical challenge in this framework, several strands of AI literature offer inspiration for possible paths forward, allowing one to directly incorporate compliance into the algorithmic design. Intuitively, the so-called actor-critic approach relies on both an *actor* who tries to figure out a strategy that leads to the best outcome (e.g., highest profit) and a *critic* who examines the desirability (e.g., antitrust compliance) of an action dictated by the strategy given the circumstances, and provides the feedback to the actor for adjustment.¹⁴⁷ Generative adversarial networks (GANs), an intuitively similar idea, also draw strength from two algorithms. In this type of model,

¹⁴⁶ As I alluded to earlier, it is important to keep in mind that plus factors/collusive markers are *indirect* proof of collusion and their predictive power typically depends on market facts and other factors.

¹⁴⁷ See, e.g., Kai Arulkumaran et al., *Deep Reinforcement Learning: A Brief Survey*, 34 IEEE SIGNAL PROCESSING MAG. 26 (2017), <https://ieeexplore.ieee.org/abstract/document/8103164>.

while one algorithm tries to generate some content (say, an image), the adversarial algorithm tries to identify it as a computer-generated fake.¹⁴⁸ A compliant pricing algorithm could have a similar actor-critic/adversarial structure in which, as the actor tries to maximize firm profit, the critic could look at a compliance score of a pricing decision taken by the actor and provide feedback so the actor could learn to steer away from problematic actions. The compliance score can take a variety of values to “discipline” the pricing algorithms. For example, the compliance score could be negative (i.e., a penalty) if, given the actions taken, cartel behaviors, such as collusive prices, arise at the end of the training; and the score could be positive if such evidence is absent. More sophisticated scoring methods could consider the strength of the plus factors as shown in the literature.¹⁴⁹ The compliance score may also be explicitly treated as a constraint in the pricing algorithm’s profit maximization problem, as in the statistical literature on regularization methods.¹⁵⁰ In these approaches, the compliance component is an integral part of the algorithm design.

I emphasize that even though these inspirations come from the existing literature, the conjectured approaches are nontrivial deviations from it. There are numerous technical and practical problems to be resolved and some ideas may not ultimately lead to the intended algorithmic behavior I conjectured here. For example, in a standard actor-critic approach, the ultimate objective of the two algorithms is typically the same,

¹⁴⁸ See Ian J. Goodfellow et al., *Generative Adversarial Networks*, (June 10, 2014) (unpublished manuscript), <https://arxiv.org/abs/1406.2661>. Facebook’s AI research director Yann LeCun called adversarial training “the most interesting idea in the last 10 years in [machine learning].” Yann LeCun, QUORA (July 28, 2016), <https://www.quora.com/What-are-some-recent-and-potentially-upcoming-breakthroughs-in-deep-learning>.

¹⁴⁹ See, e.g., Kovacic, et al., 2011, *supra* note 137.

¹⁵⁰ For readers with a technical background, regularization methods are closely related to the concept of “shrinkage.” The basic idea behind this type of approach is to introduce constraints on model parameters. For an example of how regularization may be used to balance different modeling objectives, see Mohammad Taha Bahadori et al., *Causal Regularization*, (Feb. 23, 2017) (unpublished manuscript), <https://arxiv.org/abs/1702.02604>.

whereas in our conjectured application, the critic would adopt a very different objective. Another obvious challenge includes the proper ways of specifying the compliance score. Despite the aspirational nature of this discussion, the key takeaway is that the existing literature offers plausible paths forward for designing compliant pricing algorithms.

C. Explainable AI

Explainable AIs, especially those that can answer *why* and *what-if* questions, are another powerful tool in algorithmic antitrust compliance. To see why, suppose your pricing algorithm is setting a price that you think might be too high. A helpful *what-if* question could be, “What if we lower the price?” or “Would we generate higher immediate profit if we lower the price?” The answer might be, “Based on demand forecasts and our customers’ price elasticity, this is the optimal price we should set,” or “We have no reason to lower our price because we know that the competitor’s algorithm is not going to lower theirs, and we know that because we have determined that this is the best course of action that benefits both of us in the long term,” or even “We should not lower our price because the last time we lowered our price, the competitor started a price war.” Putting aside the question whether or not the last two responses suggest problematic algorithmic conduct, having this knowledge can be extremely helpful.

An AI study published in 2018 titled “Contrastive Explanations for Reinforcement Learning in Terms of Expected Consequences” is a step toward achieving the type of explainability discussed above.¹⁵¹ In the framework of standard reinforcement learning, the researchers of the study developed a method that enables an RL agent to precisely answer the *what-if* questions similar to those we posed above. Another study titled “Explainable Reinforcement Learning Through a Causal Lens,” first published in 2019,

¹⁵¹ J. van der Waa et al., Contrastive Explanations for Reinforcement Learning in Terms of Expected Consequences, 37 IJCAI-18 WORKSHOP ON EXPLAINABLE A.I. (2018) <https://arxiv.org/pdf/1807.08706.pdf>.

proposed yet another approach to answering *why* and *why not* type questions.¹⁵² Suppose we are curious about why the autonomous RL agent takes action A (say, raising prices to \$X), instead of action B (say, setting a lower price of \$Y). The researchers proposed an approach based on the comparison of the action A and the counterfactual action B to answer this *why* question.

It is important to keep in mind that multi-agent learning, the technology relevant to algorithmic collusion, is outside the scope of these particular AI research studies. It is safe to say, however, that it will be only a matter of time until we see progress in that area as well.

D. Other Approaches

Because RL algorithms learn through “trial and error” and are trained not to make the same mistakes and to exploit the correct decisions, even the simple protocol of documenting the learning process of the (pricing) algorithms can be helpful. If an algorithm is able to figure out on its own to use reward and punishment to elicit and sustain tacit collusion after the training phase, then the learning process should reflect that. Specifically, it will reflect how the payoffs changed as the algorithm adopted different actions and how the actions taken by the algorithm changed as a result.¹⁵³

Some AI researchers have also proposed to label algorithms in much the same way as we label the nutrition facts on food items. These labels, or “model cards” as some researchers call them, would give information about the algorithms’ performance characteristics. In the context of ensuring ethical AI, researchers have recommended that

¹⁵² See Prashan Madumal et al., *Explainable Reinforcement Learning through a Causal Lens*, 34 PROCS. AAAI CONF. ON A.I. 2493 (2020), <https://aaai.org/ojs/index.php/AAAI/article/view/5631>.

¹⁵³ This is also related to a point made by Harrington, *supra* note 17, at 20 (“When prices are controlled by an autonomous artificial agent, the firm’s strategy is, in principle, observable. . . . And if one can observe the strategy, then one can determine whether it embodies a reward–punishment scheme, which is the defining feature of collusion, what results in supracompetitive prices, and what should be prohibited.”).

model cards accompanying trained machine learning models provide benchmarked evaluation in a variety of conditions, “such as across different cultural, demographic, or phenotypic groups” and could “also disclose the context in which models are intended to be used, details of the performance evaluation procedures, and other relevant information.”¹⁵⁴ These ideas apply equally to pricing algorithms in an antitrust context. For example, the label for a pricing algorithm could clearly state whether the algorithm is equipped with communication or negotiation capabilities, and whether there is experimental evidence that the algorithm learns to tacitly collude with one another a la Calvano et al (2020).

CONCLUSION

Algorithms are becoming ubiquitous in our society. They are powerful and, in some cases, indispensable tools in today’s economy. In terms of the technology, we do not yet have AI sophisticated enough to, with a reasonable degree of certainty, reach autonomous tacit collusion in most real markets. This does not mean that we should ignore the potential risks. In fact, in their effort to design AIs that can learn to cooperate with each other and with humans for social good, AI researchers have shown that autonomous algorithmic coordination is possible. But there are also several positive takeaways from this research. For example, given the technical challenges, I argue that just like emails leave a trail of evidence when a cartel uses them to coordinate, a similar trail of evidence is likely present when collusive algorithms are being designed. The literature also gives us a good deal of insights about the types of design features and capabilities that could lead to algorithmic collusion. I highlighted the role of algorithmic

¹⁵⁴ Margaret Mitchell et al, Model Cards for Model Reporting 1, FAT* '19: CONF. ON FAIRNESS, ACCOUNTABILITY, & TRANSPARENCY (Jan. 14, 2019), <https://arxiv.org/abs/1810.03993>; see also Julia Stoyanovich & Bill Howe, *Nutritional Labels for Data and Models*, BULL. IEEE COMP. SOC’Y TECH. COMM. DATA ENG’G, 2019, at 13, <http://sites.computer.org/debull/A19sept/p13.pdf>; Julia Stoyanovich, et al, *The Imperative of Interpretable Machines*, 2 NATURE MACH. INTELL. 197 (2019).

communication as a leading example and argued that these known collusive features should raise red flags even if collusion is ultimately reached autonomously by algorithms.

The review of the recent economic literature in this chapter shows that the economic relationship between algorithms and collusion is subtle and likely market- and fact-specific. This makes a broad inference about the risk of algorithmic collusion difficult. Indeed, many have advocated for a prudent antitrust view toward the use of algorithms. Meanwhile, we have also just started seeing experimental evidence that algorithms can learn to collude even without being explicitly designed to do so. While this line of research is still at an early stage and has various limitations, further development in this area will enhance our understanding of the risk of algorithmic collusion. Of course, as Harrington (2019) and others have reminded us, it is always important that we evaluate both the pro- and anticompetitive effects of the algorithms so we do not exert unnecessary chilling effects on technological innovations.¹⁵⁵

Given the lessons from the literature, from a corporate antitrust compliance perspective, it seems prudent for companies considering adopting strategic pricing algorithms to, at a minimum, ask: (1) how the algorithms increase their profitability to make sure that the promised profitability is not achieved through intended collusion, and (2) what information goes into the algorithms to make sure that the algorithms do not provide a back door for competitors to share sensitive information.¹⁵⁶

I also explored the emerging topic of compliance by design, an intuitive yet nontrivial concept. As Vezzoso put it, “competition compliance by design can become an effective tool in the enforcer’s kit only if it is based on open, constructive and ongoing

¹⁵⁵ For example, the interaction between (procompetitive) algorithmic price discrimination and the risks of algorithmic collusion is an important subject that deserves a closer look.

¹⁵⁶ In addition, research on “collusion incubator” and along the lines proposed by Ezrachi and Stucke, *supra* note 67, and Harrington, *supra* note 67, could potentially allow one to “audit” (self-learning) algorithms.

dialogues and exchanges with all interested stakeholders, including the enforcers themselves, firms, computer science experts, designers and providers of algorithms, academia, and consumers. Otherwise, a serious risk is that ‘competition by design’ remains an enticing slogan or, even worse, an ex-ante prophylactic measure.”¹⁵⁷ I attempted to fill some of the gaps identified by Vezzoso by presenting several potential pathways to algorithmic antitrust compliance. But there are many open questions and much to explore. It is my hope that this chapter stimulates more discussions and continued research on this important issue, one that is guaranteed to be increasingly relevant as we march forward in this fourth industrial revolution powered by constant AI advances.

Before closing, I want to highlight some recent economic studies that have identified novel ways in which algorithms could lead to supracompetitive prices. Hansen et al (2020) show that in an oligopolistic market, if demand is relatively deterministic, firms all behave as if they are monopolists (i.e., ignore the impact of competitors’ prices on their own profit) and run price experiments (as a way to determine the best price to charge) using certain algorithms, the resulting prices could be supracompetitive, leading to the concern that firms may willingly and purposefully adopt this mistaken view of market competition. The main intuition behind this result is that by behaving as a monopoly in an oligopolistic environment, firms over-estimate their own price sensitivity, resulting in higher prices. The researchers further show that in their framework, demand uncertainty (i.e., signal-to-noise ratio) is one of the key drivers of their finding: if demand is sufficiently random, then the resulting prices may be close to the competitive level.¹⁵⁸ Brown and MacKay (2019) show that if firms can choose their

¹⁵⁷ Vezzoso, *supra* note 134, at 30.

¹⁵⁸ See Hansen Karsten et al., *Algorithmic Collusion: Supra-Competitive Prices Via Independent Algorithms* 11–12 (CEPR Discussion Paper No. DP14372, 2020), <https://repec.cepr.org/repec/cpr/ceprdp/DP14372.pdf>. See an early but similar result by William L. Cooper, Tito Homen-de-Mello & Anton J. Kleywegt, *Learning and*

pricing frequency, then each firm has a unilateral profit incentive to choose a frequency different from those of their competitors. This again could lead to higher prices. The basic intuition is that “a superior-technology firm commits to ‘beat’ (best respond to) whatever price is offered by its rivals . . . The rivals take this into account, softening price competition.” Obviously, this result is true under their assumptions regardless of whether the price is set by algorithms or humans. But the authors argue that the use of pricing algorithms makes firms’ commitment to respond at given frequencies credible.¹⁵⁹ Finally, Harrington (2020) studies the effect of third-party pricing algorithms on competition. He found the interesting result that “third party design of a pricing algorithm can produce supracompetitive prices even when only one firm in the market adopts the pricing algorithm.” The key insights behind this finding are (1) the third-party’s objective to maximize the expected profit of an adopter and (2) the third-party’s recognition that their algorithm may face itself (i.e., adopted by others) in the market. Intuitively, these considerations lead the third-party developers to design an algorithm in a way that softens competition.¹⁶⁰ Overall, these studies have demonstrated more ways in which algorithms affect pricing well beyond algorithmic collusion of the “cooperate-or-punish” type and will undoubtedly generate additional interest as well as debates in the antitrust community for years to come.

With constant advances in technology and ever-increasing computation power, new ideas will undoubtedly continue to appear, update, and even revolutionize our understanding. I am optimistic that with the research by and collaboration among

Pricing with Models That Do Not Explicitly Incorporate Competition, 63 OPERATIONS RSCH. 1 (2015).

¹⁵⁹ Zach Brown & Alexander MacKay, Competition in Pricing Algorithms 3 (Sept. 14, 2020) (unpublished manuscript), <https://ssrn.com/abstract=3485024>.

¹⁶⁰ Joseph E Harrington Jr., Third Party Pricing Algorithms and The Intensity Of Competition, (June 8, 2020) (unpublished manuscript). For concerns about firms adopting similar algorithms, see, for example, CMA Report, *supra* note 18, at 14 (“if more firms utilize the same pricing algorithm in the same market, it makes it more likely that the market will move to an outcome where prices are higher.”).

antitrust agencies, economists, and computer scientists, we will continue to improve our understanding of the economic underpinnings of algorithmic collusion and be positioned to tackle the associated risks and challenges.

Digital Duty to Deal, Data Portability, and Interoperability

Gus Hurwitz

INTRODUCTION

A “duty to deal” is a remedy commonly supported by advocates of more aggressive antitrust enforcement in the digital economy. The basic concept of a duty to deal is disclosed in its name: a duty to deal would subject dominant firms to a regulatory requirement to do business with a competitor. For example, a monopolist subject to a duty to deal may be required to sell outputs to or purchase inputs from its rivals. The idea of a duty to deal has a long history in industries that are characterized by network effects and economies of scale, such as telecommunications and railroads. For instance, the Kingsbury Commitment was a 1913 antitrust settlement that required AT&T to interconnect its telephone network with those of its rivals;¹ and the 1912 *Terminal Railroad* case required the operators of a railroad “essential facility” to allow competing railroad companies access to that facility.² The purported need for such duties to deal is that industries such as these—and such as the contemporary tech industry—may operate most efficiently (for producers and consumers alike) when organized as monopolies or oligopolies, which limits the viability of competitive entry and margins along which competition is possible. The appeal of an antitrust duty to deal is that the benefits of a dominant firm’s efficient structure may be preserved, and competition facilitated, by allowing competitors to offer their own services while making use of that dominant firm’s infrastructure. This outcome can be hard to realize in practice, however, as the potential of an antitrust duty to deal can create negative incentives for both dominant firms and their actual and potential competitors.

The idea of an antitrust duty to deal has gained traction in the discussion about

¹ The Kingsbury Commitment is discussed *infra*, at notes 49-53 and accompanying text.

² *United States v. Terminal R.R. Ass'n*, 224 U.S. 383 (1912).

so-called “Big Tech” due to the prevalence of network effects in the industry. In principle, the allure of the duty-to-deal remedy in such markets is that it preserves the benefits that result from firms operating at efficient scale while facilitating competition between those firms and other firms that have not obtained such scale. In contrast, in an industry characterized by network effects, producers and consumers alike could be harmed by remedies that reduce the size of or de-densify relevant networks (such as breaking up a firm).

The basic challenge of relying on a duty to deal as an antitrust remedy stems from the very concern that it is meant to address: because the ostensible harms that the duty is meant to address occur in the presence of significant network effects that limit the viability of an efficient competitive market, there is often no market (or other reliable data) available upon which to base the terms of that duty. Merely establishing prices for mandated exchanges is a fraught process—one that, if done poorly, can substantially disrupt a market and ultimately harm consumers. This is especially likely when undertaken by a regulator sympathetic to competitors or unsympathetic to a dominant firm.

As Justice Breyer noted in a case decided while he was a judge on the First Circuit:

[H]ow is a judge or jury to determine a “fair price?” Is it the price charged by other suppliers of the [monopoly] product? None exist. Is it the price that competition “would have set” were the [market] not monopolized? How can the court determine this price without examining costs and demands, indeed without acting like a rate-setting regulatory agency, the rate-setting proceedings of which often last for several years? . . . Must it be [sufficient] for all independent competing firms to make a “living profit,” no matter how inefficient they may be? If not, how does one identify the “inefficient” firms? And how should the court respond when costs or demands change over time, as they inevitably will?³

In this chapter, we discuss the development of the duty to deal doctrine in antitrust law, its application to the digital economy, and proposals for specific duties to deal, such as data portability and interoperability.

³ *Town of Concord v. Boston Edison Co.*, 915 F.2d 17, 25 (1st Cir. 1990).

Part I outlines the development of the duty to deal doctrine in antitrust law. The development of the doctrine in the United States will be compared to that in the European Union. Popular economic justifications for the doctrine and key cases will be explored. Part II then situates this doctrine within the digital economy, focusing on the importance of getting the contours of the doctrine right in that economy. As we shall see, the law and economics of the duty to deal caution against its application to dynamic, digital markets. This will be illustrated by looking at cases where it has been applied. Part III focuses on two specific categories of duties to deal: data portability and interoperability.

I. DUTY TO DEAL IN ANTITRUST LAW

A duty to deal is one of several closely related concepts in antitrust law. It is a remedy to an anticompetitive refusal to deal—most often arising when a dominant firm discontinues a preexisting business relationship with a competitor.⁴ A duty to deal on specific terms may be prescribed as a remedy for a firm that had anticompetitively “raised rivals’ costs.”⁵ The duty can also arise as a consequence of a firm’s product being deemed an “essential facility.”⁶ No matter under which heading the duty arises, the basic

⁴ See, e.g., *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 598 n.23 (1985) (allowing the district court’s injunction requiring the monopolist to deal with its competitor to stand).

⁵ See Willard K. Tom & Gregory F. Wells, *Raising Rivals’ Costs: The Problem of Remedies*, 12 GEO. MASON L. REV. 389 (2003) (explaining the difficulties of fashioning remedies in raising rivals’ costs cases). See also *United States v. Microsoft*, 231 F. Supp. 2d 144 (D.D.C. 2002) (imposing a conduct remedy on remand after the D.C. Circuit vacated the district court’s previous divestiture order).

⁶ See *Terminal Railroad*, 224 U.S. at 392 (“as this was a mere bridge company, it was essential that railroad companies desiring to use it should have railway connections with it on each side of the river”). See also *MCI Commc’ns Corp. v. AT&T*, 708 F.2d 1081, 1132–33 (7th Cir. 1983):

The case law sets forth four elements necessary to establish liability under the essential facilities doctrine: (1) control of the essential facility by a monopolist; (2) a competitor’s inability practically or reasonably to duplicate the essential facility; (3) the denial of the use of the facility to a competitor; and (4) the feasibility of providing the facility.

In the EU context, see Communication from the Commission: Guidance on the Commission’s Enforcement Priorities in Applying Article 82 of the EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings ¶ 78, O.J. (C 45) 7, 18 [hereinafter “EC Guidance”] (“The concept of refusal to supply covers a broad range of practices, such as . . . a refusal to grant access to an essential facility or a network.”). For

characteristics and criticism are largely the same. The discussion below provides a brief overview of the understanding of this duty in both the U.S. and Europe, along with a discussion of the Supreme Court's error-cost analysis of duties to deal in the *Trinko* case.

A. The United States

In the United States, as “a general matter” antitrust law does not require a business to deal with a rival.⁷ As far back as 1919, the Supreme Court said that “[i]n the absence of any purpose to create or maintain a monopoly, the [Sherman Act] does not restrict the long recognized right of [a] trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal.”⁸

There have arisen some notable exceptions to this right, however. In *Lorain Journal Co. v. United States*,⁹ the Supreme Court held a newspaper liable under the antitrust laws for refusing to sell advertising to those who patronized a radio station that was its rival in the “mass dissemination of [] news and advertising.”¹⁰ In *Otter Tail Power Co. v. United States*,¹¹ the Supreme Court held a power company liable under a duty to deal theory, noting that it refused to sell wholesale to municipal power systems “solely to prevent municipal power systems from eroding its monopolistic position.”¹² And in *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, the leading American case invoking a duty to deal, the Supreme Court held a ski resort liable for ending a profitable business partnership

more on the Essential Facilities Doctrine, see Tad Lipsky, *The Essential Facilities Doctrine*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁷ See *Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408 (2004).

⁸ *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919).

⁹ 342 U.S. 143 (1951).

¹⁰ *Id.* at 153.

¹¹ 410 U.S. 366 (1973).

¹² *Id.* at 378.

selling joint passes with another ski resort.¹³

In these cases, the Court deemed it important that there seemed to be no valid business justification for refusing to deal with rivals. As the Court more recently noted in *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, these cases emphasized the importance of the defendant having ended a “voluntary (*and thus presumably profitable*) course of dealing” ostensibly in order to harm its rivals.¹⁴ This termination of a course of dealing that had presumably been profitable at a prior time suggests “a willingness to forsake short-term profits to achieve an anticompetitive end.”¹⁵

The *Trinko* Court found *Aspen Skiing* and similar cases to be “at or near the outer boundary of [Sherman Act] § 2 liability.”¹⁶ There the Court held Verizon did *not* have an antitrust duty to interconnect with rivals, particularly in light of the highly regulated nature of the telecommunications industry. The Court found that “the defendant’s prior conduct sheds no light upon the motivation of its refusal to deal” due to the regulatory mandates Verizon was subject to under the Communications Act.¹⁷ Absent a prior history of voluntary dealing, and in light of the regulatory backstop of the Communications Act (which created regulatory duties to deal), the Court was unwilling to impose an antitrust duty to deal.

Collectively, these cases outline the general contours of the duty to deal in American antitrust law. The cases support the proposition that foregoing a prior voluntary course of conduct is the strongest evidence that may suggest an

¹³ See *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 609–11 (1985).

¹⁴ *Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 409 (2004) (emphasis in original).

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.* See also *id.* (“In *Aspen Skiing*, the defendant turned down a proposal to sell at its own retail price, suggesting a calculation that its future monopoly retail price would be higher. Verizon’s reluctance to interconnect at the cost-based rate of compensation available under § 251(c)(3) tells us nothing about dreams of monopoly.”).

anticompetitive refusal to deal. Some commentators argue for broader tests to establish an antitrust duty to deal; for example, a “no economic sense” test or identification of foregone profits.¹⁸ Both of these approaches—which generally have not been embraced by the courts—attempt to get at the question identified in *Aspen Skiing*—whether, but for anticompetitive intent, a firm would have refused to deal with a rival. But these tests fail to get at the question whether a firm would *voluntarily* continue to deal on given terms. By focusing on purely *economic* sense or profitability, they fail to capture the business judgements and qualitative assessments that are often at the heart of the competitive enterprise.

B. The European Union

The approach to the duty to deal differs in the European Union. There, the “essential facilities” doctrine allows for broader application of a duty to deal for dominant firms. For instance, the European Commission’s guidance document on the application of Article 102 (previously Article 82) reads:

The concept of refusal to supply covers a broad range of practices, [including] a refusal to grant access to an essential facility or a network.

The Commission does not regard it as necessary for the refused product to have been already traded: it is sufficient that there is demand from potential purchasers and that a potential market for the input at stake can be identified. Likewise, it is not necessary for there to be actual refusal on the part of a dominant undertaking; ‘constructive refusal’ is sufficient. Constructive refusal could, for example, take the form of unduly delaying or otherwise degrading the supply of the product or involve the imposition of unreasonable conditions in return for the supply.

Finally, instead of refusing to supply, a dominant undertaking may charge a price for the product on the upstream market which, compared to the price it charges on the downstream market, does not allow even an equally efficient competitor to trade profitably in the

¹⁸ See Gregory J. Werden, *Identifying Exclusionary Conduct Under Section 2: The “No Economic Sense” Test*, 73 ANTITRUST L.J. 413 (2006) (arguing for a “no economic sense” test); A. Douglas Melamed, *Exclusionary Conduct Under the Antitrust Laws: Balancing, Sacrifice, and Refusals to Deal*, 20 BERKELEY TECH. L.J. 1247 (2005) (arguing for a “profit sacrifice” test).

downstream market on a lasting basis (a so-called ‘margin squeeze’).¹⁹

The EC’s Guidance also sets out three criteria for determining when a refusal to deal becomes an abuse of dominance:

1. The refusal relates to a product or service that is objectively necessary to be able to compete effectively on a downstream market (“indispensability”);
2. The refusal is likely to lead to the elimination of effective competition on the downstream market (“elimination of competition”); and
3. The refusal is likely to lead to consumer harm (“consumer harm”).²⁰

The EU’s approach to monopolization would likely find liability in many situations where the US approach would not.²¹ In duty to deal cases, the EU requires neither an actual refusal to deal nor an end to a voluntary course of dealing, as in *Aspen* and *Trinko*.

The EU’s approach to a “margin squeeze” is also different than US law. As a contrasting example, take *Pacific Bell Telephone Co. v. linkLine Communications, Inc.*,²² where the Supreme Court held that in the absence of either a duty to deal under *Aspen* or predatory pricing under *Brooke Group*, there is no basis for a price squeeze theory under Section 2 of the Sherman Act. US law rejects a margin squeeze theory while the EU embraces it.

C. The Errors Costs of Duties to Deal

The economic argument for limiting the duty to deal is based upon the costs of

¹⁹ EC Guidance at ¶¶ 78–80.

²⁰ *Id.* at ¶ 81.

²¹ See Alden Abbott, *A Brief Comparison of European and American Antitrust Law*, 9–13 (Univ. of Oxford Competition Law & Policy Guest Lecture Programme, Paper (L) 02/05, 2005), https://www.law.ox.ac.uk/sites/files/oxlaw/ccdp_1_02-05.pdf (noting the differences in approach between the EU and the US on monopolization cases).

²² 555 U.S. 438 (2009).

getting it wrong. In a seminal article, Judge Frank Easterbrook argued antitrust law should seek to minimize the sum of error and decision costs in order to maximize consumer welfare and reduce the likelihood of self-defeating antitrust interventions.²³ The relevant costs include the costs of sanctioning violations when the conduct did not harm competition, known as “false positives”; the costs of failing to sanction violations when the conduct did harm competition, known as “false negatives”; and the costs of the legal process itself.²⁴ The EU’s competition law jurisprudence seeks to avoid false negatives and condemns ambiguous conduct so as to avoid the harms of monopolization.²⁵ US law, on the other hand, requires greater caution when intervening in markets than the EU. More aggressive intervention risks false positives that may make pro-competitive conduct illegal and thereby deter it, while the false negatives that may result from less aggressive enforcement can be self-correcting over time through ordinary competition (particularly given that supra-competitive profits possible in non-competitive markets can invite entry) and that continued anticompetitive conduct will invite further subsequent litigation.²⁶ Costs of the legal process include not only the costs

²³ See Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1 (1984).

²⁴ *Id.* at 16 (“The legal system should be designed to minimize the total costs of (1) anticompetitive practices that escape condemnation; (2) competitive practices that are condemned or deterred; and (3) the system itself.”). For more on the error cost framework, see Geoffrey A. Manne, *Error Costs in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

²⁵ See *Comparative Look at Competition Law Approaches to Monopoly and Abuse of Dominance in the US and EU: Hearing Before the S. Comm. on Antitrust, Competition Pol’y, & Consumer Rights* (2018) (Statement of Geoffrey Manne, President, International Center for Law & Economics), <https://laweconcenter.org/wp-content/uploads/2018/12/Geoffre-A-Manne-Testimony-Why-US-Antitrust-Law-Should-Not-Emulate-European-Competition-Policy-2018-12-19.pdf> (“The EU’s ‘precautionary principle’ approach is the antithesis of [the US approach]. It is rooted in a belief that markets do not—or, more charitably, are unlikely—to function well in general, and certainly not sufficiently to self-correct in the face of monopolization.”).

²⁶ See Easterbrook, *supra* note 23, at 15 (“In which direction should these rules err? For a number of reasons, errors on the side of excusing questionable practices are preferable . . . the economic system corrects monopoly more readily than it corrects judicial errors . . . A practice once condemned is likely to stay condemned, no matter its benefits. A monopolistic practice wrongly excused will eventually yield to competition, though, as the monopolist’s higher prices attract rivalry.”).

of litigation, but the costs of decision-making by the courts and the costs of enforcement.²⁷

The Roberts Supreme Court has largely incorporated this framework into antitrust analysis.²⁸ For instance, the Court recently ruled that antitrust should consider both sides of a two-sided market together because “[a]ny other analysis would lead to ‘mistaken inferences’ of the kind that could ‘chill the very conduct the antitrust laws are designed to protect.’”²⁹ In reaching this conclusion, the Court cited *Matsushita* (noting that “we must be concerned lest a rule or precedent that authorizes a search for a particular type of undesirable pricing behavior end up by discouraging legitimate price competition”) and *Leegin* (noting that courts should avoid “increas[ing] the total cost of the antitrust system by prohibiting procompetitive conduct the antitrust laws should encourage”).³⁰ This line of cases makes clear the court’s ongoing concern with minimizing error costs.

The Court has found the error cost framework particularly important with respect to the duty to deal, most explicitly in *Trinko*. There the Court started its economic analysis by noting:

The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system. The opportunity to charge monopoly prices—at least for a short period—is what attracts “business acumen” in the first place; it induces risk taking that produces innovation and economic growth. To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive conduct.

²⁷ See *id.* at 12–13 (on litigation costs: “The higher the stakes, the more firms are willing to spend on discovery and litigation. The marginal week of discovery or trial just might mean saving a few millions or tens of millions of dollars. Litigation costs are the product of vague rules combined with high stakes, and nowhere is that combination more deadly than in antitrust litigation under the Rule of Reason.”); *id.* at 12 (on costs of decision-making and enforcement: “Judges and justices rightly protest that courts cannot make these judgments. Of course judges cannot do what such open-ended formulas require. When everything is relevant, nothing is dispositive. Any one factor might or might not outweigh another, or all of the others, in the factfinder’s contemplation.”).

²⁸ See Thomas A. Lambert & Alden F. Abbott, *Recognizing the Limits of Antitrust: The Roberts Court Versus the Enforcement Agencies*, 11 J. COMPETITION L. & ECON. 791 (2015) (examining the Roberts Court’s antitrust jurisprudence).

²⁹ *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018).

³⁰ *Id.*

Firms may acquire monopoly power by establishing an infrastructure that renders them uniquely suited to serve their customers. Compelling such firms to share the source of their advantage is in some tension with the underlying purpose of antitrust law, since it may lessen the incentive for the monopolist, the rival, or both to invest in those economically beneficial facilities. Enforced sharing also requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing—a role for which they are ill suited. Moreover, compelling negotiation between competitors may facilitate the supreme evil of anti-trust: collusion.³¹

The Court then weighed the “slight benefits of antitrust intervention” against a “realistic assessment of its costs.”³² The Court noted the especially costly nature of “[m]istaken inferences and the resulting false condemnations” that chill the pro-competitive conduct antitrust is designed to protect.³³ But the Court also noted that even if there were no false positives, the enforcement costs would be very high in duty to deal cases because “[e]ffective remediation of violations of regulatory sharing requirements will ordinarily require continuing supervision of a highly detailed decree”;³⁴ this is not something antitrust courts are equipped to do. In other words, the *Trinko* Court considered the error and enforcement costs of imposing a duty to deal in circumstances where the underlying conduct is ambiguous as to consumer welfare.

The alleged harms that result from a monopolist’s refusal to deal are economically very similar to the harm from raising rivals’ costs. Often, claims of refusal to deal concern vertical arrangements in which an upstream monopolist that also competes downstream is charged with an antitrust violation by downstream rivals that rely on the upstream monopoly.³⁵ But as the Court recognized in *Trinko*, an upstream provider may have become a purported monopolist “by establishing an infrastructure that renders them

³¹ *Trinko*, 540 U.S. at 407–08 (emphasis in original).

³² *Id.* at 414.

³³ *Id.* (citing *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 594 (1986)).

³⁴ *Id.* at 414–15.

³⁵ See, e.g., *Pac. Bell Tel. Co. v. linkLine Commc’ns, Inc.*, 555 U.S. 438 (2009) (adjudicating and rejecting such a “price squeeze” theory of antitrust liability).

uniquely suited to serve their consumers.”³⁶ But where this is the case, the *Alcoa* exhortation cautions that “The successful competitor, having been urged to compete, must not be turned upon when it wins”³⁷ lest we find that “[c]ompelling such firms to share the source of their advantage . . . lessen[s] the incentive for the monopol[ist], the rival, or both to invest in those socially beneficial facilities.”³⁸

In sum, antitrust law in the United States presumptively allows market participants, even monopolists, to choose whether and on what terms it will deal with rivals. The exception is if a monopolist sacrifices profits by giving up a voluntary course of dealing, because this would show that its intent must be to harm competition. The error cost decision framework of law and economics explains why avoiding false positives through this type of lenient rule will minimize harm to consumer welfare.

II. DUTY TO DEAL IN THE DIGITAL ECONOMY

The duty to deal has the potential to be a very important doctrine in the digital economy because many Big Tech companies have created infrastructure that competitors rely upon.³⁹ Big Tech firms also often compete in those markets they create. For instance, Google has both a search engine and Google Shopping.⁴⁰ Amazon created a marketplace for third-party sellers but also sells some products under its own label.⁴¹ And Apple has

³⁶ *Trinko*, 540 U.S. at 407–08.

³⁷ 148 F.2d 416,430 (2d Cir. 1945).

³⁸ *Trinko*, 540 U.S. at 407–08.

³⁹ See, e.g., Online Platforms and Market Power, Part 6: Examining the Dominance of Amazon, Apple, Facebook, and Google: Hearing Before the Subcomm. Antitrust, Commercial, and Administrative Law (Jul. 29, 2020), <https://judiciary.house.gov/calendar/eventsingle.aspx?EventID=3113>.

⁴⁰ See Charley Connor, *Google Battles EU Over Legality of Self-Preferencing*, GLOBAL COMPETITION REV. (Feb. 12, 2020), <https://globalcompetitionreview.com/article/1214488/google-battles-eu-over-legality-of-self-preferencing>.

⁴¹ See Randal C. Picker, *Breaking up Amazon? Platforms, Private Labels and Entry*, TRUTH ON THE MARKET (Jul. 17, 2019), <https://truthonthemarket.com/2019/07/17/breaking-up-amazon-platforms-private-labels-and-entry/>.

its App Store and its own apps.⁴² There are fears that if these platforms decided they did not want to deal with rivals anymore, competition would be harmed.⁴³

But application of duty to deal jurisprudence also comes with unique challenges. Its interactions with intellectual property and industry standards, network effects, barriers to entry, lock-in, and switching costs all require analysis.

A. A Historical Perspective: AT&T's One System Policy

Colgate (1919) is generally viewed as the first American case relating to an antitrust duty to deal. The concept, however, is older and can be seen, for instance, in the telephone and railroad industries. Both industries have long been viewed as natural monopolies where it is often more desirable to have a single network offering service to all users than to have multiple networks.

Arguably the most important event in the history of AT&T—and the history of American telecommunications—was Theodore Vail's emergence from retirement in 1907 to become the president of the company. At the time, AT&T was in dire financial condition due to growing competition from rival local telephone companies. At the time, it was not uncommon for cities and towns to have two local telephone companies whose networks were not interconnected,⁴⁴ meaning that a customer on AT&T's network could not call a customer on a rival network.

Vail responded to this competition bluntly: he decreed that AT&T would no longer

⁴² See Ben Sperry, *Does Apple's "Discrimination" Against Rival Apps in the App Store Harm Consumers?*, TRUTH ON THE MARKET (Oct. 16, 2019), <https://truthonthemarket.com/2019/10/16/does-apples-discrimination-against-rival-apps-in-the-app-store-harm-consumers/>.

⁴³ See *infra* nn. 86-100 and accompanying text.

⁴⁴ See Richard Gabel, *The Early Competitive Era in Telephone Communication, 1893–1920*, 34 LAW & CONTEMP. PROBS. 340, 345 (1969) ("The rise of the independent companies resulted in a substantial amount of service competition during this period. Out of 1,051 U.S. cities with a 1902 population greater than 4,000, 1,002 had telephone facilities. The independents provided exclusive service in 137 of these and Bell in 414; the remaining 451 communities—almost half—received service from two or more companies.") (citing BUREAU OF THE CENSUS, TELEPHONES AND TELEGRAPHS (1902)).

compete in these markets. Rather, it would either buy its rivals or exit the market.⁴⁵ It simply didn't make sense to have multiple, competing, non-interconnected networks. This transition culminated in what became AT&T's central operating policy, and also the policy that has defined American telecommunication for the past 100 years: "universal service," or the idea that anyone on any telephone network should be able to call anyone on any other telephone network. This gave rise to AT&T's credo, adopted in its 1910 Annual Report: *One System, One Policy, Universal Service*.⁴⁶

In order to realize this vision, AT&T began standardizing its telephone equipment across all the local markets in which it operated. As it purchased competing carriers, it transitioned them to its standardized technology; and as it exited markets where it chose to forego competition, it refused to connect (that is, it refused to deal with) competing networks. AT&T rapidly grew in market share and its competitors rapidly lost share.⁴⁷ This led AT&T's competitors to turn to the Department of Justice with antitrust complaints in 1911, and the government to file an antitrust suit against AT&T in 1913.⁴⁸

⁴⁵ See *id.* ("In 1907 the Baker-Morgan banking interests gained control of the Bell System and replaced President Frederick Fish with Theodore Vail. Vail substantially reversed a number of Bell policies, emphasizing absorption of the competition in preference to the earlier policy of expansion of Bell-constructed facilities. This change in emphasis resulted in a rapid diminution in the independents' proportion of total industry telephones. The decline continued until the independents' share reached its present ratio of about fifteen per cent.")

⁴⁶ See ANNUAL REPORT OF THE DIRECTORS OF AMERICAN TELEPHONE AND TELEGRAPH COMPANY TO THE SHAREHOLDERS (1910). See also AT&T, *Milestones in AT&T History*, AT&T (2008), https://web.archive.org/web/20080522110342/http://www.corp.att.com/history/milestone_1908.html.

⁴⁷ See Gabel, *supra* note 44, at 352 ("With the curtailment of its own rate of internal expansion, the Bell System, beginning in 1907, launched an aggressive program of acquiring independent telephone properties. The effect of this change in policy is demonstrated by the shift in the ratio of telephones between the two segments of the industry. In 1907 the independents owned 3.0 million stations, while Bell owned 3.1 million. By 1912, there were 3.6 million independent stations and 5.1 million Bell stations.").

⁴⁸ See *id.* ("Bell's acquisition attempts were strongly resisted by the independents, who made complaint to the Attorney General, George Wickersham. They were joined in charging antitrust violations by the Postal Telegraph-Mackay interests, because the Bell System had earlier succeeded in acquiring control of Western Union Telegraph Company, and the physical consolidation of Bell System and Western Union properties threatened to undercut Postal Telegraph markets.").

This suit established one of the most important duties to deal in American history—albeit through a settlement instead of a judicial opinion. In late 1913, in order to avoid litigation, AT&T entered into what is known today as the Kingsbury Commitment.⁴⁹ In this commitment AT&T agreed, among other things, both to stop buying competing telephone companies without government approval and to allow those companies to connect their telephone networks to its network.⁵⁰ That is, AT&T agreed to a duty to deal with its rivals.

This duty to deal—which was later enshrined in the Communications Act of 1934⁵¹ and became a core element of the 1996 Telecommunication Act's⁵² vision of facilitating competition in the telephone industry—was only the beginning of AT&T's duty to deal saga. The subsequent century can be understood in terms of the government's attempt to implement this duty to deal. During the midcentury years, AT&T's regulated monopoly status meant struggles on the one hand to set prices charged to consumers (because AT&T had a regulatory duty to deal with all consumers, offering service even to those on which it lost money, in exchange for which it was allowed to charge other consumers more than it would in a competitive market). And on the other hand, these regulated prices necessitated government regulation of how AT&T dealt with its competitors in adjacent markets.⁵³

⁴⁹ *Id.* (“As a result of these complaints, AT&T vice-president N. C. Kingsbury met with the Attorney General and later in 1913 drafted an agreement which became known as the Kingsbury Commitment.”).

⁵⁰ See Letter of N.C. Kingsbury, Vice President of AT&T, to the Attorney General of the United States (Dec. 19, 1913), <https://www.washingtonpost.com/blogs/the-switch/files/2013/12/KC1-NC-Kingsbury-VP-of-ATT-letter-to-AG.pdf>.

⁵¹ Communications Act of 1934, Pub. L. 97-259, 48 Stat. 1064 (codified at 47 U.S.C. § 151).

⁵² Telecommunications Act of 1996, Pub. L. 104-104, 49 Stat. 1526 (1996).

⁵³ For instance, telephone switches grew increasingly computerized at the same time as the computer industry was still a fledgling. This created challenges for the FCC in how to attribute AT&T's R&D costs. These costs were related to both its regulated telephone business and its efforts to enter the unregulated market for competitive computer services. Attributing R&D costs associated with entry into the competitive computer services market to its telephone business (which received a regulatorily-guaranteed rate of return) could give AT&T an anti-competitive advantage in the unregulated computer market. The FCC

This entire era is best described as “a mess,”⁵⁴ as courts and regulators tried to establish rates, address AT&T’s use of regulated rates to move into adjacent industries,⁵⁵ and address AT&T’s refusals to deal with competitors,⁵⁶ all of which led to the antitrust case breaking up AT&T in 1984.⁵⁷ But the Incumbent Local Exchange Operators (“ILECs”) coming out of the broken-up AT&T still were governed by state regulatory duties to deal, which were only more complicated post-break-up as regulators had to design and implement a system of explicit cross subsidies between independent telephone companies that had previously been calculated implicitly by internalizing duties to provide service within that AT&T monopoly.⁵⁸

The mess worsened with the passage of the 1996 Telecommunications Act, which

struggled with these issues in the *Computer Inquiries*. See *In re Regulatory & Policy Problems Presented by the Interdependence of Computer and Communication Services & Facilities (First Computer Inquiry)*, Notice of Inquiry, 7 FCC 2d 11, (1966); *Amendment of Section 64.702 of the Commission’s Rules and Regulations (Second Computer Inquiry)*, Docket No. 20828, Final Decision, 77 FCC 2d 384 (1980).

⁵⁴ See, e.g., James Chen, *Price-Level Regulation and its Reform*, 99 MARQ. L. REV. 931, 931 (2016) (stating “Conventional rate-of-return regulation richly deserves its derogatory reputation as ‘the most speculative undertaking . . . in the history of Anglo-American jurisprudence.’”).

⁵⁵ See generally *Computer Inquiries*, *supra* note 53. AT&T’s “predatory cross-subsidization” between its regulated telephone business and adjacent businesses was one of the focuses of the 1982 suit that led to the break-up of AT&T in 1984. See *United States v. AT&T*, 552 F.Supp. 131 (D.D.C. 1982). The resolution of this case was a settlement known as the Modified Final Judgement (MFJ), which was itself a modification of the settlement reached in the 1956 litigation involving AT&T’s efforts to leverage its regulated telephone business to compete in the unregulated computer industry. See *United States v. Western Elec. Co.*, Civil Action No. 17-49 (1956).

⁵⁶ See Joseph Farrell & Philip J. Weiser, *Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust in the Internet Age*, 17 HARV. J.L. TECH. 85, 93–95 (2003) (discussing the cases of Hush-A-Phone, Carterfone, and MCI, all of whom the United States compelled AT&T to allow network access).

⁵⁷ See Andrew Pollack, *Bell System Breakup Opens Era of Great Expectations and Great Concern*, N.Y. TIMES, Jan. 1, 1984, § 1, at 12.

⁵⁸ The FCC, for instance, began to transition from Rate of Return rate regulation to price cap regulation, partially in order to force AT&T to deal with its competitors on more market-based terms. This, however, prompted significant concerns about decline in telephone service quality in the 1980s. In addition, the FCC now had to make once-implicit cross-subsidies explicit to cover AT&T’s obligation to provide service to all customers, including at a loss, which required assigning dollar values —that cannot easily meaningfully be calculated—to these transactions.

required that the ILECs provide access to individual pieces of their networks (Unbundled Network Elements, or UNEs), and allow interconnection between their networks, on regulated terms and at regulated prices.⁵⁹ The 1996 Telecom Act was the greatest experiment in a regulatory duty to deal ever undertaken. Its primary result was over a decade of litigation as the FCC and courts struggled to define what elements of an ILEC's network constituted UNEs that had to be offered under the terms of the Act,⁶⁰ and the terms under which they had to be offered.⁶¹

The lesson of this history is simply that it is far easier to establish that there is a “duty to deal” than it is to define what that duty actually entails. Telling a firm that it needs to deal with a competitor does not tell us the pricing, quality, or any other terms of those deals. And, as then-Judge Breyer noted in the quotation near the opening of this chapter, the duty-to-deal remedy is most likely adopted in response to monopolization. As he asked, “How can the court determine this price without examining costs and demands, indeed without acting like a rate-setting regulatory agency, the rate-setting proceedings of which often last for several years?” AT&T's history extends this rhetorical question by asking whether even those rate-setting proceedings, working prospectively, often fail to effectively establish the contours of a duty to deal. If a rate-setting agency, aided by substantial expertise and resources devoted to the regulation of a single firm, has such difficulties implementing a duty to deal, how fraught must be the enterprise for a generalist antitrust court?

⁵⁹ See Doug Dawson, President, CCG Consulting, *Eliminating Unbundled Network Elements (UNEs)*, POTs & PANs (May 30, 2018), <https://potsandpansbyccg.com/2018/05/30/eliminating-unbundled-network-elements-unes/>, for a description of UNEs and their utility to non-facilities-based telecom providers.

⁶⁰ *AT&T v. Iowa Util's Bd.*, 525 U.S. 366 (1999); *United States Telecom Ass'n v. FCC*, 359 F.3d 554 (D.C. Cir., 2004). Rejecting challenges to the FCC fourth order attempting to implement the 1996 Act's UNE requirements, the D.C. Circuit noted that “Because we conclude the Commission's fourth time is a charm, we deny all petitions for review.” *Covad Commc'n Co. v. FCC*, 450 F.3d 528 (D.C. Cir. 2006).

⁶¹ *Verizon Commc'n Inc. v. FCC*, 535 U.S. 467 (2002).

B. Current Perspectives in US Antitrust Law: FTC v. Qualcomm & Viamedia v. Comcast

The complicated application of rules from *Aspen* and *Trinko* in digital markets has at times confounded courts. For instance, the District Court for Northern District of California in *FTC v. Qualcomm* held that Qualcomm had a duty to deal with rival chipmakers.⁶² The District Court was then overturned by the Ninth Circuit Court of Appeals.⁶³

That case dealt with a situation where Qualcomm's patented technology was chosen by a standard developing organization (SDO) for use in the creation of interoperable chips for cell phones.⁶⁴ The FTC alleged, among other things, that Qualcomm had a duty to sell licenses for its chips, for which it held standard-essential patents (SEP), to other members of the SDO, including rival chipmakers, on fair, reasonable, and non-discriminatory terms (FRAND).⁶⁵ Though Qualcomm did not assert its patents against rival chipmakers, it also did not sell licenses on a per-chip basis, instead selling licenses to device makers (OEMs) only at the handset level.⁶⁶

The District Court for the Northern District of California ruled Qualcomm had a duty to deal because it had, some 20 years prior, sold licenses for chips to rivals.⁶⁷ As a

⁶² *FTC v. Qualcomm Inc.*, 411 F. Supp. 3d 658, 751 (N.D. Cal. 2019) [hereinafter "QC DC Opinion"].

⁶³ *FTC v. Qualcomm Inc.*, No. 19-16122 (9th Cir. Aug. 11, 2020), <https://cdn.ca9.uscourts.gov/datastore/opinions/2020/08/11/19-16122.pdf> [hereinafter "QC 9th Cir. Opinion"].

⁶⁴ *QC DC Opinion*, 411 F. Supp. at 671–72.

⁶⁵ *See id.* at 671 (citing *FTC v. Qualcomm*, No. 17-CV-00220-LHK, 2018 WL 5848999, at *3 (N.D. Cal. Nov. 6, 2018) ("a SEP holder must commit to TIA that: "A license under any Essential Patent(s), the license rights which are held by the undersigned Patent Holder, will be made available to all applicants under terms and conditions that are reasonable and nondiscriminatory."); *id.* at 758–61 (holding that Qualcomm has a duty to deal after applying the *Aspen* factors).

⁶⁶ *See id.* at 673 ("At some point, Qualcomm stopped licensing rival modem chip suppliers and instead started licensing only OEMs at a 5% running royalty on the price of each handset sold. These licenses are called Subscriber Unit License Agreements ("SULA").").

⁶⁷ *See id.* at 760:

Licensing rivals was also profitable for Qualcomm, as Qualcomm received royalties on patent licenses to modem chip suppliers. In a 1999 email, Steve Altman (then a Qualcomm lawyer, later Qualcomm

remedy, the District Court imposed a duty to deal, requiring that Qualcomm sell chips on FRAND terms to rival chipmakers.⁶⁸

Interoperable networks for cell phones give rise to network effects. Among the benefits of having SDOs is the availability of chips that enable a cell phone to communicate with any other phone, on any network. SDOs must balance encouraging innovators to join the organization, which involves ex ante incentives to invest in patented technology that could be chosen as the standard, and policing abusive market power that may arise ex post if patented technology is chosen as the standard.⁶⁹ FRAND

President) stated to Marv Blecker (QTL Senior Vice President) that Qualcomm had licensed modem chip suppliers: “ASIC licensees pay royalties to QUALCOMM at 3% with no minimum dollar amount.” CX8177-001.

However, Qualcomm voluntarily stopped licensing its rivals. Eric Reifschneider (QTL Senior Vice President and General Manager) told the IRS that Qualcomm no longer licensed its rivals: “We don’t collect license fees or royalties at—for chip sets, and we haven’t done so for some time now.” CX6786R at 15:9-11. Later in the IRS meeting, Reifschneider again emphasized that Qualcomm voluntarily stopped licensing its rivals: “So we’d gotten to the point where we decided you know what? We’re not even going to try to collect license fees and royalties from guys who make chips.” Id. at 32:14-16.

Thus, because Qualcomm previously licensed its rivals but voluntarily terminated that practice even though it was profitable, the Court concludes that Qualcomm voluntarily terminated a profitable course of dealing, and that the first factor relevant to the antitrust duty to deal is present in this case.

⁶⁸ See *id.* at 821 (“Qualcomm must make exhaustive SEP licenses available to modem-chip suppliers on fair, reasonable, and non-discriminatory (“FRAND”) terms and to submit, as necessary, to arbitral or judicial dispute resolution to determine such terms.”).

⁶⁹ See Dirk Auer & Julian Morris, *Governing the Patent Commons*, at 19 (ICLE Intellectual Property & Licensing Research Program, White Paper 2019-No. 1, 2019), <https://laweconcenter.org/wp-content/uploads/2019/08/Auer-Morris-Governing-the-Patent-Commons.pdf>:

[A] critical challenge for SDOs is to ensure that their internal regulations remain “incentive compatible”. To maximize their technological output, SDOs must attract the right mix of implementers and innovators. They thus need to design internal procedures that strike a balance between the sometimes diverging interests of these stakeholders. This is no simple task. Although there are numerous ways in which these rules may favor a particular group of participants, allocating the profits of standardization is perhaps the most the most [sic] salient. To a first approximation, SEP holders will tend to favor internal rules that allow them to charge prices which are close to the monopoly benchmark (though not the double marginalization one). Conversely, implementers will generally prefer policies that limit the returns of SEP holders (so long as this does not dry up the supply of inventions).

See also, Joanna Tsai, *Standard Setting Organizations, Intellectual Property, and Standardization: Fundamentals and Recent Proposals*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

obligations are designed to prevent “patent hold-up,” by which SEP holders can extract a larger royalty from implementers.⁷⁰ But if reviewing courts reduce royalties to SEP holders too far, there the reverse problem of “patent hold-out” could arise as innovators have reduced incentives to pay for a license or even to join the SDOs that make patented technology available to them.⁷¹

The FTC dropped its duty to deal argument in its brief in the Ninth Circuit.⁷² The FTC was forced to concede the District Court got the duty to deal analysis wrong, in large part because its own factual findings did not support the legal conclusion that Qualcomm had a duty to deal.⁷³

The Ninth Circuit analyzed the District Court’s factual findings under the *Aspen* standards. First, it found that Qualcomm did not terminate a voluntary and profitable course of dealing since Qualcomm had last entered into a non-exhaustive license agreement in 1999,⁷⁴ before it had market power, and due to changes in patent law had

⁷⁰ For an introduction to patent hold-up, see, for example, Thomas F. Cotter, Erik Hovenkamp, & Norman Siebrasse, *Demystifying Patent Holdup*, 73 WASH. & LEE L. REV. 1501, 1517–29 (2019); Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 1993 (2007).

⁷¹ See generally Richard A. Epstein & Kayvan B. Noroozi, *Why Incentives for Patent Holdout Threaten to Dismantle FRAND, and Why it Matters*, 32 BERKELEY TECH. L. J. 1381 (2018) (discouraging an “implementer-centric view of FRAND’s origins and purposes”). See also Gerard Llobet & Jorge Padilla, *Should Patent Hold-Out Concerns Trump Patent Hold-Up Misgivings?*, TRUTH ON THE MARKET (Jul 18, 2019), <https://truthonthemarket.com/2019/07/18/should-patent-hold-out-concerns-trump-patent-hold-up-misgivings/> (arguing that holdout should be taken more seriously by antitrust authorities).

⁷² See Br. of FTC, (Nov. 22, 2019), https://www.ftc.gov/system/files/documents/cases/144_2019_11_22_ftc_answering_brief.pdf at 30 (“The FTC does not argue that Qualcomm has a duty to deal with its rivals under the heightened Aspen/Trinko standard.”); see *id.* at 69 (“The FTC does not argue that Qualcomm has a duty to deal with its rivals under the heightened Aspen/Trinko standard.”).

⁷³ See Geoffrey Manne & Ben Sperry, *Why the FTC had to Abandon the Duty to Deal Argument Against Qualcomm*, TRUTH ON THE MARKET (Jan. 16, 2020), <https://truthonthemarket.com/2020/01/16/why-the-ftc-had-to-abandon-the-duty-to-deal-argument-against-qualcomm/>

⁷⁴ These “non-exhaustive” license agreements were intended to allow rivals to use their patented technology without being able to transfer those rights to the handset makers. See QC 9th Cir. Opinion, at 14 n.7 (“Previously, in the 1990s, Qualcomm provided ‘non-exhaustive licenses’ to rival chip suppliers, charging a royalty rate on their chipset sales. QC DC Opinion at 754. (According to Qualcomm, these were actually ‘non-exhaustive, royalty-bearing agreements with chipmakers that explicitly did not grant rights

altogether ceased even that before 2006 (when it gained market power).⁷⁵ Second, Qualcomm's change in its licensing policy was not a profit-sacrifice in order to drive out competition, but pursuit of a much more lucrative licensing strategy.⁷⁶ Third, unlike in *Aspen Skiing*, Qualcomm did not single out any one competitor; its no-license, no-chip policy applied equally to all.⁷⁷

In contrast, the Seventh Circuit Court of Appeals in *Viamedia v. Comcast* reversed a district court decision dismissing a refusal to deal complaint against Comcast,⁷⁸ noting the similarity between Comcast's conduct and the conduct of Aspen Skiing Co.⁷⁹ The market at issue in *Viamedia* involved advertising representation services ("ad rep") for multichannel video programming distributors (MVPDs).⁸⁰ Comcast both offered ad rep services and controlled the underlying infrastructure known as Interconnects, which was set up for cable companies to sell ads in regional areas on better terms.⁸¹

The court found it particularly relevant that, from 2003 to 2012, Viamedia had a contractual agreement with Comcast to sell ads through Interconnects in the Chicago and

to the chipmaker's [OEM] customers.' Appellant's Opening Br. at 45.").

⁷⁵ QC 9th Cir Opinion, at 33–34.

⁷⁶ *Id.* at 34 ("Qualcomm responded to the change in patent-exhaustion law by choosing the path that was 'far more lucrative,' both in the short term and the long term, regardless of any impacts on competition.").

⁷⁷ *See id.* at 35 ("Qualcomm applies its OEM-level licensing policy equally with respect to all competitors in the modem chip markets and declines to enforce its patents against these rivals even though they practice Qualcomm's patents (royalty-free). Instead, Qualcomm provides these rivals indemnifications through the use of 'CDMA ASIC Agreements' —the Aspen Skiing equivalent of refusing to sell a skier a lift ticket but letting them ride the chairlift anyway.").

⁷⁸ *See Viamedia, Inc. v. Comcast Corp.*, 951 F.3d 429, 453–54 (7th Cir. 2020).

⁷⁹ *See id.* at 459–60.

⁸⁰ *See id.* at 442.

⁸¹ *See id.* at 443:

This unusual market structure thus involves three levels of competition: (1) MVPDs compete against one another for subscribers; (2) some vertically integrated MVPDs' ad rep services arms compete against Viamedia (and potentially against each other) for clients; and (3) MVPDs compete with one another for some sales of their spot avails to advertisers.

Detroit markets.⁸² Viamedia provided ad rep services to RCN in Chicago and to WOW! in Chicago and Detroit.⁸³ In December 2011, Comcast notified Viamedia it would no longer permit access to the Interconnects.⁸⁴ Viamedia alleged this terminated a voluntary course of dealing and Comcast's refusal to deal sacrificed short-term profits in the interest of the longer-term goal of harming competition.⁸⁵ Viamedia further alleged that MVPDs no longer used Viamedia's ad rep in the markets where Comcast refused to allow them to sell ads on Interconnects.⁸⁶

In reinstating the complaint, the court did not reject Comcast's efficiency justifications but noted that they were not relevant at the motion to dismiss stage where all facts alleged by the plaintiff were accepted as true.⁸⁷ Comcast plans to seek review in the Supreme Court,⁸⁸ which, if granted, would likely clarify the reach of *Aspen* post-*Trinko*.

C. A European Perspective

The EU's approach to the duty to deal in the digital economy is best exemplified

⁸² See *id.* at 443–44.

⁸³ See *id.*

⁸⁴ See *Viamedia, Inc.*, 951 F.3d at 444.

⁸⁵ See *id.* at 459 (citing *Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 409 (2004)):

In light of the similarities, unless the Court meant to limit *Aspen Skiing* to ski resorts, we see no sound basis to distinguish Viamedia's case as a matter of law. Comcast's alleged conduct, absent compelling evidence to the contrary, indicates its "calculation that its future monopoly retail price would be higher" by foreclosing its ad rep services competitor.

⁸⁶ See *id.* ("Comcast's refusal to deal with Viamedia has left its MVPD customers in these markets no practical choice but to turn over their ad sales business, along with their sensitive business information and a large percentage of their ad revenue, to their dominant MVPD competitor.").

⁸⁷ See *id.* at 460 ("[B]alancing anticompetitive effects against hypothesized justifications depends on evidence and is not amenable to resolution on the pleadings, at least where the plaintiff has alleged conduct similar to that in *Aspen Skiing*.").

⁸⁸ See Joint Status Report at 1, *Viamedia, Inc. v. Comcast Corp.*, 335 F. Supp. 3d 1036 (N.D. Ill. 2018) (ECF No. 395).

by the early 2000s enforcement action against Microsoft.⁸⁹ There, the EC deemed harmful Microsoft's refusal to "provide its competitors with 'interoperability information' and to allow its use for the purpose of developing and distributing products competing with Microsoft's own products."⁹⁰ The courts held the refusal to deal by Microsoft violated Article 82.

As mentioned in Section I.B., the three elements of a refusal to deal case in the EU are (1) indispensability, (2) elimination of competition, and (3) consumer harm. In refusal to deal cases dealing with intellectual property, the EU also considers another factor: preventing the emergence of a new product market.⁹¹ But in *Microsoft*, the Court of First Instance introduced a few complexities by liberally construing factors in favor of the plaintiff. First, the court understood "eliminating competition" as referring to "effective" competition rather than all competition.⁹² It also construed preventing the emergence of a new market liberally by saying the factor was satisfied by the prevention of a technical development.⁹³

⁸⁹ See Case T-201/04 R, *Microsoft v Commission* (Dec. 22, 2004), <http://curia.europa.eu/juris/showPdf.jsf?text=&docid=57268&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=14373836>.

⁹⁰ *Id.* at ¶ 19.

⁹¹ See Case *Magill*, Joined cases C-241/91 P and C-242/91 P, *Radio Telefis Eireann (RTE) and Independent Television Publications Ltd (ITP) v Commission of the European Communities*, 1995 E.C.R. I-00743 (appeal from Case T-69/89, *Radio Telefis Eireann v Commission of the European Communities*, 1991 E.C.R. II-00485).

⁹² See Case T-201/04 R, *Microsoft v Commission* (Judgment of the Court of First Instance, Sept. 17, 2007), at ¶ 563, <http://curia.europa.eu/juris/liste.jsf?num=T-201/04> ("Nor is it necessary to demonstrate that all competition on the market would be eliminated. What matters, for the purpose of establishing an infringement of Article 82 EC, is that the refusal at issue is liable to, or is likely to, eliminate all effective competition on the market. It must be made clear that the fact that the competitors of the dominant undertaking retain a marginal presence in certain niches on the market cannot suffice to substantiate the existence of such competition.").

⁹³ See *id.* at ¶ 647 ("The circumstance relating to the appearance of a new product, as envisaged in *Magill* and *IMS Health*, cited in paragraph 107 above, cannot be the only parameter which determines whether a refusal to license an intellectual property right is capable of causing prejudice to consumers within the meaning of Article 82(b) EC. As that provision states, such prejudice may arise where there is a limitation not only of production or markets, but also of technical development.").

Moreover, unlike under US law, the plaintiff did not need to allege there had previously been a voluntary course of dealing. Microsoft had never provided interoperability information to Sun Microsystems. But under EU competition law, its refusal to deal was judged anticompetitive because Java, Sun's putative competitor to Windows, needed to be interoperable with Windows in order to have any chance of success. This is inconsistent with the standards of *Aspen* and *Trinko* in US antitrust law, because there was no allegation that Microsoft discontinued a voluntary and profitable course of dealing.

The ongoing Google Shopping case will also grapple with the digital duty to deal. On appeal to the EU's General Court, Google is arguing the EC was actually relying on a refusal to supply theory and failed to meet the criteria.⁹⁴ The EC has long argued that it was not relying upon that theory. However, it is noteworthy that the EC's remedy was to give competing online comparison shopping services access to Google's Shopping Unit, which suggests that the problem indeed was a refusal to supply that service to competitors.

If characterized as a refusal to supply case, the EC would have to prove that Google is a dominant undertaking that refused to supply a service essential to support competition in a downstream market.⁹⁵ Google would be able to argue that under EU case law, it is not an abuse for a dominant undertaking to favor itself by restricting to itself the use of its own asset.⁹⁶ Google would also argue the EC has not established that Google's Shopping Unit is indispensable to other online comparison shopping services.

It is not clear whether the reviewing court will reach these arguments in *Google*

⁹⁴ See Lesley Hannah & Claus Wenzler, *The Google Shopping Decision and Whether Digital Platforms Can Constitute Essential Facilities*, HAUSFELD (May 20, 2020), https://www.hausfeld.com/news-press/the-google-shopping-decision-and-whether-digital-platforms-can-constitute-essential-facilities?lang_id=1.

⁹⁵ Cf. Case 6-7/97, *Bronner v. Mediaprint*, 1998 E.C.R. I-7817, ¶ 27.

⁹⁶ See Hannah & Wenzler, *supra* note 94.

Search, but the duty to deal remains in need of further clarification in the EU digital context.

III. SPECIFIC DUTIES TO DEAL: DATA PORTABILITY AND INTEROPERABILITY

There are two specific categories of duties to deal that are commonly discussed as remedies in cases involving digital markets: data portability and interoperability. The idea of data portability is that users of one service (that is, who are part of that service's network) should be able to take their data with them to another service. Interoperability is a closely related idea: dominant firms should engineer their platforms so that competing firms' services can seamlessly work with those of dominant firms. The basic economic rationales for these ideas are, respectively, to reduce switching costs and to reduce the barriers to entry that network effects can create.

Data portability, for instance, might require a social media company to allow a user to download all of her posts and personal information and thus be able to import them into a competing service. Interoperability may, in a weak form, require a social media company to use standardized file formats (e.g., XML for user data; JPEG for images). In a stronger form, it may require that a social media company engineer (or re-engineer) their systems to use industry-defined APIs that would allow competitors' users to post directly to or receive posts directly from that firm's customers.

We can see other examples in the telecommunications sector, discussed above. For instance, local number portability, which allows telephone customers to keep their phone numbers as they change service providers, has had dramatic procompetitive effects and was important to establishing competitive local carriers following adoption of the 1996 Telecommunications Act.⁹⁷ Similarly, one of the underlying principles of the Act was to

⁹⁷ STIGLER COMMITTEE ON DIGITAL PLATFORMS, FINAL REPORT 102–04 (2019) [hereinafter STIGLER REPORT], <https://www.publicknowledge.org/wp-content/uploads/2019/09/Stigler-Committee-on-Digital-Platforms-Final-Report.pdf>.

require both incumbent local exchange carriers to interconnect with competitors at any technically feasible point, and new entrants into the telecommunications market to design their networks to support interconnection.⁹⁸ This history, however, also demonstrates the non-trivial nature of such mandates: giving meaning to the obligation to allow interconnection at “any technically feasible point” gave rise to years of litigation and a trip to the Supreme Court.⁹⁹

A. Calls for Data Portability and Interoperability

Data portability and interoperability advocates have called for their use both in legislation and as antitrust remedies against Big Tech in the US and the EU. In the US, for instance, the advocacy-focused think tank Public Knowledge has argued that both should be required in federal privacy legislation based upon the UK’s Open Banking Initiative.¹⁰⁰ Similarly, the Open Technology Institute has proposed a Data Portability Act modeled upon the EU’s General Data Protection Regulation (GDPR) and the California Consumer Protection Act (CCPA).¹⁰¹ A coalition of academics from the Stigler Center’s Committee on Digital Platforms offered forced interoperability¹⁰² and data portability mandates¹⁰³ as possible solutions to the market power of Big Tech.

Multiple reports from United Kingdom have called for data portability or

⁹⁸ Cf. 47 C.F.R. § 51.305 (Part 51 of this title is called “Interconnection.”)

⁹⁹ See *id.* § 51.305(a)(2); Implementation of the 1996 Act’s interconnection requirements was a central issue in *AT&T v. Iowa Utils Bd* 525 U.S. 366 (1999), and associated litigation discussed *supra*, note 60. Related questions have been raised before the Supreme Court as recently as 2011. See *Talk America, Inc. v. Michigan Bell Telephone Co.*, 564 U.S. 50 (2011).

¹⁰⁰ See Gus Rossi & Charlotte Slaiman, *Interoperability = Privacy + Competition*, PUBLIC KNOWLEDGE (Apr. 26, 2019), <https://www.publicknowledge.org/blog/interoperability-privacy-competition/>.

¹⁰¹ See Eric Null & Ross Schulman, *The Data Portability Act: More User Control, More Competition*, NEW AMERICA (Aug. 19, 2019), <https://www.newamerica.org/oti/blog/data-portability-act-more-user-control-more-competition/>.

¹⁰² STIGLER REPORT, *supra* note 97, at 18.

¹⁰³ *Id.* at 109.

interoperability as well. The Furman Report called for personal data mobility and data openness, which encompasses the ideas of data portability and interoperability, as competition measures.¹⁰⁴ The Competition & Markets Authority's report, *Online Platforms and Digital Advertising*, called for the Digital Markets Unit to be empowered to take on issues related to interoperability in order to promote digital competition.¹⁰⁵

There is at least one exception to this international consensus. The Australian Competition & Consumer Commission (ACCC) Digital Platforms Inquiry considered the benefits of data portability and interoperability requirements but did not recommend them because it did not think they would either significantly reduce the network effects of online platforms or reduce barriers to entry.¹⁰⁶

In the EU, on the other hand, calls for data portability and interoperability have led to action. For instance, interoperability has been a remedy in competition law cases, like the *Microsoft* and *Google Search* cases described above. On top of that, the EC identified a lack of interoperability as a top item on its Digital Agenda for Europe.¹⁰⁷ In

¹⁰⁴ See UNLOCKING DIGITAL COMPETITION: REPORT OF THE DIGITAL COMPETITION EXPERT PANEL 74 (2019), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf (“Enabling personal data mobility may provide a consumer-led tool that will increase use for new digital services, providing companies with an easier way to compete and grow in data-driven markets. However, in some markets, the key to effective competition may be to grant potential competitors access to privately-held data.”).

¹⁰⁵ See COMPETITION & MARKETS AUTHORITY, ONLINE PLATFORMS AND DIGITAL ADVERTISING: MARKET STUDY FINAL REPORT 24 (2020), https://assets.publishing.service.gov.uk/media/5efc57ed3a6f4023d242ed56/Final_report_1_July_2020_.pdf (recommending “[i]ncreasing consumer control over data, which includes providing choices over the use of data and facilitating consumer-led data mobility; Mandating interoperability to overcome network effects and

coordination failures; Mandating third-party access to data where data is valuable in overcoming barriers to entry and expansion and privacy concerns can be effectively managed.”).

¹⁰⁶ See AUSTRALIAN COMPETITION & CONSUMER COMMISSION, DIGITAL PLATFORMS INQUIRY: FINAL REPORT 115–16 (2019), <https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>.

¹⁰⁷ See *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A Digital Agenda for Europe*, at 5, COM (2010) 245 final (May 19, 2010), <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF>.

order to promote greater interoperability the Digital Agenda calls for standard-making by private entities to be facilitated by public policy.¹⁰⁸ The new European Interoperability Framework (EIF) was developed and adopted by the EC in 2017 to facilitate interactions among government agencies, called public administrations.¹⁰⁹

The EU has also taken steps to effectuate data portability. Article 20 of GDPR requires data portability, stipulating that a user “shall have the right to receive the personal data concerning him or her, which he or she has provided to a controller, in a structured, commonly used and machine-readable format and have the right to transmit those data to another controller without hindrance.”¹¹⁰

Some have argued that interoperability requirements should be required of Big Tech companies as antitrust remedies in the US.¹¹¹ This flows from the idea that the lack of interoperability with other platforms is what gives major online platforms market power, as competition shifts from competition *in* the market to competition *for* the

¹⁰⁸ See *id.* at 15 (“The Commission will examine the feasibility of measures that could lead significant market players to license interoperability information while at the same time promoting innovation and competition.”).

¹⁰⁹ See EUROPEAN COMMISSION, NEW EUROPEAN INTEROPERABILITY FRAMEWORK: PROMOTING SEAMLESS SERVICES AND DATA FLOWS FOR EUROPEAN PUBLIC ADMINISTRATIONS 4 (2017), https://ec.europa.eu/isa2/sites/isa/files/eif_brochure_final.pdf. This includes, for instance, agencies like the Ministry of Finance, the Prime Minister’s Office, etc. depending on the nomenclature of each country’s government.

¹¹⁰ See Regulation 2016/679, of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data and Repealing Directive 95/46/EC, at 2016 O.J. (L 119) 5, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679&qid=1597384369740&from=EN>.

¹¹¹ See FIONA M. SCOTT MORTON & DAVID C. DINIELLI, OMIDYAR NETWORK, ROADMAP FOR AN ANTITRUST CASE AGAINST FACEBOOK 2 (2020), <https://www.omidyar.com/sites/default/files/Roadmap%20for%20an%20Antitrust%20Case%20Against%20Facebook.pdf> (“We do not address potential remedies in this paper, except to note that, because of the market’s network effects and tendency to tip, remedial measures might need to include mandatory interoperability among competing platforms and complements.”). Ironically, there are also rumors that moves towards interoperability by Facebook could also be subject to antitrust suit. See John D. McKinnon & Emily Grazer, *FTC Weighs Injunction Against Facebook Over How Its Apps Interact*, WALL ST. J. (Dec. 12, 2019), <https://www.wsj.com/articles/ftc-weighs-seeking-injunction-against-facebook-over-how-its-apps-interact-11576178055>.

market.¹¹²

Mandating interoperability runs into legal and practical issues. First, mandating interoperable platforms requires some of the very coordination between firms that antitrust laws normally seek to deter.¹¹³ Therefore, it should not be embraced without attention to whether firms are using it to evade the competitive dynamics that antitrust law is meant to protect. Indeed, interoperability among currently dominant online platforms could exacerbate rather than reduce their market power.¹¹⁴ For instance, if something like the data portability project among Facebook, Twitter, Google, and Apple were to be mandated in a format which is friendly to the incumbents but not to new

¹¹² See Morton & Dinielli, *supra* note 111, at 17:

But the principal challenges to multi-homing in social networks result from decisions made by Facebook itself. Consumers easily could subscribe to (and provide their data to) only those social networks whose collection of services and policies were most attractive to them if the services were fully interoperable. We can imagine a social network market that worked more like the current phone system: a user of one social network could post and reach friends who were members of different social networks through interoperability protocols. In such a world an entrant could attract users who want better privacy protections while staying in touch with friends who remain on Facebook, for example. That is not the world we inhabit[;]

id. at 16:

This is the situation in social networks. Choosing a platform determines with whom a user can communicate. Strong network effects make such platforms subject to a phenomenon called tipping. Because users all want to belong to the platform where their friends are, a market that starts out with multiple platforms will not stay that way. When one platform gains a slight advantage, it becomes the platform of choice for new users because it has more of their friends on it. Users who want to interoperate tend to all join the leading platform, causing the market to tip. As the result of this “winner-takes-all” dynamic whereby a single market participant (among several or many) rapidly gains monopoly or near monopoly power, there is little competition in a market after it has tipped. Economists describe competition in this kind of market as occurring *ex ante*, when multiple rivals are all vying for the monopoly position. Competition is for the market, rather than in the market, other than by sufficiently differentiated competitors.

See also Edwin Chadwick, *Results of Different Principles of Legislation and Administration in Europe; of Competition for the Field, as compared with the Competition within the Field of Service*, 22 J. ROYAL STATISTICAL SOC'Y. 381 (1859).

¹¹³ See *Verizon Commc'ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408 (2004) (“[C]ompelling negotiation between competitors may facilitate the supreme evil of antitrust: collusion.”).

¹¹⁴ For instance, some have argued for antitrust scrutiny against Facebook for trying to create greater interoperability between Facebook, Messenger, and WhatsApp. See McKinnon & Grazer, *supra* note 111.

entrants, then it could actually have an exclusionary effect.¹¹⁵

Second, it is unclear how interoperability would be practically enforced. Courts are generally unable to oversee this process.¹¹⁶ An expert regulator may be better positioned than a generalist court, but it too would be highly dependent on the regulated platforms to design and implement any interoperability plan. Once again we see echoes of the midcentury challenges the FCC faced in regulating AT&T,¹¹⁷ and the challenges it faced at the turn of the century when implementing the Telecom Act's interoperability mandates.¹¹⁸

B. Opening Up the Network—or the Economics of Data Portability and Interoperability

A mandatory duty to deal is often a problematic remedy for addressing antitrust concerns. The basic argument for imposing a duty to deal as an antitrust remedy is deceptively simple: network effects can create an effective barrier to competitive entry and, where such barriers are achieved or maintained through anticompetitive means, a remedy to address them is appropriate.¹¹⁹ But network effects often create substantial value for consumers, so a remedy that would reduce network effects (such as breaking up firms) is undesirable.

¹¹⁵ See, e.g., Gabriel Nicholas & Michael Weinberg, *Data Portability and Platform Competition: Is User Data Exported from Facebook Actually Useful to Competitors?*, ENGELBERG CENTER ON INNOVATION LAW & POLICY, NYU LAW SCHOOL (Nov. 2019), <https://www.law.nyu.edu/centers/engelberg/pubs/2019-11-06-Data-Portability-And-Platform-Competition>.

¹¹⁶ See *Trinko*, 409 U.S. at 408 (“Enforced sharing also requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing—a role for which they are ill suited.”).

¹¹⁷ See *supra*, notes 53–55 (discussing the challenges the FCC faced in disentangling AT&T's regulated telephone business from its efforts to enter into the unregulated market for computer services).

¹¹⁸ See *supra*, notes 59–61 (discussing the decade-long legal fights over the FCC's efforts to implement the 1996 Telecommunications Act's unbundling and interconnection obligations).

¹¹⁹ See, e.g., *United States v. Microsoft*, 231 F. Supp. 2d 144 (D.D.C. 2002) (imposing a duty to deal on remand). But note that, as discussed in III.A, many jurisdictions are considering whether to impose duties to deal on a regulatory basis, even without any anticompetitive conduct on the part of firms that have created such networks.

Still, in principle, a duty to deal that requires a monopolist to open up its network to competitors could facilitate entry while reducing any loss of benefits stemming from pro-consumer network effects—if, that is, the duty to deal could be implemented costlessly, which is rarely the case. To be sure, there are instances where firms may engage in anticompetitive conduct in order to obtain or maintain a monopoly position. In those cases, some antitrust remedy is appropriate and may include imposing a duty to deal; in such cases it may be appropriate to think of the remedy as a form of disgorgement, in which the firm is required to invest its ill-gotten gains into opening up its network to competitors in a way that preserves consumer value while facilitating entry. But where there is no underlying anticompetitive conduct, duties to deal serve no remedial purpose and may come at a substantial cost to consumers. It is therefore troubling to see so many countries considering imposing duties to deal as a precautionary, regulatory measure.

Concerns about using a duty to deal as an antitrust remedy in digital markets fall into three categories: the direct costs of imposing such a duty, the effects on static competition, and the effects on dynamic competition. It is easy to imagine a world of interoperable networks, but it is more difficult to actually design such a world. The design challenges account for the direct costs of duties to deal. An antitrust duty to deal necessarily arises only where one of the parties is averse to a voluntary course of dealing. As a result, it falls to the antitrust authorities and courts to determine the terms of the duty to deal. This is easier said than done, especially in complex, rapidly changing markets.

As an example, consider again the history of AT&T and the telecommunications industry. In the *Computer Inquiries*, the FCC spent nearly two decades trying to define the terms on which AT&T could deal with the computer industry—an effort ended by the antitrust suit breaking up AT&T, not by the FCC's efforts proving fruitful. Another example is to be found in the Telecommunications Act of 1996, at its core a statute that

created a duty for incumbent telecommunications carriers to deal with competitive entrants into the market. Implementation of the Act led to over a decade of litigation that ended up in the Supreme Court multiple times.¹²⁰ Arguably, the Telecommunications Act failed to achieve its primary goals: to the extent the communications industry has become more competitive over the past 25 years, it did so largely with thanks to unprecedented technological innovation on the part of cellular and cable communications companies.

The effort to impose duties to deal in the telecommunications industry is particularly telling because it is a heavily regulated industry comprising a relatively small number of firms and a dedicated, expert regulator. Indeed, for most of the 20th century the industry was based upon a simple, relatively static technology well understood by the FCC. Yet the FCC and the courts consistently struggled to implement duties to deal.

Given these failures, it is hard to imagine successfully implementing a duty to deal in digital markets, which are dynamic industries built upon rapidly changing technologies. Indeed, modern computer systems are often so complicated that the entirety of how they work is incomprehensible even to the engineers who build them¹²¹ — not to mention the widespread adoption of machine learning algorithms into many of the platforms that dominate the digital economy.¹²²

To take just one specific example of the potential unanticipated costs of implementing data portability or interoperability duties, consider their potential effects on data security and privacy. Data security and privacy are both important issues in the digital marketplace. Indeed, in the minds of those who are most keen to find competition problems in digital markets, data security and privacy are arguably equal in importance

¹²⁰ See *Verizon Commc'ns v. FCC*, 535 U.S. 467 (2002); *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366 (1999).

¹²¹ See, e.g., Mike Ananny & Kate Crawford, *Seeing without knowing: Limitations of the transparency ideal and its application to algorithmic accountability*, 20 *NEW MEDIA & SOCIETY* 973 (2016).

¹²² See, e.g., Darrell M. West & John R. Allen, *How artificial intelligence is transforming the world*, BROOKINGS (Apr. 24, 2018), <https://www.brookings.edu/research/how-artificial-intelligence-is-transforming-the-world/>.

to competition issues. Yet the data portability and interoperability mandates run at cross purposes to data security and privacy.¹²³ The idea of data portability and interoperability mandates is to make it easier for users and firms to access the very information that those concerned about data security and privacy want to ensure is difficult to access. Making it easier for authorized third parties to access information, by definition, also makes it easier for unauthorized parties to do so.

In addition to these direct costs, imposing duties to deal in digital markets will affect how firms compete with one another in both static and dynamic terms. Experience under the Telecommunications Act of 1996 shows there is likely to be less dynamic competition, in the form of innovation, and more static competition along narrow margins. For instance, a firm that avails itself of its dominant competitor's network will need to maintain some level of compatibility with that network in order to maintain the benefits of the network effects that result from interoperability. The competitor, therefore, will have less ability to compete by offering new or improved core functionalities; instead, it will focus on repackaging or reselling the services already offered by the dominant firm.¹²⁴

More perniciously, reliance on an antitrust duty to deal opens up use of the courts and antitrust laws as a means by which non-competitive firms can attempt to "compete," albeit by a fundamentally anticompetitive means, with more capable firms; the more duties to deal are imposed, the more frequently firms will seek to avail themselves of them. Because it is difficult to fully specify the terms of a duty to deal, imposing one as a

¹²³ See Peter Swire & Yianni Lagos, *Why the Right to Data Portability Likely Reduces Consumer Welfare: Antitrust and Privacy Critique*, 72 MD. L. REV. 335, 373–75 (2013).

¹²⁴ See *Verizon Commc'ns*, 535 U.S. at 550 (Breyer, J., concurring in part and dissenting in part) ("firms that share existing facilities do not compete in respect to the facilities that they share, any more than several grain producers who auction their grain at a single jointly owned market compete in respect to *auction* services.") *cf.* Mattia Nardotto et al., *Unbundling the Incumbent: Evidence from UK Broadband*, J. EUR. ECON. ASS'N 330, 332–35 (2015) (noting that the UK's telephone network began as an AT&T-style monopoly).

remedy in any given case is an invitation for future lawsuits regarding compliance. Once again, this was the story of the Telecommunications Act of 1996.

Likewise, a data portability mandate would empower every competitor to make demands for access to any of a firm's data arguably subject to that mandate—and those demands would be backed by a colorable threat of agency or judicial review. Similarly, with regard to an interoperability mandate, the threat of agency or judicial intervention effectively shifts the costs of designing systems for interoperability from the competitor, which wants the benefits of interoperability, to the incumbent firm, which must now facilitate it.

Perhaps the most important aspect of a duty to deal in digital markets is how it may affect dynamic competition—in particular, its effects on innovation. As an initial matter, noted above, a duty to deal mandate is likely to shift resources away from dynamic competition (e.g., trying to build a new, better, service) and to static competition (trying to obtain access to and repackage or resell existing services). It is debatable whether this increased static “competition” is, in fact, beneficial to consumers. It is unquestionable, however, that a reduction in dynamic competition would be a loss for consumers. The duty to deal itself reduces the expected flow (that is, net present value) of future revenues from successful innovations—which, in turn, will reduce the amount that firms are willing to invest in potentially disruptive innovation.

Indeed, this reduction in investment is likely to happen under either a “European” (to use an only slightly unfair characterization) approach, in which mere acquisition of significant market power is sufficient to trigger a duty to deal, or an “American” approach in which imposing an antitrust duty to deal remedies some improper conduct to obtain or maintain market power. Given current discussions about data portability and interoperability mandates, an American firm may understandably be concerned that failure to design its products in a way that facilitates interoperability could be interpreted as exclusionary conduct. To be sure, that alone ought not be sufficient to sustain an

antitrust claim; there are good reasons not to design systems for interoperability¹²⁵ and, even if a firm does achieve market power, there are good reasons not to redesign systems to facilitate interoperability.¹²⁶ Regardless, the clever antitrust plaintiff would be remiss not to argue that a firm with market power had deliberately designed its systems to create barriers to entry and that failure to redesign its systems was a means of anticompetitively maintaining its market power. Combined with a few “hot docs” containing robust puffery, such a claim could easily be accepted by a court.¹²⁷ Given the consequent risk that a firm’s investment in innovation could be rewarded with a mandatory divestment of any rewards arising from that investment, it is likely that many firms would forego or reduce their investment in innovation.

CONCLUSION

There are increasing calls to use antitrust and other regulatory duties to deal in order to address competition concerns in the digital economy. Interest in these tools is driven by a belief that mandating interoperability between platforms in the network industries that make up this market is a low-cost way to maintain the benefits created by these platforms—which are characterized by network effects and economies of scale—while facilitating competition among them. But history tells a cautionary tale, suggesting that implementing such duties is often more difficult and less beneficial than their proponents recognize.

Imposing a duty to deal, whether as an antitrust remedy or through a regulation

¹²⁵ See Timothy Bresnahan & Manuel Trajtenberg, *General Purpose Technologies “Engines of Growth?”*, 65 J. ECONOMETRICS 83, 94–96 (1995). See also Christopher Yoo, *Modularity Theory and Internet Policy* 2016 U. ILL. L. REV 1 (2016).

¹²⁶ See Joel Spolsky, *Things You Should Never Do, Part I*, JOEL ON SOFTWARE (Apr. 6, 2000) <https://www.joelonsoftware.com/2000/04/06/things-you-should-never-do-part-i/> (never rewrite code from scratch).

¹²⁷ See, e.g., Geoffrey A. Manne & Marcellus Williamson, *Hot Docs vs. Cold Economics: The Use and Misuse of Business Documents in Antitrust Enforcement and Adjudication*, 47 ARIZ. L. REV. 609 (discussing the sensational nature of “hot” documents in adjudicatory processes, and their relative lack of substantive usefulness).

requiring interoperability or data portability, risks reducing the incentives that competition law is designed to promote. U.S. antitrust law seeks to avoid false positives in its duty to deal jurisprudence for precisely this reason. Moreover, the history of trying to implement a duty to deal for AT&T during its years as a regulated monopoly shows the practical difficulty of enforcing that duty. The agencies considering interoperability and data portability requirements in the U.S. and the E.U. should proceed with caution—and those arguing for them should bear a heavy burden to demonstrate those requirements are needed and will likely prove beneficial to competition.

Section 230: An Introduction for Antitrust & Consumer Protection Practitioners

Berin Szóka & Ashkhen Kazaryan

INTRODUCTION

Almost every site and service you use on the Internet involves content created by someone other than the operator. Most obviously, social media networks such as Facebook, Twitter and YouTube rely on their users to create content. But so do Wikipedia and reviews sites such as Yelp and TripAdvisor. The vast majority of news and commentary websites allow users to post comments on each article. Email, messaging services, and video chat all empower users to communicate with each other. And it's not just content created by users. Google and other search engines catalog websites created by others and attempt to offer users the most relevant results for their search. Each of those websites relies on a complex system of "intermediaries" to host their content, register their domain name, protect those sites against attack, serve the ads that sustain those sites, and much more. Google, Apple, Microsoft, Amazon and others offer third-party apps for download on mobile devices, personal computers, televisions, gaming consoles, watches, and much else.

How did such a complex ecosystem evolve? Try, for a moment, to look at the Internet the way Charles Darwin looked at the complexity of the organic world in the last paragraph of *On The Origin of Species*. In describing how the simple laws of evolution could produce the wondrous diversity of life we see all around us, Darwin wrote¹:

It is interesting to contemplate an entangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately constructed forms, so different from each other, and dependent on each other in so complex a manner, have all been produced by laws acting around us. These laws, taken in the largest sense, being Growth with

¹ Liza Gross, *Darwin's Tangled Bank in Verse*, PLOS BIOLOGUE (Dec. 5, 2012), <https://biologue.plos.org/2012/12/05/darwins-tangled-bank-in-verse/>.

Reproduction; inheritance which is almost implied by reproduction; Variability from the indirect and direct action of the external conditions of life, and from use and disuse; a Ratio of Increase so high as to lead to a Struggle for Life, and as a consequence to Natural Selection, entailing Divergence of Character and the Extinction of less-improved forms. Thus, from the war of nature, from famine and death, the most exalted object which we are capable of conceiving, namely, the production of the higher animals, directly follows. There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.²

Now throw in lawyers and America's uniquely litigious culture: how far would evolution have progressed if every step had been subject to litigation? In the digital world, this is not a facetious question. Many "natural" "laws" have shaped the evolution of today's Internet. Moore's Law: processor speeds, or overall processing power for computers, will double every two years.³ Metcalfe's law: "the effect of a telecommunications network is proportional to the square of the number of connected users of the system."⁴ But one *statutory* law has made it all possible: Section 230 of the Communications Decency Act of 1996.

The law's premise is simple: "Content creators—including online services themselves—bear primary responsibility for their own content and actions. Section 230 has never interfered with holding content creators liable. Instead, Section 230 restricts only who can be liable for the harmful content created by others."⁵ Specifically, Section 230(c)(1) protects "interactive computer service" (ICS) providers and users from civil actions or state (but not federal) criminal prosecution based on decisions they make as "publishers" with respect to third-party content they are in no way responsible for

² Darwin's *Origin of Species* has been rightly called the "most poetic thing ever written about nature." *Id.*

³ *Moore's Law*, Encyclopædia Britannica (Dec. 26, 2019), <https://www.britannica.com/technology/Moores-law>.

⁴ Steve Gibson, *Network Marketing | Metcalfe's Law*, MEDIUM (May 12, 2020), https://medium.com/@steve_98816/network-marketing-metcalfes-law-973f22d4a4d8.

⁵ *Liability for User-Generated Content Online, Principles for Lawmakers* (July 11, 2019), <https://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=2992&context=historical>.

developing. In its 1997 *Zeran* decision, the Fourth Circuit became the first appellate court to interpret this provision, concluding that “lawsuits seeking to hold a service provider liable for its exercise of a publisher's traditional editorial functions—such as deciding whether to publish, withdraw, postpone or alter content—are barred.”⁶ A second immunity, Section 230(c)(2)(A) protects (in different ways) decisions to “restrict access to or availability of material that the provider or user considers to be . . . objectionable,” even if the provider is partly responsible for developing it.⁷

These two immunities, especially (c)(1), allow these ICS providers and users to short-circuit the expensive and time-consuming litigation process quickly, usually with a motion to dismiss—and before incurring the expense of discovery. In this sense, Section 230 functions much like anti-SLAPP laws, which, in 30 states,⁸ allow defendants to quickly dismiss strategic lawsuits against public participation (SLAPPs)—brought by everyone from businesses fearful of negative reviews to politicians furious about criticism—that seek to use the legal system to silence speech.⁹

Without Section 230 protections, ICS providers would face what the Ninth Circuit, in its landmark *Roommates* decision, famously called “death by ten thousand duck-bites:”¹⁰ liability at the scale of the billions of pieces of content generated by users of social media sites and other third parties every day. As that court explained, “section 230 must be interpreted to protect websites not merely from ultimate liability, but from having to

⁶ *Zeran v. Am. Online*, 129 F.3d 327, 330 (4th Cir. 1997); *see also* *Barrett v. Rosenthal*, 146 P.3d 510, 515 (Cal. 2006).

⁷ 47 U.S.C. § 230(c)(2)(A).

⁸ Austin Vining & Sarah Matthews, *Introduction to Anti-SLAPP Laws*, REPORTERS COMM. FOR FREEDOM OF THE PRESS, <https://www.rcfp.org/introduction-anti-slapp-guide/#:~:text=As%20of%20fall%202019%2C%2030,New%20York%2C%20Oklahoma%2C%20Oregon%2C>.

⁹ Congress has considered, but not yet enacted, federal anti-SLAPP legislation. Citizen Participation Act of 2020, H.R. 7771, 116th Cong. (2d Sess. 2020).

¹⁰ *Fair Hous. Council of San Fernando Valley v. Roommates.com, LLC*, 521 F.3d 1157, 1174 (9th Cir. 2008).

fight costly and protracted legal battles.”¹¹ For offering that protection, Section 230(c)(1) has been called the “the twenty-six words that created the Internet.”¹²

What competition and consumer-protection claims does Section 230 actually bar with respect to content-moderation decisions? That depends on whether, when making such decisions, ICS providers and users are exercising the editorial discretion protected by the First Amendment for traditional media operators and new media operators alike under *Miami Herald Publishing Co. v. Tornillo*, 418 U.S. 241 (1974). Section 230’s protection is effectively co-extensive with the First Amendment’s. Like anti-SLAPP legislation, Section 230 merely supplies defendants a procedural shortcut to bypass the litigation process and quickly reach the end result that the First Amendment already assures them. That result is that they can moderate content as they see fit—except, just as newspapers may not engage in *economic* conduct that harms competition, nor are ICS providers acting “as publishers” or “in good faith” when they make content moderation decisions for anti-competitive reasons, and with anti-competitive effect, rather than editorial judgment. The First Amendment protects the right of newspapers to reject ads for editorial reasons, yet a “publisher may not accept or deny advertisements in an ‘attempt to monopolize . . . any part of the trade or commerce among the several States’”¹³ In consumer protection law, deception and other causes of action based on misleading advertising always require that marketing claims be capable of being disproven objectively.

Until recently, most of the debate over rethinking Section 230 has been about increasing liability for content that ICS providers and users *do* decide to publish. Most notably, in 2017, Congress amended Section 230 for the first time: websites have never been immune from federal criminal prosecution for sex trafficking or anything else, but

¹¹ *Id.*

¹² See, e.g., JEFF KOSSEFF, *THE TWENTY SIX WORDS THAT CREATED THE INTERNET* (2019).

¹³ *Lorain Journal v. United States*, 342 U.S. 143, 156 (1951).

the Stop Enabling Sex Traffickers Act (SESTA) allows for state criminal prosecutions and civil liability while strengthening federal law on the promotion of prostitution.¹⁴

Congress is again debating legislation aimed at combatting child sexual exploitation (CSE) as well as child sexual abuse material (CSAM): the EARN IT Act would create vast, vague liability for enabling not only the transmission of CSAM videos and images but also communications between minors and adults that might amount to solicitation or “grooming.” EARN IT could cause online communications services to compromise encryption or other security features, lead to mandatory age and identity verification, and prompt unconstitutional suppression of anonymous speech.¹⁵

A flurry of other pending bills would amend Section 230 to hold websites liable for a variety of other content, from misinformation to opioids.¹⁶ Democrats and civil rights groups have particularly focused on claims that Section 230 has obstructed enforcement of anti-discrimination law—even though the Department of Housing and Urban Development (HUD) has sued Facebook anyway for allowing buyers of housing ads to target audiences on the basis of race, religion, or gender.¹⁷ Section 230 won’t bar that suit if a court decides that Facebook was responsible, even “in part,” for “the creation or development of [those ads],”¹⁸ just as Roommates.com was held responsible for housing discrimination because it allowed its users to specify race-based preferences in

¹⁴ S. 1693, 115th Cong. (2017).

¹⁵ See S. 3398, 116th Cong. (Mar. 5, 2020).

¹⁶ See, e.g., See Something Say Something Online Act of 2020, S. 4758, 116th Cong. (Sept. 29, 2020), https://www.manchin.senate.gov/imo/media/doc/2020_0928%20See%20Something%20Say%20Something%20Online%20Act.pdf?cb; Online Content Policy Modernization Act, S. 4632 116th Cong. (Sept. 21, 2020), https://www.judiciary.senate.gov/imo/media/doc/S4632.pdf?fbclid=IwAR1R_u6DUfbcmRCe-7izU93LGbtT497oLU-WwmJX_3cPdU4t67BhfW-NXCI/.

¹⁷ Charge of Discrimination, HUD v. Facebook, Inc. FHEO No. 01-18-0323-8 (U.S. Dep’t of Hous. & Urban Dev., Mar. 28, 2019).

¹⁸ 47 U.S.C. § 230(f)(3).

posting, and searching, housing ads on the site.¹⁹ “Internet platforms are generally protected from liability for third-party content,” explains former Rep. Chris Cox (R-CA), Section 230’s primary author, “*unless* they are complicit in the development of illegal content, in which case the statute offers them no protection.”²⁰

In 2020, the political focus of the debate around Section 230 shifted dramatically — from holding ICS providers liable for not doing *enough* to moderate potentially unlawful or objectionable content to holding them responsible for doing too *much* content moderation, or at least, moderating content in ways that some find “biased.” Republicans blame Section 230 for preventing them from enforcing antitrust and consumer protection laws against “Big Tech” for discriminating against conservatives in how they treat third-party content. In May, President Trump signed an Executive Order that ordered an all-out attack on Section 230 on multiple fronts.²¹ At the President’s direction, the Department of Justice proposed to add an exemption to Section 230 for antitrust claims.²² Likewise both DOJ and the National Telecommunications Information Administration (NTIA) want to make it easier to sue tech companies for how they moderate third-party content, label it, and decide how to present it to their users. Both DOJ and NTIA claim that courts have misinterpreted Section 230, but while DOJ wants Congress to amend the law, NTIA has filed a petition (as directed by the Executive Order) asking the Federal Communications Commission (FCC) to reinterpret the law by rulemaking.²³ Because the

¹⁹ Fair Hous. Council of San Fernando Valley v. Roommates.com, LLC, 521 F.3d 1157 (9th Cir. 2008).

²⁰ Christopher Cox, *The Origins and Original Intent of Section 230 of the Communications Decency Act*, J.L. & TECH., ¶ 1 (Aug. 27, 2020), <https://jolt.richmond.edu/2020/08/27/the-origins-and-original-intent-of-section-230-of-the-communications-decency-act/> (emphasis added).

²¹ Preventing Online Censorship at Section 4(c), Exec. Order No. 13925, 85 Fed. Reg. 34079, 34080 (June 2, 2020) [hereinafter Executive Order].

²² U.S. Dept. of Justice, *Ramseyer Draft Legislative Reforms to Section 230 of the Communications Decency Act* (June 17, 2020), <https://www.justice.gov/file/1319331/download> (“Nothing in this section shall be construed to prevent, impair, or limit any civil action brought under the Federal antitrust laws.”).

²³ Nat’l Telecomm. & Info. Admin., Petition for Rulemaking of the Nat’l Telecomm. & Info. Admin. (July 27, 2020) [hereinafter NTIA Petition], https://www.ntia.gov/files/ntia/publications/ntia_petition_for_

NTIA Petition (and the comments filed in response to it, including reply comments by NTIA) provides the most detailed explanation of the new Republican party line on Section 230, it provides a concrete basis for much of the discussion below. TechFreedom’s comments and reply comments in that docket provide a more detailed response than possible here.²⁴ As requested by the Executive Order, multiple Republican lawmakers have introduced legislation to do the same thing, allowing lawsuits for alleged bias in content moderation.²⁵

Democrats have yet to sign onto legislation that would directly regulate bias. Bipartisan draft legislation in the Senate, the PACT Act, would require ICS providers other than “small business providers”²⁶ to (i) “reasonably inform users about the types of

rulemaking_7.27.20.pdf.

²⁴ TechFreedom, Comments in the Matter of Nat’l Telecomms. & Info. Admin. Petition for Rulemaking to Clarify provisions of Section 230 Of the Communications Act of 1934 (Sept. 2, 2020), <https://techfreedom.org/wp-content/uploads/2020/09/NTIA-230-Petition-Comments-%E2%80%939.2.2020.pdf>; TechFreedom, Reply Comments (Sept. 17, 2020), <https://techfreedom.org/wp-content/uploads/2020/09/NTIA-230-Petition-Reply-Comments-9.17.2020.pdf>.

²⁵ Ending Support for Internet Censorship Act, S. 1914, 116th Cong. (June 19, 2019), <https://www.hawley.senate.gov/sites/default/files/2019-06/Ending-Support-Internet-Censorship-Act-Bill-Text.pdf> (removing Section 230 protections for big tech companies unless they submit to an external audit that proves by clear and convincing evidence that their algorithms and content removal practices are politically neutral); Limiting Section 230 Immunity to Good Samaritans Act, S. 3983, 116th Cong. (June 17, 2020); Stop the Censorship Act, H.R. 4027, 116th Cong. (July 25, 2019), <https://www.hawley.senate.gov/sites/default/files/2020-06/Limiting-Section-230-Immunity-to-Good-Samaritans-Act.pdf> (denying Section 230 protections unless ICS providers update their terms of service to operate in good faith and pay a \$5,000 or actual damages or higher plus attorney’s fees if they violate that promise, and defining “good faith” to bar selective enforcement); Online Freedom and Viewpoint Diversity Act, S. 4534, 116th Cong. (Sept. 8, 2020), <https://www.congress.gov/bill/116th-congress/senate-bill/4632> (“amend[ing] the Communications Act of 1934 to modify the scope of protection from civil liability for ‘good Samaritan’ blocking and screening of offensive material”); Stopping Big Tech Censorship Act, S. 4062, 116th Cong. (June 24, 2020), <https://www.congress.gov/bill/116th-congress/senate-bill/4062> (“amend[ing] section 230 of the Communications Act of 1934 to require that providers and users of an interactive computer service meet certain standards to qualify for liability protections.”).

²⁶ Platform Accountability and Consumer Transparency Act, S. 4066, 116th Cong. § 2(9) (June 24, 2020), <https://www.congress.gov/116/bills/s4066/BILLS-116s4066is.pdf>. (“The term “small business provider” means a provider of an interactive computer service that, during the most recent 24-month period— (A) received fewer than 1,000,000 monthly active users or monthly visitors; and (B) accrued revenue of less than 19 \$25,000,000.”).

content that are allowed on the interactive computer service,” (ii) follow certain procedures (providing notice to affected users and allowing appeals) after taking down content they created, and (iii) issue annual transparency reports. The FTC could sue ICS providers for failing to take down “policy-violating content” within 14 days of being provided notice of it. But unlike Republican proposals, the PACT Act would *not* allow ICS providers to be sued for how they interpret or apply their terms of service, nor would it require any kind of neutrality or limit the criteria on which content can be moderated.²⁷ Thus, this draft bill avoids the most direct interference with the editorial discretion of ICS providers in choosing which content they want to carry. The bill would make two other major amendments to Section 230: it would let state Attorneys General enforce federal civil law and require platforms to take down user content that a court has deemed illegal.²⁸ While still problematic, compared to other bills to amend Section 230, the PACT Act shows a better understanding of what the law currently is and how content moderation is done²⁹ Rep. Jan Schakowsky (D-IL) has floated a discussion draft of the Online Consumer Protection Act, which would, notwithstanding any protection of Section 230, require all “social media companies” (regardless of size) to “describe the content and behavior the social media platform or online marketplace permits or does not permit on its service” in both human-readable and machine-readable form. The FTC would punish any violations of terms of service as deceptive practices.³⁰

This chapter focuses on these and other complaints about “content moderation” because ICS providers are far more likely to be subject to unfair competition and

²⁷ *Id.*

²⁸ Daphne Keller, *CDA 230 Reform Grows Up: The PACT Act Has Problems, But It’s Talking About The Right Things*, CTR. FOR INTERNET & SOC’Y (July 16, 2020), <https://cyberlaw.stanford.edu/blog/2020/07/cda-230-reform-grows-pact-act-has-problems-it%E2%80%99s-talking-about-right-things>.

²⁹ *Id.*

³⁰ Rep. Schakowsky, Discussion Draft, §§ 5(a)(1)(B), 7(a)(1) (Oct. 2, 2020), https://techfreedom.org/wp-content/uploads/2020/10/Online-Consumer-Protection-Act_discussion-draft_.pdf.

consumer protection claims (meritorious or otherwise) for choosing *not* to carry, or promote, some third party's content. The term is used throughout to include not only blocking or removing third party content or those who post it, but also limiting the visibility of that content (*e.g.*, in "Safe Mode"), making it ineligible for amplification through advertising (even if the content remains up), or making it ineligible for "monetization" (*i.e.*, having advertising appear next to it).

We begin by providing an introduction to this statute, its origins, and its application by the courts since 1996. We then explain the interaction between Section 230 and the antitrust and consumer-protection laws. We conclude by discussing current proposals to amend or reinterpret Section 230 aimed specifically at making it easier to bring antitrust and consumer protection suits for content moderation decisions.

I. CONGRESS ENACTED SECTION 230 TO ENCOURAGE CONTENT MODERATION.

Recently, DOJ has claimed "the core objective of Section 230 [is] to reduce online content harmful to children."³¹ This is an accurate summary of what the Communications Decency Act, as introduced in the Senate by Sen. John Exon (D-NE), aimed to accomplish. But it is a complete misrepresentation of Section 230, an entirely separate piece of legislation first introduced in the House by Rep. Chris Cox (R-CA) and Ron Wyden (D-OR) as the Internet Freedom and Family Empowerment Act. As Cox recently explained:

One irony . . . persists. When legislative staff prepared the House-Senate conference report on the final Telecommunications Act, they grouped both Exon's Communications Decency Act and the Internet Freedom and Family Empowerment Act into the same legislative title. So the Cox-Wyden amendment became Section 230 of the Communications Decency Act—the very piece of legislation it was designed to rebuke. Today, with the original Exon legislation having been declared unconstitutional, it is that law's polar opposite which bears Senator Exon's label.³²

³¹ U.S. Dept. of Justice, *Department of Justice's Review of Section 230 of the Communications Decency Act of 1996* (Sept. 23, 2020), https://www.justice.gov/ag/departments-justice-s-review-section-230-communications-decency-act-1996?utm_medium=email&utm_source=govdelivery.

³² Cox, *supra* note 20, ¶ 43.

Rejecting the idea that Section 230 was “a necessary counterpart” to the rest of the Communications Decency Act as Trump’s DOJ has claimed,³³ Cox notes:

The facts that the Cox-Wyden bill was designed as an alternative to the Exon approach; that the Communications Decency Act was uniformly criticized during the House debate by members from both parties, while not a single Representative spoke in support of it; that the vote in favor of the Cox-Wyden amendment was 420-4; and that the House version of the Telecommunications Act included the Cox-Wyden amendment while pointedly excluding the Exon amendment—all speak loudly to this point.³⁴

Newt Gingrich, then Speaker of the House, as Cox notes:

slammed the Exon approach as misguided and dangerous. “It is clearly a violation of free speech, and it’s a violation of the right of adults to communicate with each other,”[said Gingrich], adding that Exon’s proposal would dumb down the internet to what censors believed was acceptable for children to read. “I don’t think it is a serious way to discuss a serious issue,” he explained, “which is, how do you maintain the right of free speech for adults while also protecting children in a medium which is available to both?”³⁵

Section 230 provided a simple answer to that question: empowering the providers and users of Internet services to decide for themselves how to approach content moderation. Instead of one right answer for the entire country, there would be a diversity of approaches from which users could choose—a “Utopia of Utopias,” to borrow the philosopher Robert Nozick’s famous phrase.³⁶ As Rep. Cox put it, “protecting speech and privacy on the internet from government regulation, and incentivizing blocking and filtering technologies that individuals could use to become their own censors in their own households”³⁷ were among the core purposes of Section 230.

³³ NTIA Petition, *supra* note 23.

³⁴ Cox, *supra* note 20, ¶ 64.

³⁵ *Id.* ¶ 29 (quoting *Gingrich Opposes Smut Rule for Internet*, N.Y. TIMES, June 22, 1995, A20).

³⁶ ROBERT NOZICK, ANARCHY, STATE, AND UTOPIA 311-312 (1974) (“[T]here will not be one kind of community existing and one kind of life led in utopia. Utopia will consist of utopias, of many different and divergent communities in which people lead different kinds of lives under different institutions. Some kinds of communities will be more attractive to most than others; communities will wax and wane. People will leave some for others or spend their whole lives in one. Utopia is a framework for utopias, a place where people are at liberty to join together voluntarily to pursue and attempt to realize their own vision of the good life in the ideal community but where no one can impose his own utopian vision upon others.”).

³⁷ Cox, *supra* note 20, ¶ 24.

What’s also important to note is that only Section 230, a separate bill that was merged with CDA, is still standing. The Communications Decency Act, which *did* aim to protect children online, was found to be unconstitutional in a landmark 7-2 decision by the Supreme Court.³⁸ Justice John Paul Stevens wrote that the CDA placed “an unacceptably heavy burden on protected speech” that “threaten[ed] to torch a large segment of the Internet community.”³⁹

Section 230 empowered not only content controls within each household but, perhaps even more importantly, choice among communities with different approaches: Facebook, Twitter, YouTube, Gab, and Parler all offer markedly different “utopias” among which users—and advertisers—are free to choose.

It is commonly said that that “Section 230(c)(1) . . . was intended to preserve the rule in *Cubby v. Compuserve*: platforms that simply post users’ content, without moderating or editing such content, have no liability for the content.”⁴⁰ In fact, Section 230 voided both *Cubby, Inc. v. CompuServe Inc.*⁴¹ and *Stratton Oakmont, Inc. v. Prodigy Servs. Co.*⁴² Both decisions created a version of the “Moderator’s Dilemma,” in which websites have a perverse incentive to avoid content moderation because it will increase their liability. *Prodigy*, more famously, held websites liable by virtue of attempting to moderate content. *Compuserve* found no liability, but made clear that this finding depended on the fact that CompuServe had not been provided adequate notice of the defamatory content,

³⁸ *Reno v. Am. Civil Liberties Union*, 521 U.S. 844 (1997).

³⁹ *Id.* at 882.

⁴⁰ Daniel Barnhizer & George Mocsary, Contract Law Professors Comment on the NTIA Petition for Rulemaking and Section 230 of the Communications Act of 1934, at 2 (Filed Sept. 3, 2020), <https://ecfsapi.fcc.gov/file/10902206336251/Contract%20230%20Comments-barnhizer%20mocsary.pdf>; see also Nat’l Telecomm. & Info. Admin., Reply Comments in the Matter of Section 230 of the Communications Act of 1934, File No. RM-11862, 18 (Sept. 17, 2020), https://www.ntia.gov/files/ntia/publications/ntia_reply_comments_in_rm_no._11862.pdf.

⁴¹ 776 F. Supp. 135 (S.D.N.Y. 1991).

⁴² 1995 WL 323710 (N.Y. Sup. Ct., May 24, 1995) (unpublished).

implying that such notice *would* trigger a takedown obligation under a theory of distributor liability.⁴³ Thus, *Compuserve* created a perverse incentive not to become aware of the unlawful nature of user content. Similarly, many critics of Section 230 insist the statute is being misapplied because the companies it protects are “obviously publishers”⁴⁴—when the entire purpose of 230(c)(1), as we will see next, is to say that the traditional distinctions among publishers, distributors, and other actors are irrelevant.

II. A PRIMER ON THE STATUTE

To avoid misinterpreting Section 230, practitioners must parse the text of the statute carefully. “The CDA . . . does more than just overrule *Stratton Oakmont*,” as the Tenth Circuit observed. “To understand the full reach of the statute, we will need to examine some of the technical terms used in the CDA.”⁴⁵ Let us do exactly that.

A. Section 230 Protects Far More than Just “Big Tech”

As Section 230 has become more politicized, elected officials and advocates on both sides of the aisle have decried the law as a subsidy to “Big Tech.” This claim is false in at least three ways. First, all three of Section 230’s immunity provisions are worded the same way, protecting any “provider *or user* of an interactive computer service.”⁴⁶ For example, President Trump has used Section 230(c)(1) to dismiss a lawsuit against him for retweeting another user’s content.⁴⁷ Every user of social media is likewise protected by

⁴³ *Cubby*, 776 F. Supp. 135 (S.D.N.Y. 1991). Unlike *Stratton Oakmont*, the *Cubby* court found no liability, but made clear that this finding depended on the fact that CompuServe had not been provided adequate notice of the defamatory content, thus implying (strongly) that such notice would trigger a takedown obligation under a theory of distributor liability. *Id.* at 141.

⁴⁴ See Adam Candeub & Mark Epstein, *Platform, or Publisher?* CITY JOURNAL (May 7, 2018), <https://www.city-journal.org/html/platform-or-publisher-15888.html>; Adam Candeub, *Social Media Platforms or Publishers? Rethinking Section 230*, THE AM. CONSERVATIVE (June 19, 2019), <https://www.theamericanconservative.com/articles/social-media-platforms-or-publishers-rethinking-section-230/>.

⁴⁵ Fed. Trade Comm’n v. Accusearch Inc., 570 F.3d 1187, 1195 (10th Cir. 2009).

⁴⁶ 47 U.S.C. § 230(c).

⁴⁷ Cristiano Lima, *Before Bashing Tech’s Legal Shield, Trump Used It To Defend Himself in Court*, POLITICO (June

230(c)(1) when they reshare third party content. Second, Section 230 applies to far more than just “social media sites.” The term “information content provider” encompasses a wide variety of services, and thus allows the statute to be truly technologically neutral. Third, as we and other experts noted in a declaration of “principles for lawmakers” concerning the law last year:

Section 230 applies to services that users never interact with directly. The further removed an Internet service—such as a DDOS protection provider or domain name registrar—is from an offending user’s content or actions, the more blunt its tools to combat objectionable content become. Unlike social media companies or other user-facing services, infrastructure providers cannot take measures like removing individual posts or comments. Instead, they can only shutter entire sites or services, thus risking significant collateral damage to inoffensive or harmless content. Requirements drafted with user-facing services in mind will likely not work for these non-user-facing services.⁴⁸

B. What Claims Aren’t Covered by Section 230

Section 230(e) preserves claims raised under federal criminal law, “any law pertaining to intellectual property,”⁴⁹ the Electronic Communications Privacy Act and “any similar state law,”⁵⁰ certain sex trafficking laws,⁵¹ and “any State law that is consistent with this section.”⁵²

Thus, Section 230’s immunities covers civil claims, both state and federal, and *all* state criminal liability—insofar as they either seek to hold a defendant liable as a publisher ((c)(1)), for content removal decisions ((c)(2)(A)), or for providing tools for content removal decisions to others ((c)(2)(B)), as discussed in the following sections.

The National Association of Attorneys General (NAAG) has asked Congress to

4, 2020), <https://www.politico.com/news/2020/06/04/tech-legal-trump-court-301861>.

⁴⁸ *Liability for User-Generated Content Online, Principles for Lawmakers*, at 2 (July 11, 2019), <https://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=2992&context=historical>.

⁴⁹ 47 U.S.C. § 230(e)(2).

⁵⁰ 47 U.S.C. § 230(e)(4).

⁵¹ 47 U.S.C. § 230(e)(5).

⁵² 47 U.S.C. § 230(e)(3).

amend Section 230 to preserve state criminal liability.⁵³ But broad preemption of state criminal law reflected a deliberate policy judgment, as Rep. Cox has noted:

the essential purpose of Section 230 is to establish a uniform federal policy, applicable across the internet, that avoids results such as the state court decision in *Prodigy*. The internet is the quintessential vehicle of interstate, and indeed international, commerce. Its packet-switched architecture makes it uniquely susceptible to multiple sources of conflicting state and local regulation, since even a message from one cubicle to its neighbor inside the same office can be broken up into pieces and routed via servers in different states. Were every state free to adopt its own policy concerning when an internet platform will be liable for the criminal or tortious conduct of another, not only would compliance become oppressive, but the federal policy itself could quickly be undone. All a state would have to do to defeat the federal policy would be to place platform liability laws in its criminal code. Section 230 would then become a nullity. Congress thus intended Section 230 to establish a uniform federal policy, but one that is entirely consistent with robust enforcement of state criminal and civil law.⁵⁴

*C. The (c)(1) Immunity Protects the Kind of Editorial
Decisions Made by Publishers, Including Content Moderation*

The vast majority of Section 230 cases are resolved under 230(c)(1), a provision that is more complicated than it may seem at first blush: “No provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider.”⁵⁵

First, (c)(1) protects ICS providers and users—but only insofar as they are not themselves information content providers (ICPs)—*i.e.*, not responsible, even “in part, for the creation or development of information provided through the Internet or any other interactive computer service.”⁵⁶ Rep. Cox (R-CA), has called “in part” the two most

⁵³ Nat’l Ass’n of Att’ys Gen., Letter Regarding Amendment of Communications Decency Act (May 23, 2019), <https://www.naag.org/assets/redesign/files/sign-on-letter/CDA%20Amendment%20NAAG%20Letter.pdf>.

⁵⁴ Cox, *supra* note 20, ¶ 48.

⁵⁵ 47 U.S.C. § 230(c)(1).

⁵⁶ 47 U.S.C. § 230(f)(3) (“The term ‘information content provider’ means any person or entity that is responsible, in whole or in part, for the creation or development of information provided through the Internet or any other interactive computer service.”).

important words in the statute.⁵⁷ “The statute’s fundamental principle,” he explains, “is that content creators should be liable for any illegal content they create.”⁵⁸

Thus, online publications and social networks alike are protected against liability for user comments unless they modify those comments in a way that “contributes to the alleged illegality—such as by removing the word ‘not’ from a user’s message reading ‘[Name] did *not* steal the artwork’ in order to transform an innocent message into a libelous one.”⁵⁹ But these sites are not protected for articles created by their employees or agents.⁶⁰ By the same token, Section 230(c)(1) does not apply to warning labels added by Twitter to tweets posted by President Trump or any other user—but nor does adding that label to the tweet make Twitter responsible for the contents of the tweet: Trump remains the ICP of that tweet and Twitter remains the ICP only of the label.

In multiple cases, courts have allowed lawsuits to proceed because they found that websites *were* at least partially responsible for content creation. The Federal Trade Commission has won two important victories. In 2009, the Tenth Circuit ruled that Section 230 did not protect Accusearch from being sued for illegally selling private telephone records because “a service provider is ‘responsible’ for the development of offensive content only if it in some way specifically encourages development of what is offensive about the content.”⁶¹ The court concluded:

Accusearch was responsible for the . . . conversion of the legally protected records from confidential material to publicly exposed information. Accusearch solicited requests for such confidential information and then paid researchers to obtain it. It knowingly sought to transform virtually unknown information into a publicly available commodity. And as the district court found and the record shows, Accusearch knew that its researchers were

⁵⁷ Armchair discussion with Former Congressman Cox, Back to the Future of Tech Policy, YouTube (Aug. 10, 2017), https://www.youtube.com/watch?time_continue=248&v=iBEWXIn0JUY.

⁵⁸ Cox, *supra* note 20, ¶ 1.

⁵⁹ Fair Hous. Council of San Fernando Valley v. Roommates.com, LLC, 521 F.3d 1157, 1169 (9th Cir. 2008).

⁶⁰ See, e.g., Enigma Software Grp. USA, LLC v. Bleeping Computer LLC, 194 F. Supp. 3d 263 (S.D.N.Y. 2016) (pseudonymous user responsible for posting defamatory content acted as the agent of the website).

⁶¹ Fed. Trade Comm’n v. Accusearch Inc., 570 F.3d 1187, 1199 (10th Cir. 2009).

obtaining the information through fraud or other illegality.⁶²

Similarly, in *FTC v. Leadclick Media, LLC*, the Second Circuit Court of Appeals allowed the FTC to proceed with its deceptive advertising claims against Leadclick. “While LeadClick did not itself create fake news sites to advertise products,”⁶³ the court concluded that the company had:

[R]ecruited affiliates for the LeanSpa account that used false news sites. LeadClick paid those affiliates to advertise LeanSpa products online, knowing that false news sites were common in the industry. LeadClick employees occasionally advised affiliates to edit content on affiliate pages to avoid being “crazy [misleading],” and to make a report of alleged weight loss appear more “realistic” by reducing the number of pounds claimed to have been lost. LeadClick also purchased advertising banner space from legitimate news sites with the intent to resell it to affiliates for use on their fake news sites, thereby increasing the likelihood that a consumer would be deceived by that content.⁶⁴

Second, the (c)(1) immunity “precludes courts from entertaining claims that would place a computer service provider in a publisher’s role.”⁶⁵ In its 1997 *Zeran* decision, the Fourth Circuit became the first appellate court to interpret this provision, concluding that “lawsuits seeking to hold a service provider liable for its exercise of a publisher’s traditional editorial functions—such as deciding whether to publish, withdraw, postpone or alter content—are barred.”⁶⁶ Thus, courts have held that (c)(1) bars claims that an internet company unlawfully hosted a third party’s defamatory blog post;⁶⁷ claims that a social-media platform unlawfully provided an outlet for, or algorithmically “promoted” the content of, terrorists;⁶⁸ and claims that an Internet service provider’s failure to remove

⁶² *Id.*

⁶³ Fed. Trade Comm’n v. LeadClick Media, LLC, 838 F.3d 158, 164 (2d Cir. 2016).

⁶⁴ *Id.* at 176.

⁶⁵ *Zeran v. Am. Online*, 129 F.3d 327, 330 (4th Cir. 1997).

⁶⁶ *Id.*; see also *Barrett v. Rosenthal*, 146 P.3d 510, 515 (Cal. 2006).

⁶⁷ *Bennett v. Google, LLC*, 882 F.3d 1163, 1168 (D.C. Cir. 2018) (“[T]he decision to print or retract is fundamentally a publishing decision for which the CDA provides explicit immunity. . . . [I]f Bennett takes issue with Pierson’s post, her legal remedy is against Pierson himself as the content provider, not against Google as the publisher.”).

⁶⁸ *Force v. Facebook, Inc.*, 934 F.3d 53, 69-70 (2d Cir. 2019) (Section 230(c)(1) immunity because “Facebook does not edit (or suggest edits) for the content that its users—including Hamas—publish”); *id.* at 70

comments from a chat room amounted to breach of contract and a violation of the civil-rights laws.⁶⁹

D. Section 230(c)(2)(A) Protects Only Content

Moderation Decisions, and Works Differently from (c)(1)

The vast majority of Section 230 cases are resolved under 230(c)(1).⁷⁰ Following *Zeran*, courts have resolved many content moderation cases under both (c)(1) and (c)(2)(A), or simply (c)(1) because the analysis is easier.⁷¹ The two provide somewhat overlapping, but different protections for content moderation. Subparagraph 230(c)(2)(A) says that:

No provider or user of an interactive computer service shall be held liable on account of any action voluntarily taken in good faith to restrict access to or availability of material that the provider or user considers to be obscene, lewd, lascivious, filthy, excessively violent, harassing, or otherwise objectionable, whether or not such material is constitutionally protected⁷²

Note how much this provision differs from (c)(1). On the one hand, (c)(2)(A)'s protections are broader: they do not depend on the ICS/ICP distinction, so (c)(2)(A) applies even when an ICS provider or user is responsible, at least in part, for developing the content at issue. On the other, its immunity is narrower, protecting only against liability only for content moderation, not liability for content actually published.⁷³ Furthermore, that

("making information more available is, again, an essential part of traditional *publishing*.").

⁶⁹ *Noah v. AOL Time Warner Inc.*, 261 F. Supp. 2d 532, 538 (E.D. Va. 2003) (holding that the plaintiff's claims "that AOL is liable for its refusal to intervene and stop the allegedly harassing statements" seeks "to place AOL in a publisher's role, in violation of [Section] 230.").

⁷⁰ Elizabeth Banker, *Internet Association: A Review of Section 230's Meaning & Application Based On More Than 500 Cases*, INTERNET ASSOCIATION, at 10 (July 27, 2020), https://internetassociation.org/wp-content/uploads/2020/07/IA_Review-Of-Section-230.pdf (concluding, based on a study of more than 500 Section 230 cases, that Section 230 "typically" protects content moderation "through application of subsection (c)(1) rather than (c)(2).").

⁷¹ Eric Goldman, *Online User Account Termination and* 47 U.S.C. § 230(c)(2), 2 U.C. IRVINE L. REV. 659, 664 (2012).

⁷² 47 U.S.C. § 230(c)(2)(A).

⁷³ See *infra* at 51.

protection is contingent on a showing of good faith. As we shall see, much of the current policy debate over rewriting or reinterpreting Section 230 rests on the notion that only (c)(2)(A) should protect content moderation,⁷⁴ and that the kinds of content moderation decisions it protects should be narrowed significantly.⁷⁵

E. Section 230(c)(2)(B) Protects the Provision of Content Removal Tools to Others

While it is often said that Section 230 contains two immunities—(c)(1) and (c)(2)—it actually contains three, as (c)(2)(A) and (c)(2)(B) work differently and serve different functions. While (c)(2)(A) protects ICS users and providers in making content removal decisions, (c)(2)(B) protects “any action taken to enable or make available to information content providers or others the technical means to restrict access to material described in [(c)(2)(B)].”⁷⁶ There has been relatively little litigation involving this provision, most of which involves anti-malware tools.⁷⁷ But (c)(2)(B) also protects makers of the parental control tools built into operating systems for computers, mobile devices, televisions, gaming consoles, etc., as well as additional tools and apps that users can add to those devices. Likewise, (c)(2)(B) protects other tools offered to users, such as Social Fixer, a popular online application that allows consumers to tailor the content they receive on Facebook.⁷⁸ With a few clicks, consumers can hide posts involving specified keywords or

⁷⁴ See *infra* at 49-53.

⁷⁵ See *infra* at 53-57.

⁷⁶ 47 U.S.C. § 230(c)(2)(B). Actually, (c)(2)(B) says “material described in paragraph (1),” but courts uniformly recognize this as a “typographical error.” *Zango, Inc. v. Kaspersky Lab, Inc.*, 568 F.3d 1169, 1173 n.5 (9th Cir. 2009).

⁷⁷ See, e.g., *Enigma Software Grp. USA, LLC v. Malwarebytes, Inc.*, 946 F.3d 1040 (9th Cir. 2019); *Zango, Inc. v. Kaspersky Lab, Inc.*, 568 F.3d 1169 (9th Cir. 2009); *Fair Hous. Council v. Roommates.com, LLC*, 521 F.3d 1157 (9th Cir. 2008); *Carafano v. Metrosplash.com, Inc.*, 339 F.3d 1119 (9th Cir. 2003); *PC Drivers Headquarters, LP v. Malwarebytes Inc.*, 371 F. Supp. 3d 652 (N.D. Cal. 2019); *PC Drivers Headquarters, LP v. Malwarebytes, Inc.*, No. 1:18-CV-234-RP, 2018 U.S. Dist. WL 2996897 (W.D. Tex. Apr. 23, 2018); *Barnes v. Yahoo!, Inc.*, 570 F.3d 1096 (9th Cir. 2009); *E360insight, LLC v. Comcast Corp.*, 546 F. Supp. 2d 605 (N.D. Ill. 2008); *Perfect 10, Inc. v. CCBill LLC*, 488 F.3d 1102 (9th Cir. 2007).

⁷⁸ SOCIAL FIXER, <https://www.socialfixer.com> (last visited June 9, 2020).

authors, filter out political content, or block targeted advertisements. Like parental tools, Social Fixer puts the consumer in control; in the language of Section 230(c)(2)(B), it provides the “technical means” by which the consumer chooses what fills her computer screen.

F. Does Section 230 Require “Neutrality?”

In *Marshall’s Locksmith v. Google*, the D.C. Circuit dismissed, under Section 230, false advertising and Sherman Act claims by locksmiths who claimed that “Google, Microsoft, and Yahoo! have conspired to ‘flood the market’ of online search results with information about so-called ‘scam’ locksmiths, in order to extract additional advertising revenue.”⁷⁹ The case makes clear that Section 230 does bar some antitrust claims, but also merits discussion because of the potentially confusing nature of its discussion of “neutrality.”

Plaintiffs alleged that the way search engines displayed “scam” locksmith listings on their map tools alongside those for “legitimate” locksmiths “allows scam locksmiths to amplify their influence.”⁸⁰ They argued that Section 230(c)(1) ought not apply because the maps constituted “[e]nhanced content that was derived from third-party content, but has been so augmented and altered as to have become new content and not mere editorialization”⁸¹

The court disagreed. “We have previously held,” it noted, “that ‘a website does not create or develop content when it merely provides a neutral means by which third parties can post information of their own independent choosing online.’”⁸² The defendants in the case at hand, it continued, had “use[d] a neutral algorithm” to “convert

⁷⁹ *Marshall’s Locksmith Serv. Inc. v. Google, LLC*, 925 F.3d 1263, 1265 (D.C. Cir. 2019).

⁸⁰ *Id.* at 1265.

⁸¹ *Id.* at 1268 (citation omitted).

⁸² *Id.* at 1270-71 (quoting *Klayman v. Zuckerberg*, 753 F.3d 1354, 1358 (D.C. Cir. 2014)).

third-party indicia of location into pictorial form.”⁸³ The defendants’ algorithms were “neutral” in that they did “not distinguish between legitimate and scam locksmiths” The (c)(1) immunity thus defeated the locksmiths’ claims.⁸⁴

“Because the defendants’ map pinpoints hew to the third-party information from which they are derived,” the court did not need to “decide precisely when an entity that derives information can be considered to have ‘creat[ed] or develop[ed]’ it.”⁸⁵ This and other lines in the opinion might give the impression that “neutrality” is a prerequisite to all forms of Section 230 immunity. But “neutrality” is usually not such a condition. To hold otherwise would nullify the many opinions holding that a defendant enjoys Section 230 immunity whenever it acts as a publisher. No publisher that exercises editorial discretion can be wholly “neutral.” As Prof. Eric Goldman notes, “The ‘neutrality’ required in this case relates only to the balance between legal and illegal content.”⁸⁶

III. SECTION 230 BARS ANTITRUST CLAIMS ONLY INsofar AS THE FIRST AMENDMENT WOULD BAR THEM TOO.

Does Section 230 bar otherwise valid antitrust claims? No. Properly understood, both the (c)(1) and (c)(2)(A) immunities protect decisions to moderate or prioritize third-party content exactly inasmuch as the First Amendment itself would apply. Just as the First Amendment does not offer complete immunity to newspapers for how they handle third-party content, neither does Section 230.

⁸³ *Id.* at 1270, 1271.

⁸⁴ *Id.* at 1271.

⁸⁵ *Zeran v. Am. Online, Inc.*, 129 F.3d 327, 330 (4th Cir. 1997).

⁸⁶ Eric Goldman, *D.C. Circuit Issues Sweeping Pro-Section 230 Opinion—Marshall’s Locksmith v. Google*, TECH. & MARKETING L. BLOG (June 7, 2019), <https://blog.ericgoldman.org/archives/2019/06/d-c-circuit-issues-sweeping-pro-section-230-opinion-marshalls-locksmith-v-google.htm>.

A. Both (c)(1) and (c)(2)(A) Protect the Exercise of a Publisher's

Editorial Discretion Inasmuch as It Would Be Protected by the First Amendment

The (c)(1) immunity bars only those claims that hold an ICS provider (or user) liable as the “publisher” of content provided by another—*i.e.*, “deciding whether to publish, withdraw, postpone or alter content.”⁸⁷ In other words, (c)(1) protects the exercise of editorial discretion protected by the First Amendment itself: “The choice of material to go into a newspaper, and the decisions made as to limitations on the size and content of the paper, and treatment of public issues and public officials—whether fair or unfair—constitute the exercise of editorial control and judgment.”⁸⁸ “Since *all* speech inherently involves choices of what to say and what to leave unsaid . . . for corporations as for individuals, the choice to speak includes within it the choice of what not to say.”⁸⁹ In *Hurley v. Irish-American Gay, Lesbian and Bisexual Group of Boston*, the Supreme Court barred the city of Boston from forcing organizers’ of the St. Patrick’s Day parade to include pro-LGBTQ individuals, messages, or signs that conflicted with the organizer’s beliefs.⁹⁰ The “general rule,” declared the court, is “that the speaker has the right to tailor the speech, applies not only to expressions of value, opinion, or endorsement, but equally to statements of fact the speaker would rather avoid.”⁹¹ Courts have recognized that social media publishers have the same rights under *Miami Herald* as newspapers to reject content (including ads) provided to them by third parties.⁹²

The (c)(2)(A) immunity does not explicitly turn on whether the cause of action

⁸⁷ *Zeran v. Am. Online, Inc.*, 129 F.3d 327, 330 (4th Cir. 1997).

⁸⁸ *Miami Herald Publ’g Co. v. Tornillo*, 418 U.S. 241, 258 (1974).

⁸⁹ *Pac. Gas & Elec. Co. v. Pub. Utilities Comm’n of Cal.*, 475 U.S. 1, 11, 16 (1986) (plurality opinion) (emphasis in original).

⁹⁰ 515 U.S. 557, 573 (1995).

⁹¹ *Id.* at 573.

⁹² *See, e.g., Langdon v. Google, Inc.*, 474 F. Supp. 2d 622 (D. Del. 2007).

involves the ICS provider being “treated as the publisher,” yet it clearly protects a subset of the cluster of rights protected by *Miami Herald*: decisions to “restrict access to or availability of material that the provider or user considers to be obscene, lewd, lascivious, filthy, excessively violent, harassing, or otherwise objectionable, whether or not such material is constitutionally protected.”⁹³ Including the broad catch-all “otherwise objectionable” ensures that this immunity is fully coextensive with the First Amendment right of ICS providers and users, recognized under *Hurley*, to “avoid” speech they find repugnant.

As the Tenth Circuit has noted, “the First Amendment does not allow antitrust claims to be predicated solely on protected speech.”⁹⁴ Thus, Moody’s publication of an article giving a school district’s bonds a negative rating could not give rise to an antitrust claim.⁹⁵ In all of the cases cited by the plaintiff, “the defendant held liable on an antitrust claim engaged in speech related to its anticompetitive scheme,” but in each, that speech was incidental to the antitrust violation.⁹⁶ Notably, in none of these cases was the “speech” at issue the exercise of editorial discretion not to publish, or otherwise associate

⁹³ 47 U.S.C. § 230(c)(2)(A).

⁹⁴ *Jefferson Cty. Sch. Dist. No. R-1 v. Moody’s Inv’r Servs.*, 175 F.3d 848, 860 (10th Cir. 1999).

⁹⁵ *Id.*

⁹⁶ *Id.* at 859 (providing as support the following string citation: “*See, e.g., Federal Trade Comm’n v. Superior Court Trial Lawyers Ass’n*, 493 U.S. 411, 430-32 (1990) (upholding finding that an attorneys’ association’s boycott of assignments to cases involving indigent defendants violated the antitrust laws even though the boycott had an expressive component); *National Society of Professional Engineers v. United States*, 435 U.S. 679 (1978) (upholding finding that a professional association’s ban on competitive bidding for engineering services violated the antitrust laws even though one means of carrying out the ban was through the publication of an ethical code); *American Society of Mechanical Eng’rs v. Hydrolevel Corp.*, 456 U.S. 556 (1982) (upholding finding that professional association violated the antitrust laws through the issuance of an inaccurate safety report used to undermine a competitor’s product); *Wilk v. American Medical Ass’n*, 895 F.2d 352, 357-58, 371 (7th Cir. 1990) (upholding finding that a medical association’s boycott of chiropractors violated the antitrust laws even though one means of enforcing the boycott was through the association’s code of ethics). More generally, the School District relies on decisions holding that the First Amendment does not provide publishers with immunity from antitrust laws. *See Citizen Publishing Co v. United States*, 394 U.S. 131, 135 (1969) (upholding injunction prohibiting newspaper publishers from engaging in joint operating agreement) . . .”).

with, the speech of others. Antitrust suits against web platforms must be grounded in economic harms to competition, not the exercise of editorial discretion.⁹⁷ Prof. Eugene Volokh (among the nation’s top free speech scholars) explains:

it is constitutionally permissible to stop a newspaper from “forcing advertisers to boycott a competing” media outlet, when the newspaper refuses advertisements from advertisers who deal with the competitor. *Lorain Journal Co. v. United States*, 342 U.S. 143, 152, 155 (1951). But the newspaper in *Lorain Journal Co.* was not excluding advertisements because of their content, in the exercise of some editorial judgment that its own editorial content was better than the proposed advertisements. Rather, it was excluding advertisements solely because the advertisers—whatever the content of their ads—were also advertising on a competing radio station. *The Lorain Journal Co. rule thus does not authorize restrictions on a speaker’s editorial judgment about what content is more valuable to its readers.*⁹⁸

This is true even against “virtual monopolies.” As Volokh explains, the degree of a media company’s market power does not diminish the degree to which the First Amendment protects its editorial discretion.⁹⁹

For example, a federal court dismissed an antitrust lawsuit alleging that Facebook had attempted to eliminate an advertising competitor by blocking users of a browser extension that super-imposed its own ads onto Facebook’s website:

Facebook has a right to control its own product, and to establish the terms with which its users, application developers, and advertisers must comply in order to utilize this product. . . . Facebook has a right to protect the infrastructure it has developed, and the manner in which its website will be viewed.¹⁰⁰

⁹⁷ *Newspaper Printing Corp. v. Galbreath*, 580 S.W. 2d 777, 779 (Tenn. 1979) (“Newspaper publishers may refuse to publish whatever advertisements they do not desire to publish and this is true even though the newspaper in question may enjoy a virtual monopoly in the area of its publication.”).

⁹⁸ Eugene Volokh & Donald Falk, *First Amendment Protection for Search Engine Search Results*, at 22 (UCLA School of Law Research Paper No. 12-22, April 20, 2012) (emphasis added).

⁹⁹ *Id.* at 23 (Volokh explains: “the Ninth Circuit has concluded that even a newspaper that was plausibly alleged to have a ‘substantial monopoly’ could not be ordered to run a movie advertisement that it wanted to exclude, because ‘[a]ppellant has not convinced us that the courts or any other governmental agency should dictate the contents of a newspaper.’ *Associates & Aldrich Co. v. Times Mirror Co.*, 440 F.2d 133, 135 (9th Cir. 1971). And the Tennessee Supreme Court similarly stated that, ‘[n]ewspaper publishers may refuse to publish whatever advertisements they do not desire to publish and this is true even though the newspaper in question may enjoy a virtual monopoly in the area of its publication.’ *Newspaper Printing Corp. v. Galbreath*, 580 S.W. 2d 777, 779 (Tenn. 1979).”)

¹⁰⁰ *Sambreel Holdings LLC v. Facebook, Inc.*, 906 F. Supp. 2d 1070, 1075-76 (S.D. Cal. 2012).

The court added:

There is no fundamental right to use Facebook; users may only obtain a Facebook account upon agreement that they will comply with Facebook's terms, which is unquestionably permissible under the antitrust laws. It follows, therefore, that Facebook is within its rights to require that its users disable certain products before using its website.¹⁰¹

Antitrust law is so well-settled here that the court did not even need to mention the First Amendment. Instead, the court simply cited *Trinko*: "as a general matter, the Sherman Act 'does not restrict the long recognized right of [a] trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal.'" ¹⁰² That "discretion" closely parallels the First Amendment right of publishers to exclude content they find objectionable under *Miami Herald*.¹⁰³

Just as *The Lorain Journal* was not acting "as a publisher" when it refused to host ads from advertisers that did not boycott its radio competitor, it was also not acting "in good faith." In this sense, the two concepts serve essentially the same function as limiting features. Each ensures that the immunity to which it applies does not protect conduct that would not be protected by the First Amendment. Thus, either immunity could be defeated by showing that the actions at issue were not matters of editorial discretion, but of anti-competitive conduct.

B. How Courts Might Decide Whether Section 230 Bars Specific Competition Law Claims

Epic Games recently began offering users of Fortnite, its wildly popular gaming app, the ability to make in-game purchases directly from Fortnite's website, thus avoiding the 30% fee charged for all purchases made through Apple's App Store. Because this violated Apple's longstanding terms of service for the App Store, Apple banned the

¹⁰¹ *Id.* at 1080.

¹⁰² *Id.* at 1075 (quoting *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko*, 540 U.S. 398, 408 (2004)).

¹⁰³ See *Miami Herald*, 418 U.S. at 258; see *supra* note 88 and associated text (discussing *Miami Herald*).

game. Fortnite responded by filing an antitrust suit.¹⁰⁴ Apple has not raised Section 230 as a defense, and for good reason: Apple may or may not have violated the antitrust laws, but it was clearly *not* operating as a “publisher” when it enforced rules intended to protect a key part of its business model.

By contrast, if Facebook refused to carry ads from publishers that also bought ads on one of Google’s ad networks, the situation would be exactly the same as in *Lorain Journal*. Facebook’s potential liability would not be because the site was being “treated as the publisher” of ads it refused to run. The same rule should hold in other cases, even though they may be more complicated.

While Google’s AdSense network may appear to be very different from Facebook—Facebook is clearly the “publisher” of its own site while AdSense merely fills ad space on webpages published by others—AdSense is no less an ICP than is Facebook. Thus, Google can claim Section 230 immunity for decisions it makes to limit participation in AdSense (*i.e.*, on which sites AdSense ads appear). Still, Google would be no more protected by Section 230 than *The Lorrain Journal* was by the First Amendment if Google refused to provide display ads via its AdSense network on third party websites simply because those sites also showed display ads from other ad networks.

A somewhat more complicated case is presented by the European Commission’s 2016 complaint against Google for how the company handled exclusivity in a different product: AdSense for Search, which displays ads alongside search results in the custom search engines Google makes available for third party websites to embed on their sites (generally to search the site’s contents).¹⁰⁵ (The Commission fined Google €1.5 billion in

¹⁰⁴ Complaint for Injunctive Relief, *Epic Games, Inc. v Apple Inc.*, No. 3:20-cv-05640 (N.D. Cal. Aug. 13, 2020), https://www.courtlistener.com/recap/gov.uscourts.cand.364265/gov.uscourts.cand.364265.1.0_1.pdf.

¹⁰⁵ European Commission, *Antitrust: Commission Takes Further Steps in Investigations Alleging Google’s Comparison Shopping and Advertising-Related Practices Breach EU Rules*, EUROPEAN COMMISSION (July 14, 2016), https://ec.europa.eu/commission/presscorner/detail/en/IP_16_2532.

2019.¹⁰⁶) The exclusivity clauses Google imposed from 2006 to 2009 seem little different from *Lorrain Journal* or the AdSense hypothetical discussed above. But starting in 2009, Google began replacing exclusivity clauses with “Premium Placement” clauses that worked differently.¹⁰⁷ These clauses required “third parties to take a minimum number of search ads from Google and reserve the most prominent space on their search results pages to Google search ads.”¹⁰⁸ Again, it is hard to see how Google could convince an American court that excluding participation in AdSense for Search based on these restrictions would be an exercise in a publisher’s editorial judgment—and a plaintiff would have a good argument that these requirements were not imposed “in good faith.” (Whether or not such arguments would prevail under U.S. antitrust law would, of course, be an entirely separate question.) But Google’s requirement that “competing search ads cannot be placed above or next to Google search ads”¹⁰⁹ is at least a harder question. Google would have a much stronger argument that this requirement prevented users from mistaking ads provided by third parties from its own ads. Google might object to those third-party ads being shown right next to its own search results not only because their (potentially) lower quality could diminish user expectations of the value of Google’s search ads across the board, including on Google.com, but also because Google has no editorial control over those ads, which might include content that violates Google’s terms of service.

This case would be essentially the same as Google’s refusal to allow participation in its AdSense network by webpages that display content that violates Google’s terms of service—that Google ads do not appear next to hate speech, misinformation, etc. Many large publications have found that Google will refuse to run ads on specific pages because

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

content in the user comments section violated its terms of service. When the scale of such content has become large enough, Google has refused to run ads on the site altogether unless the site separates the comments section from the article, and runs ads only on the article. Some sites, like *Boing Boing*, have done just that, but as we shall see, Google's enforcement of this policy recently sparked a political uproar.

Essentially the same analysis would apply over blocking apps from the app store: Apple, Google, Amazon and Microsoft all block pornography apps from their stores.¹¹⁰ All have banned Gab, the “free speech” social network where little but pornography is moderated, from offering an app in their stores.¹¹¹ Gab may, in some sense, be a competitor to these companies, but each would have an easy argument that they were acting as “publishers,” and in “good faith,” when they banned the Gab app.

C. Why Political Bias in Content Moderation Cannot Give Rise to Antitrust Violations

Now consider competition claims that are even more clearly about the exercise of editorial discretion—claims regarding blocking specific users or publications. When a plaintiff brings both a general antitrust claim and a specific claim about content removal, Section 230 bars the latter but not the former. In *Brittain v. Twitter*, for example, Craig Brittain sued Twitter for suspending four of his accounts.¹¹² The court dismissed all claims

¹¹⁰ *Inappropriate Content*, GOOGLE, INC., <https://support.google.com/googleplay/android-developer/answer/9878810> (“We don't allow apps that contain or promote sexual content or profanity, including pornography, or any content or services intended to be sexually gratifying. Content that contains nudity may be allowed if the primary purpose is educational, documentary, scientific or artistic, and is not gratuitous.”); *App Store Review Guidelines*, APPLE, § 1.1.4, <https://developer.apple.com/app-store/review/guidelines/> (banning “[o]vertly sexual or pornographic material”); *Microsoft Store Policies*, MICROSOFT, § 11.7, <https://docs.microsoft.com/en-us/windows/uwp/publish/store-policies>.

¹¹¹ *Available Apps*, GAB, <https://apps.gab.com/> (last visited Oct. 12, 2020) (“Gab is banned from the Google Play Store and Apple App Store for refusing to censor speech for Google and Apple”). Unlike Apple, Android does allow users to turn on the ability “sideload” apps that are not verified or screened through the official Play store.

¹¹² Brittain, who briefly ran in the 2018 Arizona Republican Senate primary, is best known for having founded *isanybodydown.com*, a site that encouraged users to post revenge porn and identifying information for those associated with it. Antonia Noori Farzan, *Revenge Porn Operator Craig Brittain Running*

under Section 230, save an antitrust claim that did not “arise out of Twitter’s deletion of the Brittain Accounts.”¹¹³ That claim, which attacked Twitter’s alleged “monopolization” of the “social media networking market,”¹¹⁴ was assessed separately under the antitrust laws. (It failed.)

But at least in one case, a plaintiff clearly alleged that account suspension violated a state unfair competition law. The case offers the most thorough explanation of why Section 230 bars such claims about “unfair” or “biased” exercises of editorial discretion. When Jared Taylor, a leading white supremacist,¹¹⁵ first joined Twitter in 2011, the site did not bar (indeed, it all but pledged not to censor) extremist content. But the site reserved the right to revise its terms of service, and in 2017 it “announced ‘updated . . . rules’” on hateful and violent content. These included a requirement that users “not affiliate with organizations that . . . use or promote violence against civilians to further their causes.” Acting under these rules, Twitter banned Taylor and his publication.¹¹⁶ Taylor then sued Twitter for blocking him (and his white-nationalist publication *American Renaissance*) from the site.

Although it dismissed most of Taylor’s lawsuit under Section 230, the trial court let an unfair-competition claim proceed. The California Court of Appeal reversed,¹¹⁷ holding that Section 230 barred *all* of Taylor’s claims. The core question, the court

for Jeff Flake’s Senate Seat, PHOENIX NEW TIMES (Nov. 3, 2017), <https://www.phoenixnewtimes.com/news/revenge-porn-operator-craig-brittain-senate-jeff-flake-kelli-ward-9836220>.

¹¹³ Brittain v. Twitter, Inc., 2019 WL 2423375, at *3 (N.D. Cal. June 10, 2019).

¹¹⁴ *Id.* at *4.

¹¹⁵ See, e.g., S. POVERTY LAW CTR., *Jared Taylor*, <https://www.splcenter.org/fighting-hate/extremist-files/individual/jared-taylor> (last visited Oct. 5, 2020) (quoting Taylor as saying, in 2005, “[b]lack and whites are different. When blacks are left entirely to their own devices, Western civilization—any kind of civilization—disappears.”).

¹¹⁶ Associated Press, *Twitter Suspends White Nationalists as New Rules Take Effect*, L.A. TIMES (Dec. 18, 2017), <https://www.latimes.com/business/technology/la-fi-twitter-white-nationalists-20171218-story.html>.

¹¹⁷ Twitter v. Superior Court *ex rel* Taylor, A154973 (Cal. App. Ct. Aug. 17, 2018), <https://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=2795&context=historical>.

observed, is whether the plaintiff's claim attacks decisions the defendant made while acting as a publisher.¹¹⁸ Such publishing decisions, the court continued, include decisions to "restrict or make available certain material." Thus, a defendant's decision to allow a user to have, or to bar a user from having, a social-media account falls squarely within the Section 230 immunity. "Any activity," the court concluded, "that can be boiled down to deciding whether to exclude material that third parties seek to post online is perforce immune under section 230."¹¹⁹ The court's full analysis offers an excellent summary of current case law.¹²⁰

¹¹⁸ *Id.* at 195.

¹¹⁹ *Id.* at 196 (quoting *Fair Hous. Council of San Fernando Valley v. Roommates.Com, LLC*, 521 F.3d 1157, 1170-71 (9th Cir. 2008); *see also id.* at 195 ("'[Section] 230 precludes courts from entertaining claims that would place a computer service provider in a publisher's role. Thus, lawsuits seeking to hold a service provider liable for its exercise of a publisher's traditional editorial functions—such as *deciding whether to publish, withdraw, postpone or alter content*—are barred.'" (*Barrett v. Rosenthal* (2006) 40 Cal.4th 33, 43 (*Barrett*), quoting *Zeran v. America Online, Inc.* (4th Cir.1997) 129 F.3d 327, 330, *italics added.*) *Barrett* also noted that one 'important purpose of section 230 was to encourage service providers to self-regulate the dissemination of offensive material over their services.' *Barrett* at 44. The immunity provided by section 230 was intended to shield service providers from the fear of liability that might deter them from 'blocking and screening offensive material'" (some internal quotation omitted).

¹²⁰ *Id.* at 196 ("Thus, we 'must ask whether the duty that the plaintiff alleges the defendant violated derives from the defendant's status or conduct as a "publisher or speaker." If it does, section 230(c)(1) precludes liability.' (*Cross v. Facebook, Inc.* (2017) 14 Cal.App.5th 190, 207 (*Cross*), quoting *Barnes v. Yahoo!, Inc.* (9th Cir. 2009) 570 F.3d 1096, 1102 (*Barnes*).) We observe that California courts have held that a service provider's decision 'to restrict or make available certain material is expressly covered by section 230.' *Doe II v. MySpace, Inc.* (2009) 175 Cal.App.4th 561, 573.) And federal courts have specifically ruled that a service provider's exercise of control over user accounts is immunized by section 230. (*Fields v. Twitter, Inc., supra*, 217 F.Supp.3d at p. 1124 ["[T]he decision to furnish an account, or prohibit a particular user from obtaining an account, is itself publishing activity."]; *see also Riggs v. MySpace, Inc.* (9th Cir. 2011) 444 Fed.Appx. 986, 987 [claims "arising from MySpace's decisions to delete . . . user profiles on its social networking website yet not delete other profiles . . . were precluded by section 230(c)(1) of the Communications Decency Act."]; *Cohen v. Facebook, Inc.* (E.D.N.Y. 2017) 252 F.Supp.3d 140, 157 ["Facebook's choices as to who may use its platform are inherently bound up in its decisions as to what may be said on its platform, and so liability imposed based on its failure to remove users would equally derive[] from [Facebook's] status or conduct as a "publisher or speaker."]; *Sikhs for Justice "SFJ", Inc. v. Facebook, Inc.* (N.D. Cal. 2015) 144 F.Supp.3d 1088, 1094-1095 [CDA barred claim under title II of the Civil Rights Act of 1964 (42 U.S.C. § 2000a) alleging that Facebook "was motivated solely by unlawful discrimination" in blocking access to plaintiffs Facebook page in India; claim sought "to hold Defendant liable for Defendant's decision 'whether to publish' third-party content"].) Indeed, 'any activity that can be boiled down to deciding whether to exclude material that third parties seek to post online is perforce immune under section 230.' (*Fair Housing Council of San Fernando*

Conceding error on remand, the trial judge wrote: “I now realize that . . . [i]n the evaluation of plaintiffs’ UCL claim, framing the salient question as whether Twitter is being treated as a publisher[,] or [as the party] whose speech is the basis for the claim, is a single indivisible question.”¹²¹ In other words, as we have argued, being treated “as a publisher” means being held liable on the basis of the exercise of free speech rights, including the editorial decision to remove objectionable content.

*D. Both the First Amendment and Section 230 Protect the Right
of Ad Platforms to Disassociate from Content They Find Objectionable*

Section 230(c)(1) protects a website operator’s right to “demonetize” third-party content creators who upload content to the site—*i.e.*, leaving their content up, but declining to run ads next to it. Thus, for example, a court dismissed a suit alleging violations of the Sherman and Lanham acts after YouTube “demonetized the ‘Misandry Today’ channel (which purported to expose anti-male bias).”¹²² The court equated removal of content and demonetization: “Both fall under the rubric of publishing activities.”¹²³

The same result applies when publishers of any interactive computer service refuse to allow their content to appear on third party pages—whether that content is an ad or other embeddable function. Consider the most controversial case of “demonetization” by an advertising platform: “NBC News attempted,” the co-founders of the rightwing website *The Federalist* wrote in June 2020, “to use the power of Google to

Valley v. Roommates.com, LLC (9th Cir. 2008) 521 F.3d 1157, 1170-1171 (en banc)).”) (some internal quotations omitted).

¹²¹ Taylor v. Twitter, Inc., CGC 18-564460 at 16 (Cal. Super. Ct. Mar. 8, 2019), <https://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=2910&context=historical>.

¹²² Lewis v. Google LLC, 2020 WL 2745253 (N.D. Cal. May 21, 2020).

¹²³ *Id.* at *9.

cancel our publication.”¹²⁴ After NBC published an exposé about racist comments posted by readers of *The Federalist* on its articles, Google told the site that it would no longer run ads on the site unless the site moderated content that violated the AdSense Terms of Service. *The Federalist* never filed a lawsuit—and for good reason: both the First Amendment and Section 230 would have blocked any antitrust (or other) suit.

The Federalist received, not a dose of politically motivated punishment, but a common lesson in the difficulty of content moderation. Websites across the political spectrum have had their content flagged in the same way. *Boing Boing* (a tech news site) handled the situation by putting user comments for each article (with Google ads) on a separate page (without ads). *TechDirt* (a leading site about technology that no one would ever accuse of being “right wing”) kept user comments on the same page as each article.¹²⁵

The difficulties of content moderation cannot, constitutionally, be solved by the NTIA Petition or any other government action. Writing about his site’s experience with these issues, *TechDirt*’s editor Mike Masnick explained:

[T]here are currently no third-party ads on Techdirt. We pulled them down late last week, after it became impossible to keep them on the site, thanks to some content moderation choices by Google. In some ways, this is yet another example of the impossibility of content moderation at scale

The truth is that Google's AdSense (its third-party ad platform) content moderation just sucks. In those earlier posts about *The Federalist*'s situation, we mentioned that tons of websites deal with those "policy violation" notices from Google all the time. Two weeks ago, it went into overdrive for us: we started receiving policy violation notices at least once a day, and frequently multiple times per day. Every time, the message was the same, telling us we had violated their policies (they don't say which ones) and we had to log in to our "AdSense Policy Center" to find out what the problem was. Every day for the ensuing week and a half (until we pulled the ads down), we would get more of these notices, and every time we'd log in to the Policy Center, we'd get an ever rotating list of "violations." But there was never much info to explain what the violation was. Sometimes it was "URL not found" (which seems to say

¹²⁴ Ben Domenech & Sean Davis, *NBC Tries to Cancel a Conservative Website*, WALL ST. J. (June 17, 2020), <https://www.wsj.com/articles/nbc-tries-to-cancel-a-conservative-website-11592410893>.

¹²⁵ Mike Masnick, *No, Google Didn't Demonetize The Federalist & It's Not an Example of Anti-Conservative Bias*, TECHDIRT (June 16, 2020), <https://www.techdirt.com/articles/20200616/14390744730/no-google-didnt-demonetize-federalist-not-example-anti-conservative-bias.shtml>.

more about AdSense's shit crawler than us). Sometimes it was "dangerous and derogatory content." Sometimes it was "shocking content."¹²⁶

Other large publications have experienced similar problems. Consider Slate (generally considered notably left-of-center), whose experience illustrates the limits of algorithmic content moderation as a way of handling the scale problem of online content:

Last Thursday, Google informed Slate's advertising operations team that 10 articles on the site had been demonetized for containing "dangerous or derogatory content." The articles in question covered subjects like white supremacy, slavery, and hate groups, and most of them quoted racial slurs. They included pieces on the racist origins of the name kaffir lime, the 2017 police brutality movie *Detroit*, Joe Biden's 1972 Senate run, and a Twitter campaign aimed at defaming Black feminists, which all had quotes containing the N-word . . .

Needless to say, the articles were not promoting the discriminatory ideologies affiliated with these slurs but rather reporting on and analyzing the context in which they were used.

Once flagged by the algorithm, the pages were not eligible to earn revenue through Ad Exchange. Slate appealed the moderation decisions through Google's ad platform last Thursday morning, as it normally would when a demonetization it feels is unjustified occurs. Not long after, as part of the reporting of this story, I contacted Google's communications department, whose personnel said they would contact the engineering team to look into it. The pages were subsequently remonetized by Friday morning.¹²⁷

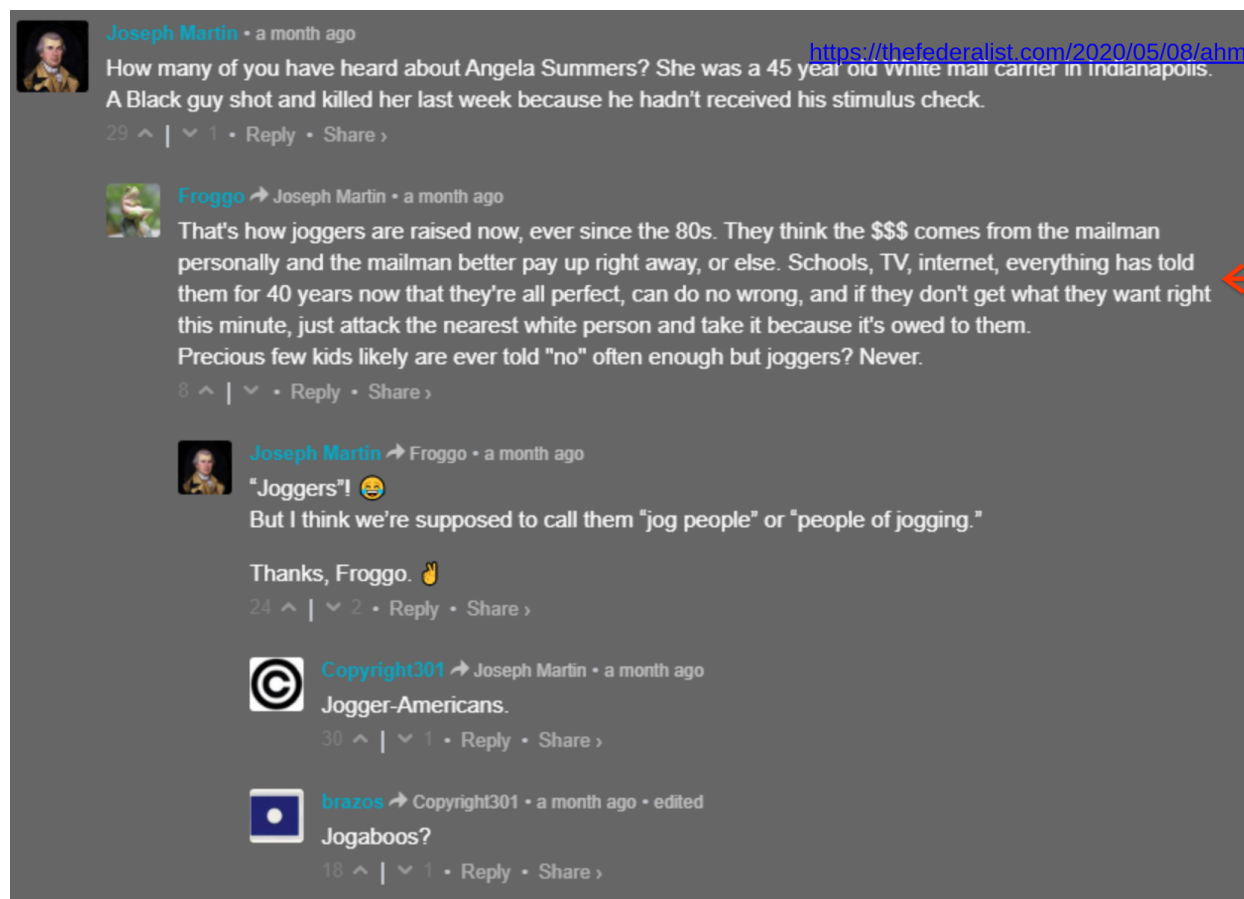
So, yes, the tool Google uses to decide whether it wants to run its ads next to potentially objectionable content is *highly* imperfect. Yes, everyone can agree that it would be better if this tool could distinguish between discussions of racism and racism itself—and exactly the same thing can be said of the algorithms Facebook and (to a lesser degree) Twitter apply to moderate user content on their sites. But these simply are not problems for the government to solve. The First Amendment requires us to accept that the exercise of editorial discretion will always be messy. This is even more true of digital media than it is of traditional media, as Masnick's Impossibility Theorem recognizes: "**Content moderation at scale is impossible to do well.** More specifically, it will always end up

¹²⁶ Mike Masnick, *Why Are There Currently No Ads On Techdirt? Apparently Google Thinks We're Dangerous*, TECHDIRT (Aug. 12, 2020), <https://www.techdirt.com/articles/20200810/11335745081/why-are-there-currently-no-ads-techdirt-apparently-google-thinks-were-dangerous.shtml>.

¹²⁷ Aaron Mak, *Google's Advertising Platform Is Blocking Articles About Racism*, SLATE (Aug. 13, 2020), <https://slate.com/technology/2020/08/googles-ad-exchange-blocking-articles-about-racism.html>.

frustrating very large segments of the population and will always fail to accurately represent the ‘proper’ level of moderation of anyone.”¹²⁸

Google has a clear First Amendment right not to run its ads next to content it finds objectionable. If websites want to run Google ads next to their comments section, they have a contractual obligation to remove content that violates Google’s terms of service for their advertising platform. Simply relying on users to downrank objectionable content, rather than removing it altogether—as *The Federalist* apparently did—will not suffice if the objectionable content remains visible on pages where Google Ads appear. It is worth noting that, while *TechDirt* might reasonably expect its readers to downrank obviously racist content, the exact opposite has happened on *The Federalist*:



¹²⁸ Mike Masnick, *Masnick’s Impossibility Theorem: Content Moderation at Scale Is Impossible To Do Well*, TECHDIRT (Nov. 20, 2019) (emphasis added), <https://www.techdirt.com/articles/20191111/23032743367/masnicks-impossibility-theorem-content-moderation-scale-is-impossible-to-do-well.shtml>.

(These comments use the term “jogger” as code for the n-word, in reference to the racially motivated murder of “Ahmaud Arbery, the young black man who was shot dead in February while he was running in a suburban neighborhood in Georgia.”¹²⁹)

Given the inherent challenges of content moderation at scale—and given how little attention most comment sections receive—it would be unfair to generalize about either *The Federalist* or its overall readership based on such examples. Nonetheless, Google has a right—guaranteed by the First Amendment—to insist that its ads not appear next to, or even anywhere on a site that hosts, a single such exchange. In exercising this right, Google also protects the right of advertisers not to be associated with racism and other forms of content they, in their sole discretion, deem objectionable. In making such decisions, Google is exercising its editorial discretion of AdSense, which clearly qualifies as an ICS. An advertising broker, after all, acts as a *publisher* no less than a newspaper does. Both a newspaper and an ad broker decide where content goes and how it is presented; the one just does this with stories, the other with ads. Thus, Section 230(c)(1) protects Google’s right to exercise editorial discretion in how it places ads just as it protects Google’s right to exercise such discretion over what content appears on YouTube.

IV. SECTION 230 AND CONSUMER PROTECTION LAW

Even more than antitrust, Republicans have also insisted that consumer protection law should be used to police “bias.” Multiple Republican legislative proposals would use existing consumer protection law to enforce promises (allegedly) made by social media companies to remain “neutral” in content moderation and other decisions about configuring the user experience.¹³⁰ The Executive Order contemplates the FTC and state

¹²⁹ Tess Owen, *White Supremacists Have a Disgusting New Code for the N-Word After Ahmaud Arbery’s Death*, VICE NEWS (May 14, 2020), https://www.vice.com/en_us/article/bv88a5/white-supremacists-have-a-disgusting-new-code-for-the-n-word-after-ahmaud-arberys-death.

¹³⁰ See Ending Support for Internet Censorship Act, *supra* note 25.

attorneys general using consumer protection law to declare unfair or deceptive “practices by entities covered by section 230 that restrict speech in ways that do not align with those entities’ public representations about those practices.”¹³¹ The NTIA Petition to the FCC argues:

if interactive computer services’ contractual representations about their own services cannot be enforced, interactive computer services cannot distinguish themselves. Consumers will not believe, nor should they believe, representations about online services. Thus, no service can credibly claim to offer different services, further strengthening entry barriers and exacerbating competition concerns.¹³²

The underlying premise of this argument false. As explained below, consumer protection law cannot enforce such claims because, to be enforceable, claims must be specific, objectively verifiable, and related to commercial transactions, not social policy. These requirements are ultimately rooted in the First Amendment itself. The category of “representations” about content moderation that *could*, perhaps, be enforced in court would be accordingly narrow.

Perhaps recognizing that the statements of neutrality they point to (often made in Congressional hearings in response to badgering by Republican lawmakers) will not give rise to liability today, NTIA proposes to require social media providers, as a condition of 230(c)(2)(A) protection for their content moderation practices, to “state plainly and with particularity the criteria the interactive computer service employs in its content-moderation practices.”¹³³ (NTIA also asks the FCC to reinterpret Section 230 so that (c)(1) no longer protects content moderation.) Furthermore, NTIA would require each ICS provider to commit not to “restrict access to or availability of material on deceptive or pretextual grounds” and to “apply its terms of service or use to restrict access to or availability of material that is similarly situated to material that the interactive computer

¹³¹ Executive Order, *supra* note 21.

¹³² NTIA Petition, *supra* note 23, at 26.

¹³³ NTIA Petition, *supra* note 23, at 26.

service intentionally declines to restrict.”¹³⁴ Similar concepts can be found in multiple Republican bills.¹³⁵ Such transparency mandates will also fail under the First Amendment.

Republicans now find themselves in the awkward position of advocating something like the FCC’s old Fairness Doctrine, under which broadcasters were required to ensure that all “positions taken by responsible groups” received airtime. Republicans fiercely opposed the Fairness Doctrine long after President Reagan effectively ended it in 1987—all the way through the 2016 Republican platform.¹³⁶

*A. Community Standards Are Non-Commercial Speech,
which Cannot Be Regulated via Consumer Protection Law*

The Federal Trade Commission has carefully grounded its deception authority in the distinction long drawn by the Supreme Court between commercial and non-commercial speech in *Central Hudson Gas Elec. v. Public Serv. Comm’n*, 447 U.S. 557 (1980) and its progeny. Commercial speech is speech which “[does] no more than propose a commercial transaction.”¹³⁷ In *Pittsburgh Press Co. v. Human Rel. Comm’n*, the Supreme Court upheld a local ban on referring to sex in the headings for employment ads. In ruling that the ads at issue were not non-commercial speech (which would have been fully protected by the First Amendment), it noted: “None expresses a position on whether, as a matter of social policy, certain positions ought to be filled by members of one or the other sex, nor does any of them criticize the Ordinance or the Commission’s enforcement

¹³⁴ *Id.*

¹³⁵ See Ending Support for Internet Censorship Act, *supra* note 25.

¹³⁶ Republican Platform 2016, at 12 (2016) (“We likewise call for an end to the so-called Fairness Doctrine, and support free-market approaches to free speech unregulated by government.”), https://prod-cdn-static.gop.com/media/documents/DRAFT_12_FINAL%5B1%5D-ben_1468872234.pdf.

¹³⁷ *Pittsburgh Press Co. v. Human Rel. Comm’n*, 413 U.S. 376, 385 (1973) (citing *Valentine v. Chrestensen*, 316 U.S. 52 (1942)).

practices.”¹³⁸ In other words, a central feature of commercial speech is that it is “devoid of expressions of opinions with respect to issues of social policy.”¹³⁹ This is the distinction FTC Chairman Joe Simons was referring to when he told lawmakers this summer that the issue of social media censorship is outside the FTC’s remit because “our authority focuses on commercial speech, not political content curation.”¹⁴⁰

While “terms of service” for websites in general might count as commercial speech, the kind of statement made in “community standards” clearly “expresses a position on . . . matter[s] of social policy.” Consider just a few such statements from Twitter’s “rules”:

Violence: You may not threaten violence against an individual or a group of people. We also prohibit the glorification of violence. Learn more about our violent threat and glorification of violence policies.

Terrorism/violent extremism: You may not threaten or promote terrorism or violent extremism. . . .

Abuse/harassment: You may not engage in the targeted harassment of someone, or incite other people to do so. This includes wishing or hoping that someone experiences physical harm.

Hateful conduct: You may not promote violence against, threaten, or harass other people on the basis of race, ethnicity, national origin, caste, sexual orientation, gender, gender identity, religious affiliation, age, disability, or serious disease.¹⁴¹

Each of these statements clearly “expresses a position on . . . a matter of social policy,”¹⁴² and therefore is clearly non-commercial speech that merits the full protection of the First Amendment under the exacting standards of strict scrutiny. “If there is any fixed star in our constitutional constellation, it is that no official, high or petty, can prescribe what

¹³⁸ *Id.* at 385.

¹³⁹ CONGRESSIONAL RESEARCH SERVICE, *THE CONSTITUTION OF THE UNITED STATES OF AMERICA, ANALYSIS AND INTERPRETATION*, S. Doc. No. 112-9, at 1248 (Centennial ed. 2013), <https://www.law.cornell.edu/constitution-conan/amendment-1/commercial-speech>.

¹⁴⁰ Leah Nylen, *Trump Aides Interviewing Replacement for Embattled FTC Chair*, POLITICO (Aug. 28, 2020), <https://www.politico.com/news/2020/08/28/trump-ftc-chair-simons-replacement-404479>.

¹⁴¹ *The Twitter Rules*, TWITTER, <https://help.twitter.com/en/rules-and-policies/twitter-rules> (last visited Aug. 31, 2020).

¹⁴² *Pittsburgh Press Co. v. Pittsburgh Comm’n on Human Relations*, 413 U.S. 376, 385 (1973).

shall be orthodox in politics, nationalism, religion, or other matters of opinion or force citizens to confess by word or act their faith therein.”¹⁴³ Consumer protection law simply does not apply to such claims—because of the First Amendment’s protections for non-commercial speech.

*B. The First Amendment Does Not Permit Social Media
Providers to Be Sued for “Violating” their Current Terms of Service,
Community Standards, or Other Statements About Content Moderation*

Given the strong protection a website’s terms of service enjoy under the First Amendment, it is no surprise that attempts to enforce statements about political neutrality via consumer protection law have failed—and that no American consumer protection agency has actually pursued such claims in an enforcement action.

Understanding why such claims are unenforceable starts in the rhetorical hotbed that is cable news. In 2004, MoveOn.org and Common Cause asked the FTC to proscribe Fox News’ use of the slogan “Fair and Balanced” as a deceptive trade practice.¹⁴⁴ The two groups acknowledged that Fox News had “no obligation whatsoever, under any law, actually to present a ‘fair’ or ‘balanced’ presentation of the news,”¹⁴⁵ but argued: “What Fox News is not free to do, however, is to advertise its news programming—a service it offers to consumers in competition with other networks, both broadcast and cable—in a manner that is blatantly and grossly false and misleading.”¹⁴⁶ FTC Chairman Tim Muris (a Bush appointee) responded pithily: “I am not aware of any instance in which the [FTC] has investigated the slogan of a news organization. There is no way to evaluate this

¹⁴³ *Bd. of Educ. v. Barnette*, 319 U.S. 624, 642 (1943).

¹⁴⁴ Petition for Initiation of Complaint Against Fox News Network, LLC for Deceptive Practices Under Section 5 of the FTC Act, MoveOn.org and Common Cause (July 19, 2004), https://web.archive.org/web/20040724155405/http://cdn.moveon.org/content/pdfs/ftc_filing.pdf.

¹⁴⁵ *Id.* at 2.

¹⁴⁶ *Id.* at 3.

petition without evaluating the content of the news at issue. That is a task the First Amendment leaves to the American people, not a government agency.”¹⁴⁷

Deception claims always involve comparing marketing claims against conduct.¹⁴⁸ Muris meant that, in this case, the nature of the claims (general claims of fairness) meant that their accuracy could not be assessed without the FTC sitting in judgment of how Fox News exercised its editorial discretion. The “Fair and Balanced” claim was not, otherwise, verifiable—which is to say that it was not *objectively* verifiable.

Prager “University,” the leading creator of “conservative” video content, attempted to make essentially the same deceptive marketing claim against YouTube in a case dismissed by the Ninth Circuit. Despite having over 2.52 million subscribers and more than a billion views of “5-minute videos on things ranging from history and economics to science and happiness,”¹⁴⁹ PragerU sued YouTube for “unlawfully censoring its educational videos and discriminating against its right to freedom of speech.”¹⁵⁰ Specifically, PragerU alleged that roughly a sixth of the site’s videos had been flagged for YouTube’s Restricted Mode,¹⁵¹ an opt-in feature that allows parents, schools, and libraries to restrict access to potentially sensitive content (and is turned on by fewer than 1.5% of YouTube users).¹⁵² After dismissing PragerU’s claims that YouTube was a

¹⁴⁷ Statement of Fed. Trade Comm’n Chairman Timothy J. Muris on the Complaint Filed Today by MoveOn.org (July 19, 2004), <https://www.ftc.gov/news-events/press-releases/2004/07/statement-federal-trade-commission-chairman-timothy-j-muris>.

¹⁴⁸ Fed. Trade Comm’n, FTC Policy Statement on Deception, at 1 (Oct. 14, 1983) [hereinafter *Deception Statement*].

¹⁴⁹ PragerU, YOUTUBE, <https://www.youtube.com/user/PragerUniversity/about> (last visited September 25, 2020).

¹⁵⁰ PragerU Takes Legal Action Against Google and YouTube for Discrimination, PRAGERU (2020), <https://www.prageru.com/press-release/prageru-takes-legal-action-against-google-and-youtube-for-discrimination/>.

¹⁵¹ Dennis Prager, *Don’t Let Google Get Away With Censorship*, WALL ST. J. (Aug. 6, 2019), <https://www.wsj.com/articles/dont-let-google-get-away-with-censorship-11565132175>.

¹⁵² *Your content & Restricted Mode*, YouTube Help (2020), <https://support.google.com/youtube/answer/7354993?hl=en>.

state actor denied First Amendment protection, the Ninth Circuit ruled:

YouTube's braggadocio about its commitment to free speech constitutes *opinions* that are not subject to the Lanham Act. Lofty but vague statements like “everyone deserves to have a voice, and that the world is a better place when we listen, share and build community through our stories” or that YouTube believes that “people should be able to speak freely, share opinions, foster open dialogue, and that creative freedom leads to new voices, formats and possibilities” are classic, non-actionable opinions or puffery. Similarly, YouTube's statements that the platform will “help [one] grow,” “discover what works best,” and “giv[e] [one] tools, insights and best practices” for using YouTube's products are *impervious to being “quantifiable,” and thus are non-actionable “puffery.”* The district court correctly dismissed the Lanham Act claim.¹⁵³

Roughly similar to the FTC’s deception authority, the Lanham Act requires proof that (1) a provider of goods or services made a “false or misleading representation of fact,”¹⁵⁴ which (2) is “likely to cause confusion” or deceive the general public about the product.¹⁵⁵ Puffery fails both requirements because it “is not a specific and measurable claim, capable of being proved false or of being reasonably interpreted as a statement of objective fact.”¹⁵⁶ The FTC’s bedrock 1983 Deception Policy Statement declares that the “Commission generally will not pursue cases involving obviously exaggerated or puffing representations, *i.e.*, those that the ordinary consumers do not take seriously.”¹⁵⁷

There is simply no way social media services can be sued under either the FTC Act (or state baby FTC acts) or the Lanham Act for claims they make today about their content

¹⁵³ *Prager Univ. v. Google LLC*, 951 F.3d 991, 1000 (9th Cir. 2020) (internal citations omitted).

¹⁵⁴ 15 U.S.C. § 1125 (a)(1).

¹⁵⁵ 15 U.S.C. § 1125 (a)(1)(A).

¹⁵⁶ *Coastal Abstract Serv. v. First Amer. Title*, 173 F.3d 725, 731 (9th Cir. 1998).

¹⁵⁷ Deception Statement, *supra* note 148, at 4. The Commission added: “Some exaggerated claims, however, may be taken seriously by consumers and are actionable.” But the Commission set an exceptionally high bar for such claims:

For instance, in rejecting a respondent's argument that use of the words “electronic miracle” to describe a television antenna was puffery, the Commission stated: Although not insensitive to respondent's concern that the term miracle is commonly used in situations short of changing water into wine, we must conclude that the use of “electronic miracle” in the context of respondent's grossly exaggerated claims would lead consumers to give added credence to the overall suggestion that this device is superior to other types of antennae.

Id.

moderation practices. Twitter CEO Jack Dorsey said this in Congressional testimony in 2018: “Twitter does not use political ideology to make any decisions, whether related to ranking content on our service or how we enforce our rules.”¹⁵⁸ This claim is no less “impervious to being ‘quantifiable’” than YouTube’s claims.¹⁵⁹

Moreover, “[i]n determining the meaning of an advertisement, a piece of promotional material or a sales presentation, the important criterion is the net impression that it is likely to make on the general populace.”¹⁶⁰ Thus, isolated statements about neutrality or political bias (*e.g.*, in Congressional testimony) must be considered in the context of the other statements companies make in their community standards, which broadly reserve discretion to remove content or users. Furthermore, the FTC would have to establish the materiality of claims, *i.e.*, that an “act or practice is likely to affect the consumer’s conduct or decision with regard to a product or service. If so, the practice is material, and consumer injury is likely, because consumers are likely to have chosen differently but for the deception.”¹⁶¹ In the case of statements made in Congressional testimony or in any other format besides a traditional advertisement, the Commission could not simply presume that the statement was material.¹⁶² Instead, the Commission would have to prove that consumers would have acted differently but for the deception.

¹⁵⁸ Twitter: Transparency and Accountability: Hearing Before the H. Comm. on Energy & Commerce, 115th Cong. (Sept. 5, 2018) (statement of Jack Dorsey, CEO, Twitter, Inc.), <https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Testimony%20-Dorsey-FC-Hrg-on-Twitter-Transparency-and-Accountabilit-2018-09-05.pdf>.

¹⁵⁹ *Prager Univ. v. Google LLC*, 951 F.3d 991, 1000 (9th Cir. 2020).

¹⁶⁰ Deception Statement, *supra* note 148, at 3.

¹⁶¹ *Id.* at 1.

¹⁶² As the DPS notes, “the Commission presumes that express claims are material. As the Supreme Court stated recently, ‘[i]n the absence of factors that would distort the decision to advertise, we may assume that the willingness of a business to promote its products reflects a belief that consumers are interested in the advertising.’” *Id.* at 5 (quoting *Central Hudson Gas Elec. v. Public Serv. Comm’n*, 447 U.S. 557, 567 (1980)); see also Geoffrey A. Manne, R. Ben Sperry & Berin Szóka, *In the Matter of Nomi Technologies, Inc.: The Dark Side of the FTC’s Latest Feel-Good Case* (ICLE Antitrust & Consumer Protection Research Program White Paper 2015-1), http://laweconcenter.org/images/articles/icle-nomi_white_paper.pdf.

These requirements—objective verifiability (about facts, rather than opinions) and materiality—are not simply doctrinal formalities of current consumer protection law that could be bypassed by new legislation. Instead, they reflect the outer boundaries of how far the government may go in regulating speech without violating the First Amendment. In short, the First Amendment allows the government to enforce marketing claims, but not to police the exercise of editorial discretion.

C. The First Amendment Will Not Permit the Government to Compel More Specific Claims

Because current claims by social media companies about their editorial practices are “impervious to being ‘quantifiable,’ and thus are non-actionable ‘puffery,’” the NTIA Petition and several Republican bills propose to require more specific statements. But does anyone seriously believe that the First Amendment would—whether through direct mandate or as the condition of tax exemption, subsidy, legal immunity, or some other benefit—permit the government to require book publishers to “state plainly and with particularity the criteria” (as NTIA proposes) by which they decide which books to publish, or newspapers to explain how they screen letters to the editor, or cable TV news shows to explain which guests they book—*let alone enforce adherence to those criteria the exercise of editorial discretion?*

Startlingly, NTIA professes to see nothing unconstitutional about such a *quid pro quo*, at least when *quo* is legal immunity:

To the contrary, the Supreme Court has upheld the constitutionality of offers special liability protections in exchange for *mandated* speech. In *Farmer's Union v. WDAY*, the Court held that when the federal government mandates equal time requirement for political candidates—a *requirement still in effect*, this requirement negates state law holding station liable for defamation for statements made during the mandated period. In other words, the Court upheld federal compelled speech in exchange for liability protections. Section 230's liability protections, which are carefully drawn but come nowhere near to compelling speech, are just as constitutionally unproblematic if not more so.¹⁶³

¹⁶³ NTIA Reply Comments, *supra* note 40, at 37 (citing *Farmers Educational & Cooperative Union v. WDAY, Inc.*, 360 U.S. 526-28 (1959)).

The problem with this argument should be obvious: the 1959 Supreme Court decision cited by NTIA involved only broadcasters, which do not enjoy the full protection of the First Amendment. Thus, this argument is no more applicable to non-broadcast media than is the Supreme Court's 1969 decision *Red Lion* upholding the Fairness Doctrine for broadcasters.¹⁶⁴ Yet the NTIA's "plain and particular criteria" mandate goes far beyond even what the Fairness Doctrine required. Such disclosure mandates offend the First Amendment for at least three reasons. First, community standards and terms of service are themselves non-commercial speech.¹⁶⁵ Deciding how to craft them is a form of editorial discretion protected by the First Amendment, and forcing changes in how they are written is itself a form of compelled speech—no different from forcing a social media company's other statements about conduct it finds objectionable on, *or off*, its platform. "Mandating speech that a speaker would not otherwise make necessarily alters the content of the speech."¹⁶⁶ The Court said that in a ruling striking down a North Carolina statute that required professional fundraisers for charities to disclose to potential donors the gross percentage of revenues retained in prior charitable solicitations. The Court declared that the "the First Amendment guarantees 'freedom of speech,' a term necessarily comprising the decision of both what to say and what *not* to say."¹⁶⁷ The Court will not allow compelled disclosure for something that is relatively objective and quantifiable, how could it allow compelled disclosure of something far more subjective?

Second, forcing a social media site to attempt to articulate *all* of the criteria for its content moderation practices while also requiring those criteria to be as specific as possible will necessarily constrain what is permitted in the underlying exercise of

¹⁶⁴ 395 U.S. 367, 386 (1969) ("Although broadcasting is clearly a medium affected by a First Amendment interest, differences in the characteristics of new media justify differences in the First Amendment standards."); *See supra* note 88.

¹⁶⁵ *See supra* Section V.A.

¹⁶⁶ *Riley v. Nat'l Fed'n of the Blind*, 487 U.S. 781, 795 (1988).

¹⁶⁷ *Id.* at 797 (citing *Miami Herald Publ'g Co. v. Tornillo*, 418 U.S. 241, 256 (1974)).

editorial discretion. Community standards and terms of service are necessarily overly reductive; they cannot possibly anticipate every scenario. If the Internet has proven anything, it is that there is simply no limit to human creativity in finding ways to be offensive in what we say and do in interacting with other human beings online. It is impossible to codify “plainly and with particularity” all of the reasons why online content and conduct may undermine Twitter’s mission to “serve the public conversation.”¹⁶⁸ Thus, compelling disclosure of decision-making criteria *and limiting media providers to them in making content moderation decisions* will necessarily compel speech on a second level: forcing the website to carry speech it would prefer not to carry.

Third, even if the government argued that the criteria it seeks to compel social media providers to disclose are statements of fact (about how they conduct content moderation) rather than statements of opinion, the Court has explicitly rejected such a distinction. Citing cases in which the court had struck down compelled speech requirements, such as displaying the slogan “Live Free or Die” on a license plate,¹⁶⁹ the Court noted:

These cases cannot be distinguished simply because they involved compelled statements of opinion while here we deal with compelled statements of “fact”: either form of compulsion burdens protected speech. Thus, we would not immunize a law requiring a speaker favoring a particular government project to state at the outset of every address the average cost overruns in similar projects, or a law requiring a speaker favoring an incumbent candidate to state during every solicitation that candidate’s recent travel budget. Although the foregoing factual information might be relevant to the listener, and, in the latter case, could encourage or discourage the listener from making a political donation, a law compelling its disclosure would clearly and substantially burden the protected speech.¹⁷⁰

The same is true here: the First Amendment protects Twitter’s right to be as specific, or as vague, as it wants in defining what constitutes “harassment,” “hateful conduct,”

¹⁶⁸ See *The Twitter Rules*, TWITTER, <https://help.twitter.com/en/rules-and-policies/twitter-rules> (last visited Aug. 31, 2020).

¹⁶⁹ *Wooley v. Maynard*, 430 U.S. 705, 714 (1977).

¹⁷⁰ *Riley*, 487 U.S. at 797-98.

“violent threats,” “glorification of violence,” *etc.*

V. EVEN ROLLING BACK SECTION 230’S IMMUNITIES

WOULD NOT CREATE LIABILITY UNDER ANTITRUST OR CONSUMER PROTECTION LAW BASED ON THE EXERCISE OF EDITORIAL DISCRETION

Current law is clear: The First Amendment bars liability under antitrust or other competition laws for content moderation. Section 230, both (c)(1) and (c)(2)(A), provide a procedural short-cut that allows defendants to avoid having to litigate cases that would ultimately fail anyway under the First Amendment—just as anti-SLAPP laws do in certain defamation cases. This Administration has tried to sidestep current law in two ways.

A. Social Media Enjoy the Same First Amendment Rights as Newspapers and Other Publishers

In a 2017 opinion, Justice Anthony Kennedy called social media the “modern public square” and declared that “to foreclose access to social media altogether is to prevent the user from engaging in the legitimate exercise of First Amendment rights.”¹⁷¹ Many, across the political spectrum, have cited this passage to insist that their proposed regulations would actually vindicate the First Amendment rights of Internet users.¹⁷²

For example, the NTIA petition breezily asserts that “social media and other online platforms . . . function, as the Supreme Court recognized, as a 21st century equivalent of the public square.”¹⁷³ NTIA cites the Supreme Court’s recent *Packingham* decision: “Social media . . . are the principal sources for knowing current events, checking ads for employment, speaking and listening in the modern public square, and otherwise

¹⁷¹ *Packingham v. North Carolina*, 137 S. Ct. 1730, 1737 (2017)

¹⁷² See, e.g., Komal S. Patel, Note, *Testing the Limits of the First Amendment: How Online Civil Rights Testing is Protected Speech Activity*, 118 COLUM. L. REV. 1473, 1508 (2018) (stating that the “[*Packingham*] Court implied that for First Amendment purposes, the internet might very well be considered a public forum.”); Executive Order, *supra* note 21, at 34080.

¹⁷³ NTIA Petition, *supra* note 23, at 7.

exploring the vast realms of human thought and knowledge.”¹⁷⁴ The Executive Order goes even further: “Communication through these channels has become important for meaningful participation in American democracy, including to petition elected leaders. These sites are providing an important forum to the public for others to engage in free expression and debate. Cf. *PruneYard Shopping Center v. Robins*, 447 U.S. 74, 85-89 (1980).”¹⁷⁵ The Executive Order suggests that the First Amendment should *constrain*, rather than protect, the editorial discretion of social media operators because social media are *de facto* government actors.

Both the Order and the Petition omit a critical legal detail about *Packingham*: it involved a *state law* restricting the Internet use of convicted sex offenders. Justice Kennedy’s simile that social media is “a 21st century equivalent of the public square” merely conveys the gravity of the deprivation of free speech rights effected by the state law. *Packingham* says nothing whatsoever to suggest that private media companies become *de facto* state actors by virtue of providing that “public square.” On the contrary, in his concurrence, Justice Alito expressed dissatisfaction with the “undisciplined dicta” in the majority’s opinion and asked his colleagues to “be more attentive to the implications of its rhetoric” likening the Internet to public parks and streets.¹⁷⁶

The Executive Order relies on the Supreme Court’s 1980 decision in *Pruneyard Shopping Center v. Robins*, treating shopping malls as public fora under California’s constitution.¹⁷⁷ NTIA makes essentially the same argument, by misquoting *Packingham*, even without directly citing *Pruneyard*. NTIA had good reason *not* to cite the case: it is clearly inapplicable, stands on shaky legal foundations on its own terms, and is antithetical to longstanding conservative positions regarding private property and the

¹⁷⁴ *Packingham*, 137 S. Ct. at 1732.

¹⁷⁵ Executive Order, *supra* note 21, at 34082.

¹⁷⁶ 137 S. Ct. at 1738, 1743 (Alito, J., concurring in judgement).

¹⁷⁷ 447 U.S. 74, 85-89 (1980).

First Amendment. In any event, *Pruneyard* involved shopping malls (for whom speech exercised on their grounds was both incidental and unwelcome), not companies for which the exercise of editorial discretion lay at the center of their business. *Pruneyard* has never been applied to a media company, traditional or new. The Supreme Court ruled on a very narrow set of facts and said that states have general power to regulate property for certain free speech activities. The Supreme Court, however, has not applied the decision more broadly, and lower courts have rejected *Pruneyard*'s application to social media.¹⁷⁸ Social media companies are in the speech business, unlike businesses which incidentally host the speech of others.

In a line of cases following *Miami Herald*, the Supreme Court consistently upheld the First Amendment right of media outlets other than broadcasters (a special case discussed below). In *Reno v. American Civil Liberties Union*, 521 U.S. 844, 870 (1997), the Court made clear that, unlike broadcasters, digital media operators enjoy the same protections in exercising their editorial discretion as newspapers:

some of our cases have recognized special justifications for regulation of the broadcast media that are not applicable to other speakers . . . Those factors are not present in cyberspace. Neither before nor after the enactment of the CDA have the vast democratic forums of the Internet been subject to the type of government supervision and regulation that has attended the broadcast industry. Moreover, the Internet is not as "invasive" as radio or television.¹⁷⁹

Since *Reno*, the Court has steadfastly refused to create such carveouts for new media. While striking down a state law restricting the purchase of violent video games, Justice Scalia declared: "whatever the challenges of applying the Constitution to ever-advancing technology, the basic principles of freedom of speech and the press, like the First Amendment's command, do not vary when a new and different medium for communication appears."¹⁸⁰

¹⁷⁸ See *hiQ Labs, Inc. v. LinkedIn Corp.*, 273 F. Supp. 3d 1099, 1115-16 (N.D. Cal. 2017); *Prager Univ. v. Google LLC*, 951 F.3d 991, 1000 (9th Cir. 2020).

¹⁷⁹ *Reno v. Am. Civil Liberties Union*, 521 U.S. 844, 868 (1997).

¹⁸⁰ *Brown v. Entm't Merchs. Assn.*, 564 U.S. 786, 790 (2011).

In general, media companies do not qualify as state actors merely because they provide “platforms” for others’ speech. A private entity may be considered a state actor when the entity exercises a function “traditionally exclusively reserved to the State.”¹⁸¹ In a 2019 case, *Manhattan v. Halleck*, the Supreme Court held that “operation of public access channels on a cable system is not a traditional, exclusive public function.”¹⁸² “Under the Court’s cases, those functions include, for example, running elections and operating a company town,” but not “running sports associations and leagues, administering insurance payments, operating nursing homes, providing special education, representing indigent criminal defendants, resolving private disputes, and supplying electricity.”¹⁸³ Justice Kavanaugh, writing for the five conservatives Justices, concluded the majority opinion as follows: “merely hosting speech by others is not a traditional, exclusive public function and does not alone transform private entities into state actors subject to First Amendment constraints.”¹⁸⁴ While *Halleck* did not involve digital media, the majority flatly rejected the argument made by the Executive Order for treating digital media as public fora. The lower courts have “uniformly concluded that digital internet platforms that open their property to user-generated content do not become state actors.”¹⁸⁵

¹⁸¹ *Jackson v. Metro. Edison Co.*, 419 U.S. 345, 352 (1974).

¹⁸² *Manhattan Cmty. Access Corp. v. Halleck*, 139 S. Ct. 1921, 1930 (June 17, 2019) (holding that the private operator of a public access TV channel is not a state actor and not bound by the First Amendment in the operator’s programming choices).

¹⁸³ *Id.* at 1929.

¹⁸⁴ *Id.*

¹⁸⁵ *Prager Univ. v. Google LLC*, 951 F.3d 991, 997 & n.3 (9th Cir. 2020) (citing *Freedom Watch, Inc. v. Google, Inc.*, 368 F. Supp. 3d 30, 40 (D.D.C. 2019)) (“Facebook and Twitter . . . are private businesses that do not become ‘state actors’ based solely on the provision of their social media networks to the public.”); *Green v. YouTube, LLC*, 2019 WL 1428890, at *4 (D.N.H. Mar. 13, 2019) (stating there is no “state action giving rise to the alleged violations of [the plaintiff’s] First Amendment rights” by YouTube and other platforms that are “all private companies”); *Nyabwa v. FaceBook*, 2018 WL 585467, at *1 (S.D. Tex. Jan. 26, 2018) (“Because the First Amendment governs only governmental restrictions on speech, [the plaintiff] has not stated a cause of action against FaceBook.”); *Shulman v. Facebook.com*, 2017 WL 5129885, at *4 (D.N.J. Nov. 6, 2017) (Facebook is not a state actor); *Forbes v. Facebook, Inc.*, 2016 WL 676396, at *2 (E.D.N.Y. Feb. 18, 2016) (“Facebook is a private corporation” whose actions may not “be fairly attributable to the state”); *Doe v.*

B. Arguments that Courts Have Misinterpreted Section 230

The Executive Order, the NTIA Petition, and a flurry of Congressional proposals argue that courts have misinterpreted Section 230. We dissected these claims in detail in our comments and reply comments in the FCC proceeding, which provide a detailed analysis for anyone interested in the merits of their arguments (or complete lack thereof).¹⁸⁶ Below follows an abbreviated explanation.

1. Narrowing Eligibility for the (c)(1) Immunity

The Executive Order, NTIA’s Petition and multiple Republican bills propose to disqualify social media completely for the (c)(1) immunity by redefining the line between an “interactive computer service”—the providers or users of which are covered by (c)(1)—and an “information content provider,” which are never protected by (c)(1). Specifically, NTIA proposes the following definition: “‘responsible, in whole or in part, for the creation or development of information’ includes substantively contributing to, modifying, altering, presenting or prioritizing with a reasonably discernible viewpoint, commenting upon, or editorializing about content provided by another information content provider.”¹⁸⁷ Parts of this definition are uncontroversial: Section 230 has never applied to content that a website creates itself, so, yes, “adding special responses or warnings [to user content] appear to develop and create content in any normal use of the words.”¹⁸⁸ There is simply no confusion in the courts about this. Similarly, “modifying” or “altering” user content may not be covered today, as the Ninth Circuit explained in *Roommates*:

A website operator who edits user-created content—such as by correcting spelling, removing

Cuomo, 2013 WL 1213174, at *9 (N.D.N.Y. Feb. 25, 2013) (Facebook is not a state actor under the joint action test).

¹⁸⁶ See *supra* note 24.

¹⁸⁷ NTIA Petition, *supra* note 23, at 42 (quoting 47 U.S.C. § 230(f)(3)).

¹⁸⁸ *Id.* at 41.

obscenity or trimming for length—retains his immunity for any illegality in the user-created content, provided that the edits are unrelated to the illegality. However, a website operator who edits in a manner that contributes to the alleged illegality—such as by removing the word “not” from a user’s message reading “[Name] did *not* steal the artwork” in order to transform an innocent message into a libelous one—is directly involved in the alleged illegality and thus not immune.¹⁸⁹

But then the Petition veers off into radically reshaping current law when it claims that “prioritization of content under a variety of techniques, particularly when it appears to reflect a particularly [sic] viewpoint, might render an entire platform a vehicle for expression and thus an information content provider.”¹⁹⁰

Once again, NTIA is trying to place the exercise of editorial discretion beyond the protection of (c)(1), despite the plain language of that provision preventing ICS providers from being held liable “as the publisher” of third party content. What the Supreme Court said in *Miami Herald* is no less true of website operators: “The choice of material to go into a newspaper, and the decisions made as to limitations on the size and content of the paper, and treatment of public issues and public officials—whether fair or unfair—constitute the exercise of editorial control and judgment.”¹⁹¹ As the Ninth Circuit has noted, “the exclusion of ‘publisher’ liability necessarily precludes liability for exercising the usual prerogative of publishers to choose among proffered material and to edit the material published while retaining its basic form and message.”¹⁹² NTIA is proposing a legal standard by which the government will punish digital media publishers for exercising that prerogative in ways this administration finds objectionable. While NTIA claims to advocate neutrality, its proposed regulation would be anything but content-neutral: it would allow certain community standards (such as against pornography) but disallow others (such as against racism and misinformation).

¹⁸⁹ Fair Hous. Council of San Fernando Valley v. Roommates.com, LLC, 521 F.3d 1157, 1169 (9th Cir. 2008).

¹⁹⁰ NTIA Petition, *supra* note 23, at 40.

¹⁹¹ *Miami Herald Publ’g Co. v. Tornillo*, 418 U.S. 241, 258 (1974). *See generally supra* Section IV.A.

¹⁹² *Batzel v. Smith*, 333 F.3d 1018, 1031 (9th Cir. 2003).

Because they would regulate speech “based on the message a speaker conveys” — and, in particular, based on the government’s “disagreement with the [speaker’s] message” — the NTIA’s attempts to limit which grounds for content moderation qualify for Section 230 protections are content-*based* restrictions subject to strict scrutiny.¹⁹³ Strict scrutiny “requires the Government to prove that the restriction furthers a compelling interest and is narrowly tailored to achieve that interest.”¹⁹⁴ The NTIA’s proposals, which stand on no more than the government’s disagreement with private platforms’ editorial decisions—and, more, with the platforms’ perceived political leanings—would clearly fail.

And make no mistake—*true* “content neutrality,” devoid of any “prioritization of content,” is not a desirable outcome. In the context of government speech, the Supreme Court has noted that neutrality would require “every jurisdiction that has accepted a donated war memorial . . . to provide equal treatment for a donated monument questioning the cause for which the veterans fought.”¹⁹⁵ Likewise, a “neutral” Internet platform would have to treat harassing, hateful, or violent messages like all other messages. Platforms forced to act as “neutral” public fora would become miserable, off-putting places, driving away users. The platforms’ very existence would be put at risk.¹⁹⁶

2. Interpreting (c)(1) to Cover Content Moderation Does Not Render (c)(2)(A) Superfluous

NTIA claims that that *Zeran* misread the statute, and insists that “Section 230(c)(1)

¹⁹³ *Reed v. Town of Gilbert*, 576 U.S. 155, 163 (2015).

¹⁹⁴ *Id.* at 171.

¹⁹⁵ *Pleasant Grove City v. Summum*, 555 U.S. 460, 480 (2009).

¹⁹⁶ Indeed, the risk of such a content death-spiral helped drive the Supreme Court’s conclusion that government speech at a location does not automatically turn that location into a public forum. “[W]here application of forum analysis would lead almost inexorably to closing of the forum, it is obvious that forum analysis is out of place.” *Id.*

applies to acts of omission—to a platform’s failure to remove certain content. In contrast, section 230(c)(2) applies to acts of commission—a platform’s decisions to remove. Section 230(c)(1) does not give complete immunity to all a platform’s ‘editorial judgments.’”¹⁹⁷ Multiple Republican bills would amend Section 230 to reflect this view.¹⁹⁸

NTIA argues that courts have read “section 230(c)(1) in an expansive way that risks rendering (c)(2) a nullity.”¹⁹⁹ The Petition claims interpreting Paragraph (c)(1) to cover decisions to remove content (as well as to host content) violates the statutory canon against surplusage because it renders (c)(2) superfluous.²⁰⁰ The plain text of the statute makes clear why this is not the case. Neither subparagraph of (c)(2) is rendered a “nullity” by the essentially uniform consensus of courts that Paragraph (c)(1) covers decisions to remove user content just as it covers decisions to leave user content up.²⁰¹ The Ninth Circuit has already explained what work Subparagraph (c)(2)(A) does that Subsection (c)(1) does not:

Subsection (c)(1), by itself, shields from liability all publication decisions, whether to edit, to remove, or to post, with respect to content generated entirely by third parties. Subsection (c)(2), *for its part, provides an additional shield from liability*, but only for “any action voluntarily taken in good faith to restrict access to or availability of material that the provider . . . considers to be obscene . . . or otherwise objectionable.” § 230(c)(2)(A). Crucially, the persons who can take advantage of this liability are not merely those whom subsection (c)(1)

¹⁹⁷ NTIA Petition, *supra* note 23, at 27.

¹⁹⁸ *See supra* note 25.

¹⁹⁹ NTIA Petition at 28.

²⁰⁰ “NTIA urges the FCC to follow the canon against surplusage in any proposed rule. Explaining this canon, the Supreme Court holds, ‘[a] statute should be construed so that effect is given to all its provisions, so that no part will be inoperative or superfluous, void or insignificant’ The Court emphasizes that the canon ‘is strongest when an interpretation would render superfluous another part of the same statutory scheme.’” *Id.* at 29.

²⁰¹ Elizabeth Banker, *A Review of Section 230’s Meaning & Application Based on More Than 500 Cases*, INTERNET ASSOCIATION, at 10 (July 27, 2020), <https://internetassociation.org/publications/a-review-of-section-230s-meaning-application-based-on-more-than-500-cases/> (“Of the decisions reviewed pertaining to content moderation decisions made by a provider to either allow content to remain available or remove or restrict content, only 19 of the opinions focused on Section 230(c)(2). Of these, the vast majority involved disputes over provider efforts to block spam. The remainder were resolved under Section 230(c)(1), Anti-SLAPP motions, the First Amendment, or for failure to state a claim based on other deficiencies.”).

already protects, but any provider of an interactive computer service. *See* § 230(c)(2). Thus, even those who cannot take advantage of subsection (c)(1), perhaps because they developed, even in part, the content at issue, *see Roommates.Com*, 521 F.3d at 1162-63, can take advantage of subsection (c)(2) if they act to restrict access to the content because they consider it obscene or otherwise objectionable. Additionally, subsection (c)(2) also protects internet service providers from liability not for publishing or speaking, but rather for actions taken to restrict access to obscene or otherwise objectionable content.²⁰²

The (c)(2)(A) immunity ensures that, even if an ICS provider is shown to be partially responsible for content creation, its decision to remove content will not be grounds for liability (absent a lack of “good faith”). This belt-and-suspenders approach is crucial to serving the statute’s central purpose—removing disincentives against content moderation—because certain forms of content moderation may at least open the door for plaintiffs to argue that the ICS provider had become responsible for the content, and thus subject them to the cost of litigating that question at a motion to dismiss or the even greater cost of litigating past a motion to dismiss if the trial judge rules that they may have been responsible for the creation of that content. Discovery costs alone have been estimated to account as much as 90% of litigation costs.²⁰³

3. Narrowing “Otherwise Objectionable” to Limit Grounds for Content Moderation

The NTIA Petition argues that “the plain words of [(c)(2)(A)] indicate that this protection only covers decisions to restrict access to certain types of enumerated content. . . . [T]hese categories are quite limited and refer primarily to traditional areas of media regulation—also consistent with legislative history’s concern that private regulation could create family-friendly internet spaces.”²⁰⁴ The Petition makes two arguments to support this assertion—both of which have become talking points for Republican

²⁰² *Barnes v. Yahoo!, Inc.*, 565 F.3d, 560, 569-70; *see also Fyk v. Facebook, Inc.*, 808 F. App’x 597, 598 (9th Cir. 2020) (reaffirming *Barnes*).

²⁰³ Memorandum from Paul V. Niemeyer, Chair, Advisory Committee on Civil Rules, to Hon. Anthony J. Scirica, Chair, Committee on Rules of Practice and Procedure (May 11, 1999), 192 F.R.D. 354, 357 (2000).

²⁰⁴ NTIA Petition, *supra* note 23, at 23.

legislators proposing to amend Section 230 in the same ways NTIA seeks to have the FCC reinterpret the statute.

First, NTIA argues: “If ‘otherwise objectionable’ means any material that any platform ‘considers’ objectionable, then section 230(b)(2) offers de facto immunity to all decisions to censor content.”²⁰⁵ NTIA is clearly referring to the wrong statutory provision here; it clearly mean 230(c)(2)—yet “makes this same erroneous substitution on page 28, so it wasn’t just a slip of the fingers.”²⁰⁶ NTIA fails to understand how the (c)(2)(A) immunity works. This provision contains two distinct operative elements: (1) the nature of the content removed (a *subjective* standard) and (2) the requirement that the action to “restrict access to or availability” of that content be taken in good faith (an *objective* standard). Under the clear consensus of courts that have considered this question, the former *does* indeed mean “any material that any platform ‘considers’ objectionable” *provided* that the decision to remove it is taken in “good faith.”²⁰⁷ This has *not* created a “de facto immunity to all decisions to censor content” under (c)(2)(A) because the subjective standard of objectionability is constrained by the objective standard of good faith.

Second, NTIA invokes another canon of statutory construction: “ejusdem generis, which holds that catch-all phrases [sic] at the end of a statutory lists should be construed in light of the other phrases.”²⁰⁸ The Ninth Circuit explained why this canon does not

²⁰⁵ *Id.* at 31.

²⁰⁶ Eric Goldman, *Comments on NTIA’s Petition to the FCC Seeking to Destroy Section 230*, TECHNOLOGY AND MARKETING L. BLOG (Aug. 12, 2020), <https://blog.ericgoldman.org/archives/2020/08/comments-on-ntias-petition-to-the-fcc-seeking-to-destroy-section-230.htm> (“I have never seen this typo by anyone who actually understands Section 230. It’s so frustrating when our tax dollars are used to fund a B-team’s work on this petition (sorry for the pun).”)

²⁰⁷ *Cf. e360Insight, LLC v. Comcast Corp.*, 546 F. Supp. 2d 605 (N.D. Ill. 2008) (dismissing unfair competition claims as inadequately pled, but implying that better pled claims might make a prima facie showing of “bad faith” sufficient to require Comcast to establish its “good faith”).

²⁰⁸ NTIA Petition, *supra* note 23, at 32 (citing *Washington State Dep’t of Soc. & Health Servs. v. Guardianship Estate of Keffeler*, 537 U.S. 371, 372 (2003)) (“[U]nder the established interpretative canons of noscitur a

apply in its recent *Malwarebytes* decision:

the specific categories listed in § 230(c)(2) vary greatly: Material that is lewd or lascivious is not necessarily similar to material that is violent, or material that is harassing. If the enumerated categories are not similar, they provide little or no assistance in interpreting the more general category. We have previously recognized this concept. *See Sacramento Reg'l Cty. Sanitation Dist. v. Reilly*, 905 F.2d 1262, 1270 (9th Cir. 1990) (“Where the list of objects that precedes the ‘or other’ phrase is dissimilar, *ejusdem generis* does not apply”).

We think that the catchall was more likely intended to encapsulate forms of unwanted online content that Congress could not identify in the 1990s.²⁰⁹

The categories of objectionable material mentioned in (c)(2)(A) are obviously dissimilar in the sense that matters most: their constitutional status. Unlike the other categories, “obscenity is not within the area of constitutionally protected speech or press.”²¹⁰ Note also that five of these six categories include no qualifier, but the removal of “violent” content qualifies only if it is “excessively violent.” Merely asserting that the six specified categories “[a]ll deal with issues involving media and communications content regulation intended to create safe, family environments,” does not make them sufficiently similar to justify the invocation of *ejusdem generis*, in part because the term “safe, family environment” itself has no clear legal meaning. Harassment, for example, obviously

socii and *ejusdem generis*, where general words follow specific words in a statutory enumeration, the general words are construed to embrace only objects similar to those enumerated by the specific words.”).

²⁰⁹ *Enigma Software Grp. U.S.A v. Malwarebytes, Inc.*, 946 F.3d 1040, 1052 (9th Cir. 2019). The *Reilly* court explained:

The phrase “other property” added to a list of dissimilar things indicates a Congressional intent to draft a broad and all-inclusive statute. In *Garcia*, the phrase “other property” was intended to be expansive, so that one who assaulted, with intent to rob, any person with charge, custody, or control of property of the United States would be subject to conviction under 18 U.S.C. § 2114. Where the list of objects that precedes the “or other” phrase is dissimilar, *ejusdem generis* does not apply. However, the statute at issue here falls into a different category. Because section 1292(1) presents a number of similar planning and preliminary activities linked together by the conjunction “or,” the principle of *ejusdem generis* does apply. “[O]r other necessary actions” in the statute before us refers to action of a similar nature to those set forth in the parts of the provision immediately preceding it. We have previously construed “or other” language that follows a string of similar acts and have concluded that the language in question was intended to be limited in scope—a similar conclusion to the one we reach today.

905 F.2d at 1270.

²¹⁰ *Roth v. United States*, 354 U.S. 476 (1957).

extends far beyond the concerns of “family environments” and into the way that adults, including in the workplace, interact with each other.

But in the end, this question is another red herring: whether *ejusdem generis* applies simply means asking whether Congress intended the term to be “broad and all-inclusive” or “limited in scope.”²¹¹ This is, obviously, a profound constitutional question: does the term “otherwise objectionable” protect an ICS provider’s exercise of editorial discretion under the First Amendment or not? *Ejusdem generis* is a linguistic canon of construction, supporting logical inferences about the meaning of text; it is thus a far weaker canon than canons grounded in substantive constitutional principles. Here, the canon of constitutional avoidance provides ample justification for courts’ interpretation of otherwise “objectionable” as “broad and all-inclusive”:

[W]here an otherwise acceptable construction of a statute would raise serious constitutional problems, the Court will construe the statute to avoid such problems unless such construction is plainly contrary to the intent of Congress ‘The elementary rule is that every reasonable construction must be resorted to, in order to save a statute from unconstitutionality.’ This approach not only reflects the prudential concern that constitutional issues not be needlessly confronted, but also recognizes that Congress, like this Court, is bound by and swears an oath to uphold the Constitution.²¹²

Finally, because of the First Amendment questions involved, it is unlikely that any court would apply the deferential standard of *Chevron* to an FCC rule reinterpreting “otherwise objectionable” narrowly.²¹³

²¹¹ *Sacramento Reg’l Cty. Sanitation Dist. v. Reilly*, 905 F.2d 1262, 1270 (9th Cir. 1990).

²¹² *DeBartolo Corp. v. Florida Gulf Coast Trades Council*, 485 U.S. 568, 575 (1988) (quoting *Hooper v. California*, 155 U.S. 648, 657 (1895)). *Accord* *Burns v. United States*, 501 U.S. 129, 138 (1991); *Gollust v. Mendell*, 501 U.S. 115, 126 (1991).

²¹³ *See, e.g., U.S. West v. FCC*, 182 F.3d 1224 (10th Cir. 1999) (“It is seductive for us to view this as just another case of reviewing agency action. However, this case is a harbinger of difficulties encountered in this age of exploding information, when rights bestowed by the United States Constitution must be guarded as vigilantly as in the days of handbills on public sidewalks. In the name of deference to agency action, important civil liberties, such as the First Amendment’s protection of speech, could easily be overlooked. Policing the boundaries among constitutional guarantees, legislative mandates, and administrative interpretation is at the heart of our responsibility. This case highlights the importance of that role.”).

4. Congress Deliberately Did Not Apply (c)(2)(A)’s “Good Faith” Requirement to (c)(2)(B)

As noted at the outset, Paragraph 230(c)(2) contains two distinct immunities. While (c)(2)(A) protects content moderation, (c)(2)(B) protects those who “make available to information content providers or others the technical means to restrict access to material described in [(c)(2)(A)].”²¹⁴ While the latter provision has been subject to little litigation,²¹⁵ it merits attention here because the Supreme Court is currently deciding whether to grant cert in a case concerning how this provision intersects with competition law.

It makes sense that Congress grouped these two distinct immunities into Paragraph (c)(2) because both begin the same way (“No provider or user of an interactive computer service shall be held liable on account of. . . .”) and because subparagraph (c)(2)(B) incorporates by reference (c)(2)(A)’s list of grounds for content moderation (ending in “or otherwise objectionable”). But (c)(2)(B) plainly does *not* incorporate (c)(2)(A)’s “good faith” requirement. Yet the Ninth Circuit recently held otherwise, reading into the statute words that are not there for what are clearly policy, rather than legal, reasons.²¹⁶ TechFreedom amicus brief supporting Malwarebytes’ petition for cert explains in detail why the Ninth Circuit made a reversible legal error.²¹⁷ As a policy

²¹⁴ 47 U.S.C. § 230(c)(2)(B).

²¹⁵ *Enigma Software Grp. USA, LLC v. Malwarebytes, Inc.*, 946 F.3d 1040 (9th Cir. 2019); *Zango, Inc. v. Kaspersky Lab, Inc.*, 568 F.3d 1169 (9th Cir. 2009); *Fair Hous. Council v. Roommates.com, LLC*, 521 F.3d 1157 (9th Cir. 2008); *Carafano v. Metrosplash.com, Inc.*, 339 F.3d 1119 (9th Cir. 2003); *PC Drivers Headquarters, LP v. Malwarebytes Inc.*, 371 F. Supp. 3d 652 (N.D. Cal. 2019); *PC Drivers Headquarters, LP v. Malwarebytes, Inc.*, No. 1:18-CV-234-RP, 2018 U.S. Dist. WL 2996897 (W.D. Tex. Apr. 23, 2018); *Barnes v. Yahoo!, Inc.*, 570 F.3d 1096 (9th Cir. 2009); *E360insight, LLC v. Comcast Corp.*, 546 F. Supp. 2d 605 (N.D. Ill. 2008); *Perfect 10, Inc. v. CCBill LLC*, 488 F.3d 1102 (9th Cir. 2007).

²¹⁶ *Enigma Software Grp. U.S.A.*, 946 F.3d 1040, 1052 (9th Cir. 2019).

²¹⁷ Brief for TechFreedom, as Amici Curiae Supporting Petitioner, *Malwarebytes, Inc., v. Enigma Software Grp. U.S.A.*, 2020 WL 6037214 (No. 19-1284) (Oct. 13, 2020), https://techfreedom.org/wp-content/uploads/2020/06/TechFreedom_Cert_Amicus_Brief.pdf.

matter, we explain:

It would not make any sense to hold providers of filtering tools liable based on *users'* decisions to “purchase, install, and utilize” those tools to tailor their Internet experiences. *Zango*, 568 F.3d at 1176. Nor would it make sense to hold developers liable when they provide those tools to other ICS providers. Yet the Ninth Circuit’s ruling authorizes both.²¹⁸

The *Malwarebytes* majority’s creation of an “anticompetitive animus” exception to Section 230(c)(2)(B) was purportedly driven by a “warning” Judge Fisher voiced a decade ago in a concurring opinion in another case: that if the statute were construed according to its “literal terms,” Section 230(c)(2)(B) could immunize “covert, anti-competitive blocking” of desirable content “without the user’s knowledge.”²¹⁹ But this concern evinces a significant misunderstanding of the statute. In Judge Fisher’s hypothetical, the decision by the developer of a software program that covertly blocks competitors’ content would not implicate subsection (c)(2)(B) in the first place; when an ICS provider acts *independently* of the end user (or parent or some other intermediary, *e.g.*, a school or library administrator²²⁰) to restrict access to material on its own service, its conduct falls squarely under subsection (c)(2)(A). And to be protected by that provision, the provider must act with “good faith.”

*C. Even If Section 230 Were Amended or Reinterpreted as Republicans Propose,
“Biased” Content Moderation Would Still Be Protected by the First Amendment*

In all three cases, even if Congress were to amend Section 230 as Trump’s DOJ has

²¹⁸ *Id.* at 8-9.

²¹⁹ *Zango*, 568 F.3d at 1178-79 (Fisher, J., concurring) (emphasis omitted); *see Enigma*, 946 F.3d at 1045.

²²⁰ Schools and libraries can use a variety of filtering tools to limit access by their students, visitors and patrons to content the schools or libraries deem objectionable. For example, parents and institutional administrators alike can opt-in to YouTube’s Restricted Mode, which will then automatically block videos flagged as being in six categories: drugs and alcohol, sexual situations, violence, mature subjects, profane and mature language; and incendiary and demeaning content. *Your content & Restricted Mode*, YOUTUBE, <https://support.google.com/youtube/answer/7354993?hl=en#:~:text=Restricted%20Mode%20is%20an%20optional,off%20for%20viewers%20by%20default> (last visited June 11, 2020). Congress clearly intended 230(c)(2)(B) to cover such technologies, and specifically included “libraries or educational institutions” in the definition of “interactive computer service.” 47 U.S.C. § 230(f)(2).

proposed, the First Amendment would still bar antitrust suits predicated on “biased” editorial judgment rather than economic injury. Thus, the net effect of these changes would be to force ICS providers to litigate the kinds of lawsuits discussed above on more complex First Amendment grounds instead of being able to rely on Section 230. This would be exactly equivalent to repealing an anti-SLAPP law—with the same effect: unleashing costly litigation that may be an effective tool of harassment, but will not succeed in court.

CONCLUSION

Section 230 does not exempt ICS providers from the antitrust or consumer protection laws, but it *does* bar liability for decisions they make as publishers with respect to content developed wholly by others, or for decisions they make in “good faith” to remove or restrict access to content on their services, regardless of who created it. As we have seen, neither immunity protects them from the kind of anti-competitive conduct that traditional publishers can be sued for. This does *not* include claims of bias in content moderation. Nor will Section 230 permit consumer protection law claims that could not be brought against traditional publishers for their exercise of editorial discretion—including claims that biased content moderation violates vague promises of “neutrality.” Those who demand that Section 230 be amended, or reinterpreted, to allow such claims should remember what President Reagan said when he vetoed legislation to restore the Fairness Doctrine back in 1987:

We must not ignore the obvious intent of the First Amendment, which is to promote vigorous public debate and a diversity of viewpoints in the public forum as a whole, not in any particular medium, let alone in any particular journalistic outlet. History has shown that the dangers of an overly timid or biased press cannot be averted through bureaucratic regulation, but only through the freedom and competition that the First Amendment sought to guarantee.²²¹

²²¹ Message from the President Vetoing S. 742, S. Doc. No. 10-100, at 2 (1987), <https://www.senate.gov/legislative/vetoes/messages/ReaganR/S742-Sdoc-100-10.pdf>.

Antitrust Exemptions and Immunities in the Digital Economy

Bruce H. Kobayashi & Joshua D. Wright*

INTRODUCTION

The antitrust laws were designed to regulate private conduct in order to promote competition and protect consumer welfare from exercises of monopoly power by firms. In other words, the antitrust laws, as “the magna carta of free enterprise,”¹ are designed primarily to regulate private conduct, not government conduct and public restraints of trade.² Private activity may still fall outside the scope of the antitrust laws when it is exempted specifically by Congress, heavily guided or influenced by the government, or relates to attempts to petition the government to take action.

Antitrust laws’ outer boundaries fall into three categories: (1) sectoral or industry-level exemptions, which single out an industry or business line from antitrust scrutiny; (2) state action immunity, which provides immunity for anticompetitive behavior by state governments and municipalities under certain conditions; and (3) *Noerr-Pennington* immunity, which aims to protect speech in the form of petitioning activity from antitrust liability.³ The digital economy interfaces with the government in many respects; therefore, the antitrust laws’ reach—shaped by these exemptions and immunities—plays

* We thank Rachel Burke and Ethan Hoffman for research assistance.

¹ *United States v. Topco Assoc.*, 405 U.S. 596 (1972) (“Antitrust laws in general, and the Sherman Act in particular, are the Magna Carta of free enterprises.”).

² *See also* *Northern Pac. Ry. Co. v. United States*, 356 U.S. 1,4 (1956) (“The Sherman Act was designed to be a comprehensive charter of economic liberty aimed at preserving free and unfettered competition as a rule of trade.”); *United States v. Socony Vacuum Oil Co.*, 310 U.S. 221 (1940) (characterizing the Sherman Act as a “charter of freedom”); *Appalachian Coals, Inc. v. United States*, 288 U.S. 344, 359 (1933) (same).

³ Implied immunity from antitrust scrutiny, inferred from the comprehensive nature of a specific regulatory regime, is discussed in Bruce H. Kobayashi & Joshua D. Wright, *Antitrust and Ex-Ante Sector Regulation*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020). *See, e.g.*, Bruce H. Kobayashi & Joshua D. Wright, *Federalism, Substantive Preemption, and Limits on Antitrust: An Application to Patent Holdup*, 5 J. COMPETITION L. & ECON. 469 (2009); Bruce H. Kobayashi & Joshua D. Wright, *The Limits of Antitrust and Patent Holdup: A Reply to Cary et al.*, 78 ANTITRUST L.J. 701, 717 (2012).

a clear role in guarding consumer welfare.

Antitrust's goal of protecting competition is rarely, if ever, served by industry-specific antitrust exemptions; indeed, the consensus view is that such exemptions are much more likely to reduce consumer welfare than to enhance it. For example, the bipartisan Antitrust Modernization Commission has explained, "A proposed exemption should be recognized as a decision to sacrifice competition and consumer welfare. . . ."⁴ Thus, any exemption from the antitrust laws should be narrowly tailored to address specific problems where procompetitive activity is likely to be deterred by the threat of mistaken antitrust liability, and blanket antitrust exemptions are economically unsound. This is because antitrust exemptions benefit small, concentrated interest groups while imposing costs broadly upon consumers at large in the form of higher prices, reduced output, lower quality, and reduced innovation.⁵ Once protected from antitrust liability, private actors are free to collude with competitors and reduce innovation efforts once induced by vigorous competition. Moreover, codified antitrust exemptions are nearly impossible to abolish, resulting in long-term harm to competition in those specific industries.

There is less consensus concerning the appropriate scope of state action immunity from application of the federal antitrust laws.⁶ While federal antitrust law must also comply with the principles of federalism, the precise contours of this judge-made immunity are not well-specified in practice.⁷ At the core of state action immunity is the

⁴ ANTITRUST MODERNIZATION COMMISSION, REPORT AND RECOMMENDATION 350 (2007) [hereinafter AMC].

⁵ *Preserving Our Hometown Independent Pharmacies Act of 2011: Hearing on H.R. 1946 Before the Subcomm. on Intellectual Property, Competition, And the Internet of the H. Comm. On the Judiciary*, 112th Cong. 24 (2012) (written testimony of Joshua D. Wright).

⁶ Report on the State Action Task Force, Fed. Trade Comm'n (Sept. 2003) (recommends "clarification and re-affirmation of the original purpose of the state action doctrine"); Aaron S. Edlin and Rebecca Haw Allensworth, *Cartels by Another Name: Should Licensed Occupations Face Antitrust Scrutiny?* 162 U. PA. L. REV. 1093 (2014); Frank H. Easterbrook, *Antitrust and the Economics of Federalism*, 26 J. L. & ECON. 23, 24 (1983)

⁷ *Id.*

idea that federal antitrust laws must respect state sovereignty and allow states to apply their own approach to controlling competition, while simultaneously attempting to ensure that conduct does not harm consumers outside of the state.⁸

The antitrust laws also do not reach private conduct in the form of petitioning activity protected by the First Amendment. The *Noerr-Pennington* doctrine broadly immunizes petitioning activity directed toward one of the three branches of government. Like most market participants, members of the digital marketplace often petition the government, whether for legislation, agency rulemaking, or judicial decree. As such, *Noerr-Pennington* immunity remains important in understanding antitrust law in the digital economy. The intersection of antitrust and speech has played an important role in contemporary antitrust policy discussions. Concerns about large digital platforms' potential ability and incentive to restrict speech have led enforcement agencies and Congress to focus on whether antitrust is an appropriate tool to regulate content moderation.⁹ Digital platforms, which facilitate voluminous amounts of speech, have fused the topics of competition policy, censorship, and section 230 immunity.¹⁰

In Part 1, we examine industry specific antitrust exemptions, specifically proposed exemptions in the electronic payment systems and the journalism industries, and their potential negative effects on consumers. In Part 2, we discuss state action doctrine and dual federal and state antitrust enforcement in the digital economy. In Part 3, we examine

⁸ *Parker v. Brown*, 317 U.S. 341 (1943). *See also* *N.C. State Bd. of Dental Examiners v. FTC*, 135 S.Ct. 1101 (2015); *FTC v. Ticor Title Ins. Co.*, 504 U. S. 621 (1992); *Rice v. Norman*, 458 U.S. 654 (1982); *Cal. Retail Liquor Dealers Ass'n. v. Midcal Aluminum, Inc.*, 445 U.S. 97 (1980); *New Motor Vehicle Bd. of Cal. v. Orrin W. Fox Co.*, 439 U.S. 96 (1978); *Exxon Corp. v. Governor of Md.*, 437 U.S. 117 (1978).

⁹ *See, e.g.*, Exec. Order No. 13,925, 85 Fed. Reg. 34,079 (May 28, 2020) (Executive Order on Preventing Online Censorship); *Hearing on Fostering a Healthier Internet to Protect Consumers Before the Subcomm. on Comm. & Tech. and the Subcomm. on Consumer Prot. & Commerce of the H. Comm. on Energy & Commerce*, 116th Cong. (2019); William P. Barr, Attorney General, U.S. Dep't of Justice, Remarks at the DOJ Workshop on Section 230: Nurturing Innovation or Fostering Unaccountability? (Feb. 19, 2020).

¹⁰ *See* Berin Szóka & Ashkhen Kazaryan, *Section 230: An Introduction for Antitrust and Consumer Protection Practitioners*, in *THE GAI REPORT ON THE DIGITAL ECONOMY* (2020).

the *Noerr-Pennington* doctrine, the sham exception, and two specific applications: patent holdup injunctions and citizen petitions.

I. INDUSTRY-SPECIFIC AND SECTORAL ANTITRUST EXEMPTIONS

Antitrust exemptions provide limited immunity to specific industries from antitrust regulations. Most antitrust exemptions are economically unsound and decrease consumer welfare by diminishing competition and innovation in the given industry. What follows is an explanation of industry specific antitrust exemptions and a discussion of how proposals for exemptions in the credit card and journalism industries will harm consumers.

A. Antitrust Exemptions for Industries Harm Consumers

Antitrust laws seek to foster competition and thereby maximize consumer welfare.¹¹ However, broad exemptions of specific industries from the antitrust laws do not serve this goal. As the Antitrust Modernization Commission explained, “A proposed exemption should be recognized as a decision to sacrifice competition and consumer welfare. . . .”¹² Antitrust exemptions benefit “small concentrated interest groups while imposing costs broadly upon consumers at large.”¹³ These costs generally manifest as higher prices, reduced output, lower quality, and reduced innovation.¹⁴

Congress has created antitrust exemptions for specific industries such as

¹¹ See *NCAA v. Bd. of Regents*, 468 U.S. 85, 107 (1984).

¹² AMC *supra* note 4, at 350.

¹³ *Preserving Our Hometown Independent Pharmacies Act of 2011: Hearing on H.R. 1946 Before the Subcomm. on Intellectual Property, Competition, and the Internet of the H. Comm. On the Judiciary*, 112th Cong. 24 (2012) (written testimony of Joshua D. Wright).

¹⁴ The Antitrust Modernization Commission (“AMC”) held for thirty-two statutory antitrust immunities that they were “skeptical about the value and basis for many, if not most or all, of these immunities.” AMC *supra* note 4, at 334-35.

railroads,¹⁵ insurance companies,¹⁶ ocean shippers,¹⁷ certain agricultural cooperatives,¹⁸ and non-profits.¹⁹ Moreover, the FTC Act explicitly exempts banks, savings and loans institutions, federal credit unions, common carriers, domestic and foreign air carriers—as they are regulated under different federal law.²⁰

Broad antitrust exemptions are not only economically unsound, but also do not protect procompetitive purposes already protected by the Sherman Act.²¹ Immunizing industries from antitrust liability allows for coordination among rivals. These cartels have the power to “jointly set prices or other competitive terms” which will “tend to increase the prices for services beyond what they would otherwise be in the presence of competition.”²² Competitors will no longer have incentives to innovate, and consumers will suffer from the lack of cost reduction or increased product quality.

Industry-level exemptions promote rent-seeking and often lead to less competition, not more. Antitrust exemptions create a classic public-choice problem. Industries with special exemptions are highly concentrated and often times highly political, therefore, the individual groups benefit greatly from the exemptions’ privileges.²³ Consumers, on the other hand, may not feel the harm of higher prices as strongly on an

¹⁵ 49 U.S.C. § 10706.

¹⁶ 15 U.S.C. § 1013.

¹⁷ 46 U.S.C. § 40103.

¹⁸ 7 U.S.C. §§ 291-92.

¹⁹ 15 U.S.C. § 13(c).

²⁰ 15 U.S.C. § 45(a)(2); *Investigation into the State of Competition in the Digital Marketplace: Before the Subcomm. On Antitrust, Commercial, and Administrative Law of the H. Comm. on the Judiciary*, 116th Cong. 36 (2020). (written statement of James C. Cooper, Joshua D. Wright & John M. Yun) (arguing that Congress should eliminate the FTC Act’s exemptions for non-profits and common carriers as it creates ad hoc divisions of industries between the agencies and may potentially exclude the FTC from policing sectors of the internet, particularly as firms become increasingly vertically integrated.).

²¹ *Id.*

²² *Id.*

²³ George J. Stigler, *The Theory of Economic Regulation*, BELL J. ECON. & MANAGEMENT SCI. (1971) (“Because regulations such as antitrust exemptions are shaped by industries with strong political and financial

individual level, even though the aggregate harm to consumer welfare is significant. Therefore, individual consumers have little incentive to pursue repeals of existing exemptions.²⁴

Even if consumers had an individual incentive to repeal harmful antitrust exemptions, the actual process is difficult. Exemptions are not removed rapidly, as it takes time for industries to alter the fundamental aspects of their businesses.²⁵ While exemptions might have been enacted to protect competition in certain industries, they now pose a dangerous risk of institutionalizing anticompetitive conduct.²⁶ Antitrust exemptions replace competition with government regulation thereby reducing incentives to compete vigorously through reduced price or improved product quality.²⁷

The case for industry-specific antitrust exemptions is weak. The argument that specific industry exemptions are necessary to protect facially anticompetitive acts that actually have procompetitive effects²⁸ is rendered dubious by the fact that courts analyze

influence, the exemption may exacerbate the market failures it sought to correct.”).

²⁴ See generally MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOOD AND THE THEORY OF GROUPS* (1971).

²⁵ John Roberti, Kelse Moen, & Jana Steenholdt, *The Role and Relevance of Exemptions and Immunities in U.S. Antitrust Law*, presented at United States Department of Justice Roundtable on Exemptions and Immunities from Antitrust Law (Mar.14, 2018), at 4. <https://www.justice.gov/atr/roundtable-exemptions-and-immunities-antitrust-laws-wednesday-march-14-2018>. (“The corresponding ‘stickiness’ of these exemptions is evidenced by the fact that many of the existing exemptions were passed nearly a hundred years ago and still exist today, even after economic theory has moved away from the theoretical foundations on which they were originally built.”).

²⁶ *Id.* at 11 (“However well-intentioned antitrust exemptions may be, most of them threaten to institutionalize anticompetitive conduct, often in sweeping ways that could be better addressed through more narrowly-tailored reforms that do not otherwise conflict with the modern, procompetitive thrust of the antitrust laws.”).

²⁷ Makan Delrahim, Assistant Attorney Gen., Antitrust Div., U.S. Dep’t of Justice, Opening Remarks at U.S. Dep’t of Justice Roundtable Discussion Series on Competition & Deregulation (Mar. 14, 2018), at 5, <https://www.justice.gov/atr/page/file/1120641/download>; see also Alden F. Abbott, Gen. Counsel, Fed. Trade Comm’n, Statement at AMC Statutory Immunities and Exemptions Hearing (Dec. 1, 2005), at 1–2 (“[V]igorous competition, protected by the antitrust laws, does the best job of promoting consumer welfare and a vibrant, growing economy.”).

²⁸ *Cont’l T. V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36 (1977); see also *California Dental Ass’n v. FTC*, 526 U.S.

most conduct under the rule of reason.²⁹ Moreover, original justifications for certain industry exemptions are no longer backed by economic theory. In the late nineteenth and early twentieth century some exemptions were created with the idea that “regulation was preferable to competition or that there were natural monopolies that needed to be controlled.”³⁰ However, it is evident that “consumers benefit most when competitors freely compete”; therefore, economic regulations should focus on “preserving a competitive marketplace” rather than supporting anticompetitive collusion.³¹ Industry exemptions replace vigorous competition with government regulation.³²

B. Recently Proposed Exemptions in Digital or High-Tech Markets

This section will discuss proposed antitrust immunities related to the digital economy. One proposal is to grant merchants the ability to collectively bargain with credit card issuers. Another is a proposal to allow news publishers to collectively bargain with digital media platforms. Such proposals provide no benefits for consumers and would harm competition in these markets.

1. Credit Cards & Merchant Antitrust Immunity

Merchants have long argued for antitrust exemptions to set lower interchange fees.

756 (1999); *State Oil v. Kahn*, 522 U.S. 3 (1997).

²⁹ Roberti, Moen, & Steenholdt, *supra* note 25, at 1. The most common example of a procompetitive restraint is a sports league, or otherwise an industry where the restraint is necessary to the very existence of the product or service. See e.g., *Bd of Regents*, 468 U.S. at 85; *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.*, 441 U.S. 1 (1979).

³⁰ Roberti, Moen, & Steenholdt, *supra* note 25, at 2. Such exemptions were created for railroads, insurance, ocean shippers, and agricultural. The economic theory backing these exemptions was the “benevolent cartel” theory, which held “that organizing industries into highly regulated cartels that would orient their collective industry decisions in light of the common good would be most beneficial to the national economy.” *Id.*

³¹ *Id.*

³² Delrahim, *supra* note 27, at 5 (“When regulation replaces antitrust enforcement, the regulations—and regulators—become stealthy and disruptive forces that can interfere with the competitive marketplace. And, like a boa constrictor, they can slowly, and painfully, squeeze competition from the free market.”).

An interchange fee is the rate paid between the merchant's bank (acquiring bank) and the consumer's bank (issuing bank). Because acquiring banks will charge the merchant a fee for handling the payment equivalent to the interchange fee, merchants are usually responsible for paying the interchange fee.

Merchants are calling for regulations to lessen their burden of paying interchange fees. They argue that card companies rarely discuss the interchange fee with them and present the fees as a "take it or leave it offer."³³ Merchants contend that their only choices are to lose business from holders of those cards or incur increased costs. Merchants may decide not to accept certain brands or to charge a higher price to customers to cover the interchange fee. However, because most merchants do not wish to face issues by either denying certain card brands or charging certain customers more, they tend to charge all customers the same higher price.³⁴

In 2009, the House of Representatives proposed antitrust exemptions allowing merchant-level collusion. The Credit Card Fair Fee Act of 2009 proposed a limited antitrust immunity for "single covered electronic payment system and any merchants [to] jointly negotiate and agree upon the rates and terms for access to the covered electronic payment system."³⁵ The credit card companies would also jointly decide "the

³³ PAYMENT CARD INTERCHANGE FEES: AN ECONOMIC ASSESSMENT, CONGRESSIONAL RESEARCH SERVICES: SPECIALIST IN FINANCIAL ECONOMICS, 2 (2010) [hereinafter CRS REPORT].

³⁴ Stephen Cannon, Assessing the Need for Antitrust Immunity For Collective Merchant Negotiations With Electronic Payment Systems at ABA Section of Antitrust Law, 2010 Spring Meeting (Apr. 22, 2010), <https://constantinecannon.com/wp-content/uploads/2017/09/scannonaba04222010art.pdf>.

³⁵ Credit Card Fair Fee Act of 2009, S. 1212, 111th Cong. (2009) ("Grants limited antitrust immunity to such providers and merchants, as well as to those providers who jointly determine among themselves the proportionate division of paid access fees."); Credit Card Fair Fee Act of 2009, H.R. 2695, 111th Cong. (2009). A similar bill was proposed by House of Representatives in 2008. Credit Card Fair Fee Act of 2009, H.R. 5546 (2008). Likewise, this provision allowed for negotiations between merchants and credit card companies for access rates and terms. The difference between the 2008 and 2009 versions is who would be responsible for overseeing the negotiations schedules. The 2008 bill originally assigned that task to the panel of three full-time electronic payment system judges, appointed by the Antitrust Division of the Department of Justice and the Federal Trade Commission Bureau of Competition. However, the 2009 version gave that responsibility instead to the U.S. Attorney General.

proportionate division among themselves of paid access fees.” Proponents argued that by allowing merchants to collectively negotiate prices, they can exercise greater bargaining power against large credit card companies.³⁶ These proposed antitrust immunities for merchants have been reinvigorated by both the Payment Card Interchange Fee and Merchant Discount Antitrust Litigation and the Supreme Court’s decision in *Ohio v. American Express*.³⁷

Giving merchants the power to arbitrarily set interchange fees is bound to harm credit card holders. First, allowing merchants to collude on interchange fees will reduce vigorous competition at the merchant level. Even if immunity for merchant-level collusion did result in a low interchange fee “that does not make such collusion desirable.”³⁸ Even though the intended outcome of the proposed antitrust exemption is to lower the cost of transaction for consumers by improving rates for merchants, there is no guarantee that merchants will pass on the price reduction to consumers.³⁹ Allowing merchants to set lower interchange fees will diminish innovation at the merchant level.

Moreover, arbitrarily setting interchange fees will at best help only merchants, while most likely harming consumers. Reducing interchange fees may reduce merchant

³⁶ Cannon, *supra* note 34.

³⁷ *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2280 (2018).

³⁸ Benjamin Klein, Andres V. Lerner, Kevin M. Murphy, and Lacey L. Plache, *Competition in Two-Sided Markets: The Antitrust Economics of Payment Card Interchange Fees*, 73 ANTITRUST L.J. 571, 576–77 (2006) (“it makes no economic sense to conclude that competition among merchants must be controlled because of these inter-retailer effects. These effects are the essence of the competitive process. If merchants could collude in their payment card acceptance decisions, interchange fees would no doubt be lower. Similarly, merchant spending on advertising, parking, or other customer services also would be lower if they could collude on the provision of these services. That does not make such collusion desirable. A regulatory solution that mimics such collusion on the part of merchants would be contrary to the goal of antitrust and, by preventing competitive balancing, would place open-loop payment card systems at a competitive disadvantage in the marketplace.”).

³⁹ CRS REPORT, *supra* note 33, at 6; *see also* U.S. GOVERNMENT ACCOUNTING OFFICE, CREDIT CARDS: RISING INTERCHANGE FEES HAVE INCREASED COSTS FOR MERCHANTS, BUT OPTIONS FOR REDUCING FEES POSE CHALLENGES 44-45 (2009), <http://www.gao.gov/new.items/d1045.pdf>.

costs, but they will “impose those costs on other network actors, especially consumers.”⁴⁰ Having merchants pay the interchange fee “permits the issuer to attract more cardholders than it would be able to if it were forced to impose higher direct fees on cardholders.”⁴¹

Even though interchange fees have been on the rise since 1990,⁴² which has increased merchants’ cost, the current interchange fees are based on market costs for completing credit card transactions.⁴³ Interchange fees play an important role in “supporting electronic payment systems.”⁴⁴ Credit card companies use the funds from interchange fees to “recoup some operating costs without imposing higher direct costs (annual fees and the like) on cardholders.”⁴⁵ Having interchange fees paid by merchants “ensures that merchants pay for the benefits they receive and is essential to the efficient and effective operation of the system.”⁴⁶

Allowing merchants to collectively decide arbitrary rates no longer ties the interchange fee to market conditions. Such an exemption would “place open-loop

⁴⁰ Todd J. Zywicki, *The Economics of Payment Card Interchange Fees and The Limits Of Regulation* 3 (ICLE Fin. Reg. Program, White Paper Series, 2010).

⁴¹ Zywicki, *supra* note 40, at 30.

⁴² Fumiko Hayash, *Payment Card Interchange Fees and Merchant Service Charges – An International Comparison*, 1-3 LYDIAN PAYMENTS JOURNAL 8 (2010).

⁴³ Zywicki, *supra* note 40, at 2 (“the claim that interchange fees are ‘too high’ fails . . . because it arbitrarily defines the purported costs of electronic payment systems while simultaneously ignoring the costs of ‘legacy’ payment systems such as cash and checks, especially those costs that are borne by consumers and society generally (as opposed to merchants directly)”; see also Timothy J. Muris, Testimony before the Senate Committee on the Judiciary (Jul. 19, 2006), at 5, https://www.judiciary.senate.gov/imo/media/doc/muris_testimony_07_19_06.pdf (“The agreements that are in place between card systems, merchants, and cardholders are consensual, not the product of force or fraud. It is hard to imagine how intervention in the form of price regulation could possibly improve matters.”).

⁴⁴ Zywicki, *supra* note 40, at 3; see Klein et al., *supra* note 38, at 590.

⁴⁵ Zywicki, *supra* note 40, at 30; see also Adam J. Levitin, *Priceless? The Economic Costs of Credit Card Merchant Restraints*, 55 UCLA L. REV. 1321, 1331-32 (2008).

⁴⁶ Zywicki, *supra* note 40, at 30; see also Richard Schmalensee, *Payment Systems and Interchange Fees*, 50(2) J. INDUS. ECON. 103, 105 (2002) (“The main economic role of the interchange fee is not to exploit the system’s market power; it is rather to shift costs between issuers and acquirers and thus to shift charges between merchants and consumers to enhance the value of the payment system as a whole to its owners.”).

payment card systems at a competitive disadvantage in the marketplace.”⁴⁷ Exempting merchant collusion would distort the competitive balance in the payment card systems industry.⁴⁸

Moreover, evidence shows that arbitrarily setting interchange fees does not benefit consumers. In 2001, the Reserve Bank of Australia (“RBA”) began regulating interchange fees. Specifically, the RBA enacted interchange fee caps with the goal of reducing credit card usage by shifting “costs of the card network from merchants to consumers.”⁴⁹ Ex post analysis of these regulations showed that credit card usage did not decline, and that there was “no discernible decrease in retail prices.”⁵⁰ Therefore, only merchants benefit from interchange caps.

If interchange fees are set arbitrarily low, credit card companies will not receive the necessary payments from merchants, and thus might be forced to cut costs by increasing annual fees and interest payments, or by reducing cardholder benefits and customer support.⁵¹ Moreover, credit card companies might cut off certain cardholders in an attempt to reduce risk exposure.⁵² In Australia, annual fees for credit card holders increased significantly following the interchange fee regulation.⁵³

⁴⁷ Klein et al., *supra* note 38, at 576.

⁴⁸ *Id.*; see also Muris, *supra* note 43, at 6 (“The role of interchange in providing benefits to consumers is crucial to understand. When interchange increases, cardholders benefit. Because of intense competition between the many banks that issue payment cards, “higher” interchange revenues to issuing banks result in increased benefits on payment cards, such as increased rewards and lower fees.”).

⁴⁹ Zywicki, *supra* note 40, at 45; See generally Robert Stillman et al., *Regulatory Intervention In The Payment Card Industry By The Reserve Bank Of Australia: Analysis Of The Evidence*, CRA INTERNATIONAL 29 (2008).

⁵⁰ Zywicki, *supra* note 40, at 46; see also Klein et al., *supra* note 38, at 614.

⁵¹ Zywicki, *supra* note 40, at 49. Reserve Bank of Australia, Preliminary Conclusions of the 2007/08 Review 17 (Apr. 2008), <https://www.rba.gov.au/payments-and-infrastructure/payments-system-regulation/past-regulatory-reviews/review-of-card-payment-systems-reforms/pdf/review-0708-pre-conclusions.pdf> [hereinafter RBA Preliminary Conclusions].

⁵² Zywicki, *supra* note 40, at 49.

⁵³ “In Australia, following the regulation, annual fees increased by an average of 22% on standard credit cards and annual fees for rewards cards increased by 47%-77%, costing consumers hundreds of millions of dollars in higher annual fees.” Zywicki, *supra* note 40, at 50; see also RBA Preliminary Conclusions, *supra*

Interchange fee regulation proposals in the U.S. differ from those in Australia as the Credit Card Act proposes to give merchants, not a government agency, price setting power for interchange fees. Regardless, a similar harm would be felt by U.S. consumers given that merchant antitrust immunity will result in arbitrarily low interchange fees.⁵⁴ Regulations to allow “bilateral bargaining between merchants and the card networks” are not guaranteed to result in greater benefits to card holders than the current system already does.⁵⁵

2. News & Journalism Antitrust Exemptions

New antitrust exemptions have been considered for the news industry. The House proposed the Journalism Competition & Preservation Act of 2019 which allows print or digital news publishers to collectively negotiate with digital platforms—like Google and Facebook—regarding the terms on which the digital platforms may distribute the news publishers content.⁵⁶ The bill would provide a temporary 4-year safe harbor window where the news publishers would be exempt from the antitrust laws for collectively withholding content from, or collectively negotiating with, the digital platforms regarding distribution terms.⁵⁷

Proponents of the exemption acknowledge its explicit goal is to displace competition for the purpose of “helping newspapers survive.”⁵⁸ The regulation would

note 51.

⁵⁴ “Any artificial reduction in the interchange fee could have far-reaching and undesirable results.” Zywicki, *supra* note 40, at 52.

⁵⁵ Zywicki, *supra* note 40, at 53 (“At the end of the day, the implication that by direct price regulation or through indirect measures aimed at putting downward regulatory pressure on interchange fees, regulators can identify and mandate the socially-optimal interchange fee is deeply suspect.”).

⁵⁶ H.R. 2054, 116th Cong. (2019); S. 1700, 116th Cong. (2019).

⁵⁷ *Id.* at Sect. (b).

⁵⁸ Press Release, Sen. John Kennedy, Statement on the Journalism Competition and Preservation Act (Jun. 03, 2019), <https://www.kennedy.senate.gov/public/2019/6/u-s-sens-kennedy-klobuchar-file-legislation-to-protect-newspapers-from-social-media-giants>.

“establish an even playing field for negotiation with online platforms . . . improv[ing] the quality and accessibility of reporting.”⁵⁹ Proponents further contend that because Google and Facebook account collectively for up to approximately 60% of the digital advertising economy,⁶⁰ news publishers have a reduced bargaining position. This exemption would give news publishers the power to collectively demand the digital platforms pay more for their content, provide more data and brand visibility, and give new publishers control of their content on the platforms.

Giving antitrust immunity to news publishers enables them to maintain inefficient business models that harm consumers. For example, in 1969, the Newspaper Preservation Act (NPA) was enacted to provide limited antitrust immunity for some joint operating agreements (JOA) between newspapers to combine certain business operations.⁶¹ Congress enacted the NPA to help two California newspapers survive in the same city.⁶² By combining business operations, the newspaper companies could reduce overhead costs, while still competing for reports and editorial policies.⁶³ Combining business operations allowed the newspapers to participate in anticompetitive price fixing of subscription prices and advertising rates.⁶⁴

The Assistant Attorney General for the Antitrust Division Richard W. McLaren strongly opposed giving antitrust immunity to newspapers for several reasons.⁶⁵ First, the

⁵⁹ Press Release, Sen. Amy Klobuchar, Statement on the Journalism Competition and Preservation Act (Jun. 03, 2019), <https://www.kennedy.senate.gov/public/2019/6/u-s-sens-kennedy-klobuchar-file-legislation-to-protect-newspapers-from-social-media-giants>.

⁶⁰ PwC, *IAB Internet Advertising Revenue Report: 2019 Full Year Results*, INTERACTIVE ADVERTISING BUREAU (May 2019).

⁶¹ Maurice E. Stucke & Allen P. Grunes, *Why More Antitrust Immunity for the Media Is A Bad Idea*, 105 NW. U. L. REV. 1399, 1404 (2011).

⁶² *Id.* The NPA was created because of the JOA made between two San Francisco newspapers—the Examiner and the San Francisco Chronicle.

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Id.* at 1406.

NPA “removes newspapers from the judgement of the marketplace,” which is specifically important given new media’s role in free speech and the open market for exchanging ideas.⁶⁶ Second, without the NPA, competitors would have to seek out alternatives methods to survive in the market, such as innovation or acquisition by an outsider.⁶⁷ Antitrust immunity allows the newspapers to escape competition and to survive without making any real improvements to the business. The “JOAs create[d] a shared monopoly that increases market-entry barriers” and allowed two close competitors to be given “immunized price-fixing.”⁶⁸ Finally, the NPA would create incentives for greater rent-seeking for other media to seek antitrust immunity.⁶⁹

The results of the NPA are instructive. The NPA negatively impacted consumer welfare—like most other industry-specific antitrust exemptions. It “failed to save papers in the long run, harmed consumers by increasing circulation and advertising prices between 15-25 percent, and was misused in a variety of ways [for] corporate benefit that were not intended when the law was enacted.”⁷⁰

Much like the 1969 NPA, the Journalism Competition & Preservation Act of 2019 would harm consumers and the news media market if enacted. First, this proposed

⁶⁶ S. COMM. ON THE JUDICIARY, SUBCOMM. ON ANTITRUST AND MONOPOLY, 91 CONG., THE NEWSPAPER PRESERVATION ACT: HEARINGS, NINETY-FIRST CONGRESS, FIRST SESSION, ON S. 1520, PURSUANT TO S. RES. 40. JUNE 12, 13 AND 20, 1969 296 (U.S. Gov’t Print. Office, 1969) (testimony of Richard W. McLaren, Assistant Attorney Gen., Antitrust Div., U.S. Dep’t of Justice).

⁶⁷ See *id.* at 296-98.

⁶⁸ Stucke & Grunes, *supra* note 61, at 1406.

⁶⁹ *Id.*

⁷⁰ Leonard Downie, Jr., & Michael Schudson, *The Reconstruction of American Journalism*, COL. JOURNALISM REV. 28-29 (Oct. 19, 2009). See also POTENTIAL POLICY RECOMMENDATIONS TO SUPPORT THE REINVENTION OF JOURNALISM, FED. TRADE COMM’N, 13-14 (2010), https://www.ftc.gov/sites/default/files/documents/public_events/how-will-journalism-survive-internet-age/new-staff-discussion.pdf (citing Grunes, Mar. 10, 2010 Tr. at 199 (noting that JOAs under the NPA “were a sort of Faustian bargain where the circulation and advertising functions could be combined, but the editorials and reportorial functions would be kept separate and would continue to compete”). See also *id.* (citing Picard, Dec. 1, 2009 Tr. at 79-80 (noting that an antitrust exemption “will do substantial harm to consumers and advertisers”).

antitrust immunity establishes a news media cartel that sets prices on media platforms.⁷¹ It “transfer[s] surplus from online platforms to news organizations, which will likely result in higher content costs for these platforms, as well as provisions that will stifle the ability to innovate.”⁷²

Second, the increased advertisement prices created by the news publishers would become an entry barrier for small news publishers, resulting in less diverse news options for consumers. Advertisement prices for online platforms are low and have decreased by 40% since 2010, which “suggest[s] that Internet advertising is perhaps a more competitive segment than print advertising.”⁷³ Lower advertising prices benefit consumers by decreasing costs to publishers and allowing for more publishers to be able to advertise on the digital platforms. The low cost of advertising on digital platforms “opens the door to small firms” allowing them to “grow more quickly and easily.”⁷⁴ “Increased choice and access to more businesses” benefits consumers.⁷⁵ If news publishers collude on terms with digital platforms, larger publishers will create better positions for themselves and make advertising more expensive for smaller publishers, which will force smaller news publishers to leave the digital platforms.

Policies and terms created by a news publisher cartel would likely raise prices of digital advertising, harming both consumers and advertisers.⁷⁶ Such an antitrust

⁷¹ John M. Yun, *News Media Cartels are Bad News for Consumers*, CPI’s NORTH AMERICAN COLUMN (2019).

⁷² *Id.* at 4.

⁷³ Michael Mandel, *The Declining Cost of Advertising: Policy Implications*, PROGRESSIVE POLICY INSTITUTE 4 (Jul. 2010) (“Taken together, this implies that the shift from print to digital advertising is being driven in large part by the relative (low) price of digital advertising. We calculate, based on several assumptions, that for every \$3 that an advertiser spends on digital advertising, they would have to spend \$5 on print advertising to get the same impact. In the economic sense, digital advertising is more productive than print advertising. The benefits of these lower prices flow directly to advertisers and consumers.”).

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ *Id.* at 14.

exemption will enable news publishers to preserve outdated business models, which will “only slow down innovation and the response of the news industry to changing economical and social realities.”⁷⁷

II. ANTITRUST & FEDERALISM: STATE ACTION DOCTRINE

State action immunity authorizes states to enact industry specific regulations that are anticompetitive—for example by allowing price fixing and other forms of anticompetitive collusion,⁷⁸ by allowing incumbent providers to erect regulatory restrictions on competition,⁷⁹ and by allowing anticompetitive mergers to be consummated.⁸⁰ It carves out from antitrust liability certain conduct by private firms that is heavily guided by state action under certain conditions. This section explains state action doctrine and its negative spillover effects on consumers in other jurisdictions. It then describes how this sometime strenuous relationship between state action doctrine, federalism, and comity is depicted in the role of state attorneys general in federal antitrust disputes.

A. Antitrust Immunity Under the State Action Doctrine

Under the state action doctrine, states and municipal authorities are themselves immune from federal antitrust laws. The Supreme Court has protected state sovereignty and the principles of federalism by broadly holding that the Sherman Act is directed

⁷⁷ *Id.*

⁷⁸ *Parker*, 317 U.S. at 341.

⁷⁹ See *Hoover v. Ronwin*, 466 U.S. 558, 568 (1984) (upheld grading scale for Arizona Bar admission created by the Committee on Examinations and Admissions under state action immunity); see also *Bates v. State Bar of Ariz.*, 433 U.S. 350, 359 (1977) (the disciplinary ruling of the Arizona Bar committee was immune from antitrust liability under the state action doctrine; however, it was struck down for violating the First Amendment).

⁸⁰ See Press Release, FTC to Study Impact of COPAs (Oct. 21 2019), <https://www.ftc.gov/news-events/press-releases/2019/10/ftc-study-impact-copas> (FTC announcing 6b study examining state Certificate of Public Advantage laws that allow states to immunize mergers and collaborations from antitrust scrutiny).

against “individual and not state action.”⁸¹ Therefore, the antitrust laws cannot abrogate a state action that supplants competition with regulation, regardless of its anticompetitive effect or intent.⁸²

While the state action doctrine allows the state to replace competition with regulation, the state may not shield illegal conduct from the Sherman Act “by authorizing [private parties] to violate it, or by declaring that their action is lawful.”⁸³ Therefore, the Sherman Act preempts state regulation that “mandates or authorizes conduct that necessarily constitutes a violation of the antitrust laws in all cases, or . . . places irresistible pressure on a private party to violate the antitrust laws in order to comply with the statute.”⁸⁴

Private parties are only immunized from an antitrust suit under state action if they show that (1) the state clearly articulated an express intent to displace competition with a regulatory scheme and (2) the state actively supervises that scheme.⁸⁵ The clear articulation is often explained as a mechanism to increase the extent to which state governments are held politically accountable for the anticompetitive effects of regulations by forcing them to be transparent about the anticompetitive intent of the legislation.⁸⁶ The active supervision requirement has been explained as a penalty option that disincentivizes anticompetitive state legislation by making it more costly for both

⁸¹ *Parker*, 317 U.S. at 352.

⁸² *Id.*; see also *N.C. Dental*, 135 S.Ct. at 1121-22; *Ticor Title Ins. Co.*, 504 U. S. at 632; *Rice*, 458 U.S. at 659; *Midcal*, 445 U. S. at 105; *New Motor Vehicle Bd. of Cal.*, 439 U.S. at 110-11; *Exxon Corp.*, 437 U.S. at 133.

⁸³ *Parker*, 317 U.S. at 351; see also *Midcal*, 445 U.S. at 106 (the state cannot save a regulatory scheme from preemption by placing a “gauzy cloak of state involvement over what is essentially a private price-fixing arrangement.”).

⁸⁴ *Rice*, 458 U.S. at 661.

⁸⁵ *N.C. Dental*, 135 S.Ct. at 1121-22; *Midcal*, 445 U.S. at 105.

⁸⁶ James C. Cooper & William E. Kovacic, *U.S. Convergence with International Competition Norms: Antitrust Law and Public Restraints on Competition*, 90 BOSTON U. L. REV. 1555 (2010).

states and the private parties that stand to benefit from the anticompetitive regulations.⁸⁷

However, basing antitrust immunity on active supervision of the state does not necessarily serve as a deterrent to anticompetitive regulations.⁸⁸ If state regulations are in fact anticompetitive schemes to reward politically powerful interest groups, then this requirement conditions antitrust immunity on actions of the entity that created the anticompetitive scheme.⁸⁹ Moreover, active state supervision can be especially costly, which can harm both consumers and the regulated firms.⁹⁰

B. Spillover Effects and Antitrust Federalism

The current state action doctrine does not enable jurisdictional competition or promote the principles of federalism because it does not account for the spillover effects of anticompetitive state regulation. Judge Easterbrook examined the Court's state action holdings and found that the Court's rulings were indifferent as to whether the effects of the regulation were actually internalized by the regulating state.⁹¹ Allowing states to enact anticompetitive legislation reduced the extent and effectiveness of competition among the states, and thereby increased the cost of exit and relocation.⁹²

This nature of the spillover effect is exemplified in *Parker v. Brown*.⁹³ The state action doctrine was used to uphold a California regulation which authorized a raisin cartel. California raisin growers benefited greatly from that ability to price fix. However,

⁸⁷ See *id.*; Easterbrook, *supra* note 6, at 24; Richard Squire, *Antitrust and the Supremacy Clause*, 59 STAN. L. REV. 77, 119-20 (2006) (arguing that the state must incur "public costs" to supervise a price setting regime).

⁸⁸ See Easterbrook, *supra* note 6, at 33 (arguing that such an all or nothing choice would result in a net increase in regulatory costs).

⁸⁹ Timothy Brennan, *Trinko v. Baxter: The Demise of U.S. v. AT&T*, 50 ANTITRUST BULL. 635 (2006).

⁹⁰ Easterbrook, *supra* note 6, at 29-33.

⁹¹ *Id.*; see also Bruce H. Kobayashi & Larry E. Ribstein, *The Economics of Federalism* (Univ. Ill. L. & Econ. Research Paper No. LE06-001, 2006).

⁹² Easterbrook, *supra* note 6, at 29-33.

⁹³ 317 U.S. 341, 345 (1943).

over 90% of the grapes were exported outside of California—nationally and internationally—making the impact of the California raisin regulation reach beyond state lines.⁹⁴ The regulation harmed a large number of consumers outside of California while only benefiting a small number of private interest parties within the state.

State action doctrine, although meant to preserve that state's independence, actually allows the state to reap the benefits of the anticompetitive regulation while displacing the costs onto other states.⁹⁵ Therefore, it is worth considering if the current state action doctrine should be thought of differently, in a way that fully takes into accounts issues of federalism. Judge Easterbrook proposes a state action rule which considers the spillover effect of anticompetitive state regulation. Instead of examining clear articulation and active supervision, the Court would uphold an anticompetitive state regulation as long as its anticompetitive effects are internalized by that state's residents.⁹⁶ Aligning state action doctrine with the economics of federalism will not only maintain states' roles in antitrust, but also ensure that state antitrust exemptions have a diminished negative impact on consumer welfare. Analyzing the anticompetitive overcharge of regulations is also more administrable than attempting to analyze the regulations under the dormant Commerce Clause.⁹⁷ Considered under Easterbrook's approach, *Parker's* California raisin prorate program would be subject to antitrust scrutiny because the regulation's costs were not internalized.

⁹⁴ *Id.* at 310.

⁹⁵ See Tad Lipsky, Joshua D. Wright, Douglas H. Ginsburg, Bruce H. Kobayashi, and John M. Yun, *U.S. Dep't of Justice Antitrust Div. Public Roundtable Series on Competition and Deregulation, First Roundtable on State Action, Statutory Exemptions and Implied Immunities, Comment of the Global Antitrust Institute, Antonin Scalia Law School George Mason University* (George Mason Law & Econ., Research Paper No. 18-03, 2018).

⁹⁶ Easterbrook, *supra* note 6, at 45–47.

⁹⁷ *Id.* at 46 (“[an antitrust] doctrine proscribing state regulation that had ‘excessive’ interstate effects might breed confusion without corresponding benefit”); see, e.g., *Hughes v. Oklahoma*, 441 U.S. 322, 336 (1979) (“the first step in analyzing any law subject to judicial scrutiny under the negative Commerce Clause is to determine whether it ‘regulates evenhandedly with only ‘incidental’ effects on interstate commerce, or discriminates against interstate commerce”).

State regulation of seemingly local competition is likely to effect more than just the economy of that specific state. When states grant antitrust immunities in situations involving interstate commerce, the state is exporting the anticompetitive effects of its regulations to citizens outside its own borders. Without accounting for the federal interest in an integrated national economy, state action doctrine far surpasses its narrow purpose of supervising local competition.

C. The Appropriate Role of State Attorneys General in Federal Antitrust Disputes

Federalism most often refers to the vertical relationship between the federal government and the states. Divergent viewpoints among antitrust enforcers can strain the system, thus comity and deference are crucial to efficient antitrust enforcement. A merger or acquisition is often scrutinized by multiple enforcers with multi-dimensional relationships.

For example, the Sprint/T-Mobile merger involved the Antitrust Division and Federal Communications Commission, who share a horizontal relationship, and state attorneys general, with which the federal agencies share a vertical relationship. Disagreement between enforcers may occur at either level.⁹⁸ The merger between the two telecommunications firms was cleared by the FCC, the Antitrust Division, and ten state attorneys general.⁹⁹ Although a settlement agreement—which required divestitures—was in the process of being approved, several other state attorneys general filed a lawsuit to block the merger anyway.¹⁰⁰ Assistant Attorney General Makan Delrahim questioned

⁹⁸ For a horizontal disagreement example, the Antitrust Division filed an amicus brief in the FTC’s case against Qualcomm, opposing the FTC’s legal position. Brief of the United States of America as Amicus Curiae in Support of Appellant and Vacatur, *FTC v. Qualcomm, Inc.*, No. 19-16122 (N.D. Cal. 2019).

⁹⁹ Makan Delrahim, Assistant Attorney Gen., Antitrust Div., U.S. Dep’t of Justice, Remarks Before The Media Institute: “Getting Better”: Progress and Remaining Challenges in Merger Review (Feb. 5, 2020), at 5, <https://www.justice.gov/opa/speech/file/1245056/download>.

¹⁰⁰ *Id.* at 6.

the relief sought by the states,¹⁰¹ citing the federal agencies' expertise in the matter.¹⁰² He noted that "a minority of states and the District of Columbia" were "trying to undo [the nationwide settlement]," a situation he believed was "odd."¹⁰³ Delrahim reaffirmed states' rights to sue for antitrust violations but criticized their attempt to seek relief inconsistent with the federal government's settlement.¹⁰⁴

States may also enter settlement agreements with merging parties that are repugnant to sound antitrust enforcement. For example, in *UnitedHealth Group/Sierra Health Services*, the Nevada Attorney General required the merged firm to submit \$15 million in charitable contributions which were not related to any antitrust violation.¹⁰⁵ Similarly, Massachusetts entered a settlement agreement with two hospitals that required increased spending on select programs and the creation of other projects and programs unrelated to antitrust concerns.¹⁰⁶

On the other hand, state antitrust enforcement can play a useful role in supplementing federal antitrust enforcement. First, the use of state autonomy within a federal system allows state and local governments to act as social "laboratories," where laws and policies are created and tested at the state level of the democratic system, in a manner similar (in theory, at least) to the scientific method.¹⁰⁷ Thus, even if states enter

¹⁰¹ The Antitrust Division and FCC filed a brief opposing the relief requested by the states. *Id.* at 7.

¹⁰² *Id.* at 6.

¹⁰³ *Id.*

¹⁰⁴ *Id.* at 9 ("[C]ourts should not award any private party, including the states, relief that is incompatible with relief secured by the federal government. . . . That would wreak havoc on parties' ability to merge, on the government's ability to settle cases, and cause real uncertainty in the market for mergers and acquisitions.").

¹⁰⁵ Douglas H. Ginsburg & Joshua D. Wright, *Antitrust Settlements: The Culture of Consent*, in 1 WILLIAM E. KOVACIC: AN ANTITRUST TRIBUTE--LIBER AMICORUM 177, 183 (2012).

¹⁰⁶ *Id.*

¹⁰⁷ "Laboratories of democracy" is a phrase popularized by U.S. Supreme Court Justice Louis Brandeis in *New State Ice Co. v. Liebmann*, 285 U.S. 262 (1932), to describe how a "state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country."

into agreements with merging parties that the federal authorities view as anticompetitive or that impose ineffective remedies for the anticompetitive effects that would be generated by the merger, the information generated by such actions can be invaluable inputs into retrospective analyses of the competitive effects of mergers. These analyses are based on causal empirical designs which require both observation of post-merger price and quality effects from consummated mergers and the ability to compare these effects with a credible control group.¹⁰⁸ For example, state interventions such as COPA or Certificate on Need Laws that allow hospital mergers that generate competitive effects in local geographic markets facilitate retrospective studies of hospital mergers that can be used to validate and improve the economic models and other tools used to predict merger effects.¹⁰⁹

Second, in a system of federalism, the state enforcement of both the state and federal antitrust laws can be a valuable complementary resource that supplements scarce federal resources. Conflicts between the federal and state antitrust authorities are generated by the use of a cooperative or “marble cake” approach to federalism, where the tasks of the state and federal agencies are relatively undefined, overlapping, and imperfectly coordinated. In contrast, a “dual” or “layer cake” federalism approach, where power is divided ex-ante between the federal and state governments in clearly defined terms, can mitigate direct conflicts between state and federal authorities discussed above.

One such approach would be to divide authority for mergers on whether the effects of the transaction were contained within a state.¹¹⁰ For example, merger

¹⁰⁸ See Joseph Farrell, Paul A. Pautler & Michael G. Vita, *Economics at the FTC: Retrospective Merger Analysis with a Focus on Hospitals*, 35 REVIEW OF INDUSTRIAL ORGANIZATION 369 (2009) (discussing earlier Hospital Merger Retrospective Analyses).

¹⁰⁹ See the discussion of COPA laws, *supra* note 80. See also Christopher Garmon, *The Accuracy of Hospital Merger Screening Methods*, 48 THE RAND JOURNAL OF ECONOMICS 1968 (2017).

¹¹⁰ See D. Bruce Johnsen & Moin Yahya, *A Geographic Market Power Test for Sherman Act Jurisdiction*, in COMPETITION LAWS IN CONFLICT: ANTITRUST JURISDICTION IN THE GLOBAL ECONOMY (eds. Michael Greve and Richard Epstein, AEI Press 2004); D. Bruce Johnsen & Moin Yahya, *The Evolution of Sherman Act Case*

transactions with largely intra-state competitive effects would be left to the appropriate state authority to investigate and challenge if found to be anticompetitive. This would include many small mergers with local within-state geographic markets. But it would also include some larger mergers with intra-state effects, including large hospital mergers.¹¹¹ Responsibility for mergers with interstate implications, such as the Sprint/T-Mobile merger mentioned above, would be allocated to the federal agencies.¹¹²

III. NOERR-PENNINGTON IMMUNITY

The Sherman Act's applicability to only anticompetitive *private* conduct also underlies the *Noerr-Pennington* doctrine. Formed in the 1960s, *Noerr-Pennington* is a doctrine rooted in the First Amendment that shelters from antitrust liability non-sham petitions attempting to influence government action. What follows is a discussion of the doctrine's history, the sham exception, patent holdup, and citizen petitions.

A. A Brief History of the *Noerr-Pennington* Doctrine

The *Noerr-Pennington* doctrine emerged from the Supreme Court's holdings in

Law: A Roadmap for Competitive Federalism, 7 U. PENN. J. CONST. LAW 403 (2004).

¹¹¹ For example, this approach would have many hospital mergers with largely within-state effects assigned to the antitrust authorities in that state. Some states currently have significant resources that are used to evaluate hospital mergers for example, *see, e.g.*, MASS. HEALTH POLICY COMM'N, MASSACHUSETTS HEALTH POLICY COMMISSION REVIEW OF: THE PROPOSED MERGER OF LAHEY HEALTH SYSTEM; CAREGROUP AND ITS COMPONENT PARTS, BETH ISRAEL DEACONESS MEDICAL CENTER, NEW ENGLAND BAPTIST HOSPITAL, AND MOUNT AUBURN HOSPITAL; SEACOAST REGIONAL HEALTH SYSTEMS; AND EACH OF THEIR CORPORATE SUBSIDIARIES INTO BETH ISRAEL LAHEY HEALTH; AND THE ACQUISITION OF THE BETH ISRAEL DEACONESS CARE ORGANIZATION BY BETH ISRAEL LAHEY HEALTH; AND THE CONTRACTING AFFILIATION BETWEEN BETH ISRAEL LAHEY HEALTH AND MOUNT AUBURN CAMBRIDGE INDEPENDENT PRACTICE ASSOCIATION (Sept. 27, 2018), <https://www.mass.gov/files/documents/2018/09/27/Final%20CMIR%20Report%20-%20Beth%20Israel%20Lahey%20Health.pdf>.

¹¹² Our argument is not based on jurisdiction and does not require that the Court overrule its earlier decisions in *Summit Health, Ltd. v. Pinhas*, 500 U.S. 322 (1990) and *McLain v. Real Estate Bd. of New Orleans, Inc.*, 444 U. S. 232 (1980). One way to implement this "layer cake" approach would be for the Federal Agencies to withdraw from the investigation and enforcement of mergers with purely local effects, thereby imposing a constraint on states ability to participate in challenges to mergers with interstate effects.

Eastern Railroad Presidents Conference v. Noerr Motor Freight, Inc.,¹¹³ and *United Mine Workers v. Pennington*.¹¹⁴ Both cases were decided in the early 1960s, and since, the Court has decided several cases further shaping the doctrine.

In *Noerr*, members of the trucking industry sued railroad companies for commencing a publicity campaign aimed at influencing Pennsylvania’s regulation of the trucking industry.¹¹⁵ The trucking-industry plaintiffs challenged the railroads’ campaign under sections one and two of the Sherman Act.¹¹⁶ After trial, the district court entered judgment for the trucking industry plaintiffs, noting that the railroads campaign was both “malicious and fraudulent.”¹¹⁷ Indeed, the railroads had disguised their involvement in the campaign by using a third-party publicity firm.¹¹⁸ The district court also concluded that any harm delivered by the passage of duly-enacted laws could not be attributed to the defendants, thus damages were limited to the “destruction of the truckers’ goodwill.”¹¹⁹

The Supreme Court held that, even if the sole purpose of the campaign was to harm rivals, the right to petition the government removed the railroads’ publicity campaign from the Sherman Act’s coverage.¹²⁰ Neither did the railroads’ use of the “third-party technique” limit the breadth of the right to petition, although the Court agreed that this approach fell “far short of the ethical standards generally approved in this country.”¹²¹

¹¹³ *Eastern R.R. Presidents Conf. v. Noerr Motor Freight, Inc.*, 365 U.S. 127, 129-31 (1961).

¹¹⁴ *United Mine Workers v. Pennington*, 381 U.S. 657 (1965).

¹¹⁵ *Noerr*, 365 U.S. at 129–31 (1961).

¹¹⁶ *Id.* at 129.

¹¹⁷ *Id.* at 133.

¹¹⁸ *Id.* at 129–30

¹¹⁹ *Id.* at 133.

¹²⁰ *Id.* at 138–40.

¹²¹ *Noerr*, 365 U.S. at 140–41.

The Court emphasized two justifications for its holding that the Sherman Act “does not apply to mere group solicitation of governmental action.”¹²² First, it noted the need for discourse between private parties and the government in a representative democracy.¹²³ Specifically, the Court referenced both the “right of the people to inform their representatives in government” and the “right to petition.”¹²⁴ Second, it connected this principle with the interpretive canon of constitutional avoidance.¹²⁵ The dynamic between the First Amendment right to petition and the Court’s interpretation of the Sherman Act was clear: First Amendment principles shelter from antitrust liability attempts to “influence legislation by a campaign of publicity.”¹²⁶ But the Court included one important caveat: petitioning activity that is a “mere sham” remained squarely within the Sherman Act’s scope.¹²⁷

Several years later, the Court addressed *Noerr*’s application to petitions directed toward the executive branch.¹²⁸ In *Pennington*, small-mine operators alleged that large-mine operators and the coal miners’ union colluded to eliminate competition from the small mines.¹²⁹ As part of the conspiracy, both the union and large-mine operators successfully petitioned the Secretary of Labor to institute a minimum wage requirement

¹²² *Id.* at 139.

¹²³ *Id.* at 137

¹²⁴ *Id.* at 139.

¹²⁵ See *id.* at 138 (“The right of petition is one of the freedoms protected by the Bill of Rights, and we cannot, of course, lightly impute to Congress an intent to invade these freedoms.”); see also FED. TRADE COMM’N, ENFORCEMENT PERSPECTIVES ON THE *NOERR-PENNINGTON* DOCTRINE 12 (2006) (“[T]he Supreme Court appears to have skirted a ‘difficult Constitutional question’ by limiting the reach of the Sherman Act to avoid direct conflict with any of these Constitutional concerns.”).

¹²⁶ See *id.* 143.

¹²⁷ *Id.* at 144. (“There may be situations in which a publicity campaign, ostensibly directed toward influencing governmental action, is a mere sham to cover what is actually nothing more than an attempt to interfere directly with the business relationships of a competitor and the application of the Sherman Act would be justified.”).

¹²⁸ *Pennington*, 381 U.S. at 657.

¹²⁹ *Id.* at 659.

for mining operators contracting with the Tennessee Valley Authority (TVA).¹³⁰

The Court rejected the lower courts' position that, because the efforts to secure a minimum wage requirement were part of a larger conspiracy, *Noerr* did not apply.¹³¹ In doing so, the Court reaffirmed the principle, first announced in *Noerr*, that harm delivered by government action, whether legislative or executive, could not be assigned to a defendant who petitioned for that action.¹³²

After *Noerr* and *Pennington*, non-sham petitioning activity, directed toward either the executive or legislative branch, fell outside the Sherman Act's boundaries. Later, in *California Motor Transport Co. v. Trucking Unlimited*, the Court affirmed the doctrine's application to both administrative agencies and the judicial branch.¹³³

In *Trucking Unlimited*, a clash between two groups of rival highway carriers gave rise to a private antitrust action.¹³⁴ The plaintiffs alleged that the defendants conspired to automatically challenge plaintiffs' applications for transfer rights—a necessary step to comply with the applicable commercial law.¹³⁵ Further, the plaintiffs alleged that this scheme denied them access to the appropriate tribunals and thereby harmed their respective businesses.¹³⁶ At the motion to dismiss stage, the defendants argued that their activities were immune under the *Noerr-Pennington* doctrine; the district court agreed and dismissed the case.¹³⁷ The Supreme Court disagreed. The Court held that, taking the

¹³⁰ *Id.* at 660.

¹³¹ *Id.* at 669–70.

¹³² *Id.* at 671 (“It is clear under *Noerr* that [a small mine operator] could not collect any damages under the Sherman Act for any injury which it suffered from the action of the Secretary of Labor.”).

¹³³ *California Motor Transp. Co. v. Trucking Unlimited*, 404 U.S. 508, 510 (1972) (“The [*Noerr-Pennington*] philosophy governs the approach of citizens or groups of them to administrative agencies . . . and to courts.”).

¹³⁴ *Id.* at 509.

¹³⁵ *Id.*

¹³⁶ *Id.* at 511.

¹³⁷ *Id.* at 509.

plaintiffs allegations at face value, the defendants’ conduct came within the sham exception because a “pattern of baseless, repetitive claims . . . cannot acquire immunity . . . under the umbrella of ‘political expression.’”¹³⁸

Trucking Unlimited described the sham exception in a situation where the defendant uses a series of administrative and court filings devised to harm competitors. In *Professional Real Estate Investors, Inc. v. Columbia Pictures Industries (PRE)*, the Court introduced a two-step sequential test for determining whether a *single* lawsuit, rather than a course of conduct, was a mere sham and thus outside *Noerr-Pennington*’s coverage. The Court held that for a lawsuit to be a sham, it must be (1) “objectively baseless” and (2) intended to generate an anticompetitive effect through the process, not the outcome, of the litigation.¹³⁹ Applying this two-step framework to the facts, the Court affirmed the court of appeals’ holding that the copyright infringement suit under scrutiny was filed with probable cause and thus did not fall within the sham exception.¹⁴⁰

Noerr-Pennington’s scope reflects the assumption that the Sherman Act applies to private conduct—generally, the Act does not apply to anticompetitive government action.¹⁴¹ As an extension, private conduct aimed at influencing government action, even if it is anticompetitive, receives protection because the Constitution preserves the right to petition. Immunity is not extended in cases where the private conduct itself causes the anticompetitive harm. Nor is immunity extended where the private conduct directly

¹³⁸ *Id.* at 515–16.

¹³⁹ *Prof'l Real Estate Inv'rs, Inc. v. Columbia Pictures Indus., Inc.*, 508 U.S. 49, 60 (1993). The relevant subjective intent is not “subjective baselessness” (the litigant’s subjective belief about a lawsuit’s merits); rather, courts look for the defendant’s subjective intent to conduct anticompetitive activity. *Fed. Trade Comm'n v. AbbVie Inc.*, No. 18-2621, 2020 WL 5807873, at *28 (3d Cir. Sept. 30, 2020).

In the patent context, the *Noerr-Pennington* doctrine may also be overcome by showing that the challenged patent was obtained by fraud. *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 174 (1965).

¹⁴⁰ *Id.* at 63.

¹⁴¹ The state action doctrine articulates certain exceptions to this general rule regarding state governments. *See supra* Part 2.

influences private conduct which, in turn, indirectly influences government action. These distinctions are not always clear, but each has been addressed by the Court.

In *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, the Court addressed the distinction between privately influenced government action that, in turn, caused anticompetitive harm and privately caused harm where the government's involvement was indirect. There, the defendant's conspiratorial conduct that sought to influence a standard-setting body did not receive *Noerr-Pennington* immunity, even though the standard was likely to be adopted by the government.¹⁴²

Two years later, in *FTC v. Superior Court Trial Lawyers Association*, the Court declined to extend immunity to a group boycott because the desired legislative action was the *remedy* to the anticompetitive conduct, not the *source*.¹⁴³ This holding once again reaffirmed the principle underpinning *Noerr-Pennington*: The government's immunity under the Sherman Act is the touchstone; privately caused anticompetitive harm remains subject to liability.

B. Sham Litigation

In the litigation context, the *PRE* two-step sequential test provides courts with a roadmap for determining whether a litigation is a mere sham and therefore subject to antitrust scrutiny. Notwithstanding the *PRE* test's requirement of objective baselessness, economic analysis suggests that even lawsuits filed with probable cause should be subject to antitrust scrutiny. This section discusses the *PRE* test and its relationship with the underlying economics.

The Sherman Act is notably concise—a characteristic that invites greater judicial discretion than almost any other federal statute. In recent decades, the Supreme Court has adopted economics as the north star in antitrust statutory interpretation. An

¹⁴² *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 509–10 (1988).

¹⁴³ *FTC v. Superior Court Trial Lawyers Ass'n*, 493 U.S. 411, 425 (1990).

economic analysis of sham litigation offers helpful insight into the *Noerr-Pennington* doctrine's actual effects, but as a quasi-constitutional doctrine, a purely economic approach—used to outline substantive offenses—may not be equally applicable. Whether economics should shape the First Amendment's impression on federal statutes is not addressed by this Report. Instead, economic analysis is offered as a useful way to consider the sham exception and its impact on antitrust enforcement.

Firms proceed with litigation when the expected value from a judgment and its direct effects outweigh the expected costs of litigation.¹⁴⁴ Strategic litigation occurs when the expected value of a judgment on the merits *alone* does not outweigh litigation costs.¹⁴⁵ Rather, an effect collateral to the judgment produces value for the firm, increasing the expected value to a level greater than litigation costs.¹⁴⁶ An economic approach must address strategic litigation because it involves mixed motives (i.e., merits judgment plus collateral effect), which, in some cases, may include an anticompetitive collateral effect.

Using adjudicative processes for predatory purposes is a nonprice method of predation and a form of strategic litigation.¹⁴⁷ The predator uses the process of litigation to inflict costs, delays, and other business harms on potential entrants.¹⁴⁸ The greater the disparity between the predator and the victim, the more effective nonprice predation will be.¹⁴⁹ This follows because litigation costs are not tied to variable costs, thus the large predator incurs costs at a rate lower than its victim in terms of cost per dollar of sales.¹⁵⁰

¹⁴⁴ *Id.* at 15.

¹⁴⁵ Christopher C. Klein, Bureau of Economics Staff Report, *The Economics of Sham Litigation* (Apr. 1989), at 9.

¹⁴⁶ *Id.* at 9–10, 18.

¹⁴⁷ Christopher Klein, *Predation in The Courts: Legal Versus Economic Analysis in Sham Litigation Cases*, 10 INT'L REV. L. ECON. 29, 32–34 (1986).

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

Defining sham litigation solely by the existence of an anticompetitive collateral effect—one that is a necessary condition for entering the litigation—may lead to a chilling effect on legitimate lawsuits. Under this approach, some lawsuits with an overall positive expected value may still be shams, in the sense that they would not have been filed but for the anticompetitive effect.¹⁵¹ But subjecting such lawsuits to antitrust liability may be undesirable because it could deter legitimate suits, which would be seen as a restriction on access to the courts.¹⁵²

Before *PRE*'s objective-baselessness test, some courts applied a broader test resembling a purely economic approach. In *Grip-Pak, Inc. v. Illinois Tool Works, Inc.*, Judge Posner reasoned that because the First Amendment did not immunize conduct falling under the tort of abuse of process—which unlike malicious prosecution did not require a showing of probable cause—neither did the First Amendment immunize conduct based on probable cause alone.¹⁵³ He extended this principle to the sham exception and recognized that “[m]any claims *not wholly groundless* would never be sued on for their own sake; the stakes, discounted by the probability of winning, would be too low to repay the investment in litigation.”¹⁵⁴ His approach rejected the idea that probable cause for filing a lawsuit necessarily renders that lawsuit a non-sham.¹⁵⁵ Judge Posner’s analysis immunizes all lawsuits with a positive expected value, but allows negative expected value lawsuits with probable cause to be challenged under the sham exception.

In short, viewing *Noerr-Pennington*’s sham exception through an economic lens, it

¹⁵¹ Christopher C. Klein, *Strategic Sham Litigation: Economic Incentives in the Context of the Case Law*, 6 INT’L REV. L. ECON. 241, 249 (1986).

¹⁵² *Id.* at 259.

¹⁵³ *Grip-Pak, Inc. v. Illinois Tool Works, Inc.*, 694 F.2d 466, 471 (7th Cir. 1982).

¹⁵⁴ *Id.* at 472 (emphasis added).

¹⁵⁵ *Id.* (“The line is crossed when [the litigant’s] purpose is not to win a favorable judgment against a competitor but to harass him, and deter others, by the process itself—regardless of outcome—of litigating.”).

is entirely possible that anticompetitive litigation could hide behind the shield of the mere existence of probable cause (not objectively baseless) or even behind suits with net positive expected value. Whether, as a matter of statutory interpretation (and First Amendment overlays), the sham exception should include non-baseless claims when a significant portion of value is derived from the anticompetitive collateral effect is a separate matter—one that the Supreme Court decided in *PRE*. Under the *PRE* test, the first element of the sham exception requires objective baselessness; undoubtedly then, some lawsuits filed with anticompetitive intent sail away from liability under the *Noerr-Pennington* flag.

This not the end of the matter, however, because under an error-cost framework, the *PRE* test may still be the most efficient, even though some anticompetitive conduct may be immunized. The *PRE* test contains two variables—objective baselessness and subjective intent—that produce four outcomes, as reproduced below.¹⁵⁶

¹⁵⁶ Michelle M. Burtis & Bruce H. Kobayashi, *Why an Original Can Be Better Than a Copy: Intellectual Property, the Antitrust Refusal to Deal, and ISO Antitrust Litigation*, 9 SUP. CT. ECON. REV. 144, 160 (2001).

	Not Objectively Baseless	Objectively Baseless
No Intent to Commit Antitrust Violation	<p>Outcome A. Correct outcome under <i>PRE</i>.</p> <p>Type I errors possible under FULL if erroneous finding of intent.</p> <p>Cost of <i>PRE</i> < Cost of FULL.</p>	<p>Outcome C. Outcomes and costs same under <i>PRE</i> and FULL.</p> <p>Type I errors possible if erroneous finding of intent.</p>
Intent to Commit Antitrust Violation	<p>Outcome B.</p> <p>More Type II errors under <i>PRE</i> than FULL.</p> <p>Cost of <i>PRE</i> < Cost of FULL.</p>	<p>Outcome D. Outcomes and costs same under <i>PRE</i> and FULL.</p> <p>Type II errors possible if erroneous finding of no intent.</p>

Under *PRE*, when a court concludes that a lawsuit is not objectively baseless, the inquiry terminates and the issue of intent is not considered. In contrast, a finding that the lawsuit is objectively baseless causes the inquiry to proceed to the intent analysis. Thus, comparing outcomes A and B reveals the key differences between the *PRE* test and an economics-based test (i.e., anticompetitive purpose defines sham), whereas outcomes C and D will produce identical results under both tests. Ultimately, moving to the Court’s sequential *PRE* test is efficient if the marginal increase in the costs of type II errors in outcome B are outweighed by administrative and litigation cost savings plus the marginal reduction in the costs of type I errors in outcome A.¹⁵⁷ Measuring the magnitude of administrative, litigation, and error costs, and thereby drawing a conclusion about the *PRE* test’s efficiency, is a task beyond the scope of this Report. The key takeaway is that either the *PRE* test or an economics-based test akin to that applied in *Grip-Pak* may be

¹⁵⁷ *Id.* at 160–61.

more efficient, but further research is needed before making a conclusion.

C. Patent Holdup and Injunctions

Noerr-Pennington immunity and specifically sham litigation are often discussed in the patent context. Patent holders possess the right to exclude and to seek injunctive relief.¹⁵⁸ Patent infringement suits in the standard essential patent context, the ability of a patentee to receive injunctive relief, and licenses negotiated in the shadow of an injunction raise difficult questions about antitrust law's bounds and the intersection between intellectual property and antitrust law.¹⁵⁹

Standard-setting organizations (SSOs) play an important role in the economy by setting standards that facilitate the adoption of new technology. These standards take a variety of forms, including interoperability and performance standards. Consumers often benefit from standard-setting. For example, interoperability standards benefit consumers by generating network effects—value derived from increases in the number of product users.¹⁶⁰

Sometimes technology incorporated into a standard is subject to intellectual property rights, typically patents. SSOs regularly require members to disclose patented technology before potential incorporation. The SSO will then identify the standard-essential patents (SEPs) and usually require the SEP holder to agree to license their patents on fair, reasonable, and non-discriminatory (FRAND) terms. The evidence shows

¹⁵⁸ 5 DONALD S. CHISUM, CHISUM ON PATENTS § 16.01; 7 DONALD S. CHISUM, CHISUM ON PATENTS § 20.01.

¹⁵⁹ See, e.g., Douglas H. Ginsburg, Taylor M. Owings, & Joshua D. Wright, *Enjoining Injunctions: The Case Against Antitrust Liability for Standard Essential Patent Holders Who Seek Injunctions*, ANTITRUST SOURCE, Oct. 2014; Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991 (2007); Daryl Lim, *Standard Essential Patents, Trolls, and the Smartphone Wars: Triangulating the End Game*, 119 PENN ST. L. REV. 1 (2014); Fiona M. Scott Morton & Carl Shapiro, *Strategic Patent Acquisitions*, 79 ANTITRUST L.J. 463, 475 (2014); Koren W. Wong-Ervin & Joshua D. Wright, *Intellectual Property and Standard Setting*, 17 FEDERALIST SOC' REV. 52 (2016).

¹⁶⁰ Joanna Tsai & Joshua D. Wright, *Standard Setting, Intellectual Property Rights, and the Role of Antitrust in Regulating Incomplete Contracts*, 80 ANTITRUST L.J. 157, 159–160 (2015).

that SSOs adapt their intellectual property right policies to balance the interests of both contributing and adopting members.¹⁶¹ Nevertheless, sometimes patentees and licensees may encounter difficulty agreeing on what constitutes FRAND-level royalties. In such cases, a patentee may decide to file a patent infringement suit against the user of the standard. The threat of litigation or filing of a lawsuit may incentivize the parties to reach an agreement, but on occasion the patentee proceeds with the litigation, seeking an injunction against the alleged infringer.

The application of *Noerr-Pennington* is straightforward when a licensee claims the patentee violated the antitrust laws by seeking the injunction—a patent infringement suit is not subject to antitrust liability, unless it is a sham or the patent was acquired by fraud.¹⁶² Thus, asking a court for relief is exactly the type of petitioning the First Amendment protects.¹⁶³ Moreover, concerns that patent infringement suits may facilitate anticompetitive behavior when the patentee possesses a FRAND-encumbered SEP may be adequately addressed by contract and injunction law.¹⁶⁴

Some argue that patentees waive their rights under *Noerr* when agreeing to license their patents on FRAND terms.¹⁶⁵ Under that theory, an SEP holder who agreed to FRAND terms is barred from pursuing an injunction against the standard user. Others have argued creatively that an antitrust plaintiff can evade *Noerr-Pennington* immunity by alleging a “monopoly broth” of conduct violating Section 2 of the Sherman Act—a broth that includes, but is not limited to, seeking the injunction. This theory of antitrust liability has failed to gain traction in courts, though, being rejected by several U.S. courts

¹⁶¹ *Id.* at 165–66, 183.

¹⁶² *Prof'l Real Estate Inv'rs*, 508 U.S. at 60; *Walker Process Equip., Inc.*, 382 U.S. at 174.

¹⁶³ Ginsburg, Owings & Wright, *supra* note 159, at 6.

¹⁶⁴ *Id.* at 2–4.

¹⁶⁵ Statement of the Federal Trade Commission, Google Inc., No. 121-0120, at 4-5 (Jan. 3, 2013), <https://www.ftc.gov/sites/default/files/documents/cases/2013/01/130103googlemotorolastmttoftcomm.pdf>.

of appeal.¹⁶⁶

The “monopoly broth” theory has, however, found limited traction in antitrust enforcement agencies—particularly the Federal Trade Commission. In 2012, the FTC submitted an amicus brief supporting a district court’s denial of injunctive relief for an SEP holder who made FRAND commitments.¹⁶⁷ Beyond advocacy, the FTC has entered into a number of settlements on the theory that seeking an injunction alone constitutes an unfair method of competition under Section 5 of the FTC Act. In 2008, the FTC reached a settlement with Negotiated Data Solutions (N-Data) for an alleged Section 5 violation when it reneged on a commitment to license its technology for a one-time \$1,000 fee and sought to enforce its patents to obtain higher royalties.¹⁶⁸ In two other cases—*Bosch* and *Google*—FTC required defendants to withdraw from claims seeking injunctive relief for patent infringement respecting FRAND-encumbered SEPs. In *Bosch*, the FTC emphasized “the tension between offering a FRAND commitment and seeking injunctive relief.”¹⁶⁹ The next year, the FTC entered a consent agreement with Google, barring its pursuit of injunctions for FRAND-encumbered SEPs it acquired via its acquisition of Motorola Mobility.¹⁷⁰ Commissioner Ohlhausen issued a dissenting statement arguing, *inter alia*,

¹⁶⁶ Douglas H. Ginsburg & Koren W. Wong-Ervin, *Challenging Consummated Mergers Under Section 2*, COMPETITION POL’Y INT’L (May 25, 2020), <https://www.competitionpolicyinternational.com/challenging-consummated-mergers-under-section-2-2/> (discussing decisions from the Second, Fifth, and Federal Circuits rejecting a “course of conduct” theory).

¹⁶⁷ Brief for Fed. Trade Comm’n as Amicus Curiae Supporting Neither Party at 16, *Apple Inc. v. Motorola, Inc.*, Nos. 2012-1548 & 2012-1549 (Fed. Cir. Dec. 5, 2012) (“When a patentee makes a FRAND commitment to an SSO, the irreparable harm analysis, balance of harms, and the public interest will, as here, generally militate against an injunction.”); *see also* Joshua D. Wright & Douglas H. Ginsburg, *Whither Symmetry? Antitrust Analysis of Intellectual Property Rights at the FTC and DOJ*, 9 COMPETITION POL’Y INT’L 41 (2013) (discussing FTC and DOJ opposition to injunctions for holders of FRAND-encumbered SEPs).

¹⁶⁸ Complaint, *Negotiated Data Solutions LLC*, No. 051-0094, ¶¶ 12, 30-31 (Sept. 22, 2008); Decision and Order, *Negotiated Data Solutions LLC*, No. 051-0094 (Sept. 22, 2008).

¹⁶⁹ Statement of the Federal Trade Commission, *Robert Bosch GmbH*, No. 121-0081 (Nov. 26, 2012), <https://www.ftc.gov/sites/default/files/documents/cases/2012/11/121126boschcommissionstatement.pdf>.

¹⁷⁰ Statement of the Federal Trade Commission, *Google Inc.*, No. 121-0120, at 1-5 (Jan. 3, 2013), <https://www.ftc.gov/sites/default/files/documents/cases/2013/01/130103googlemotorolastmttoftcomm.pdf>.

that the consent agreement was ill-advised because *Noerr-Pennington* immunized Google's patent litigation.¹⁷¹

Although the FTC has previously treated certain injunction suits as Section 5 violations, the 2015 Policy Statement on Section 5 makes similar actions doubtful in the future. The Statement announces the FTC's commitment to avoiding using Section 5 to remedy conduct covered by traditional antitrust laws.¹⁷² Breach of a FRAND commitment attained through the competitive process, rather than through deceit, is not a violation under traditional antitrust laws.¹⁷³ Thus, the FTC is unlikely to mobilize Section 5 to attack such conduct in the future.¹⁷⁴

D. Citizen Petitions

The Hatch-Waxman Act created a distinct regulatory scheme for securing FDA approval for pharmaceutical drugs—a scheme further complicated by patent and antitrust overlays.¹⁷⁵ The citizen petition process, which allows interested parties to comment on drug applications, may be used anticompetitively, much like sham litigation.

Pharmaceutical companies must obtain FDA approval before marketing new

(discussing the FTC's settlement with Google).

¹⁷¹ Dissenting Statement of Comm'n Maureen K. Ohlhausen, Motorola Mobility LLC and Google, Inc., FTC File No. 121-0120 (Jan. 3, 2013), https://www.ftc.gov/sites/default/files/documents/public_statements/statement-commissioner-maureen-ohlhausen/130103googlemotorolaohlhausenstmt.pdf; see also Ginsburg, Owings & Wright, *supra* note 159, at 2–4 (arguing the law of contracts and injunctions adequately address concerns with SEP holders seeking injunctions).

¹⁷² Fed. Trade Comm'n, Statement of Enforcement Principles Regarding "Unfair Methods of Competition" Under Section 5 of the FTC Act (Aug. 13, 2015), https://www.ftc.gov/system/files/documents/public_statements/735201/150813section5enforcement.pdf.

¹⁷³ See *Rambus Inc. v. FTC*, 522 F.3d 456 (D.C. Cir. 2008).

¹⁷⁴ Joshua D. Wright & Angela M. Diveley, *Unfair Methods of Competition After the 2015 Commission Statement*, ANTITRUST SOURCE, Oct. 2015, at 11, https://www.americanbar.org/content/dam/aba/publishing/antitrust_source/oct15_full_source.pdf.

¹⁷⁵ The Hatch-Waxman Act is officially known as the "Drug Price Competition and Patent Term Restoration Act of 1984." Pub. L. No. 98-417, 98 Stat. 1585.

drugs. To market a new drug, a company must file a New Drug Application (NDA).¹⁷⁶ The NDA contains a list of patents associated with the new drug.¹⁷⁷ Subsequently, a generic manufacturer may file an Abbreviated New Drug Application (ANDA).¹⁷⁸ During the ANDA process, the generic manufacturer often selects what is called Paragraph IV certification—an attestation that the brand name drug’s patents are invalid, thus generic entry is unhindered.¹⁷⁹ Importantly, Paragraph IV certification is incentivized by a 180-day exclusivity window granted to the first ANDA applicant.¹⁸⁰

Obviously, the patent holders (brand name drugs) accrue significant profits during the life of their patents. An early challenge to those patents threatens to cut off substantial amounts of revenue. Not surprisingly, then, brand name manufacturers employ various techniques to extend this period of exclusivity. One such technique is the filing of citizen petitions to the FDA, a process grounded in the right to petition and the Administrative Procedure Act.¹⁸¹ The FDA receives comments on ANDA applications and some brand name manufacturers have used this process to attempt to delay generic entry.¹⁸² In addition to citizen petitions, a brand name manufacturer may file a patent infringement lawsuit against the party who filed the Paragraph IV certification. In fact, the decision to do so triggers a thirty-month stay, incentivizing brand name manufacturers to file lawsuits defending their patents.

When considering an ANDA, the FDA must assess whether the proposed generic

¹⁷⁶ 21 U.S.C. § 533(b) (2018).

¹⁷⁷ *Id.* § 533(c)(2).

¹⁷⁸ *Id.* § 533(j).

¹⁷⁹ *Id.* § 533(j)(2)(A)(vii)(IV).

¹⁸⁰ *Id.* § 533(j)(5)(B)(iii)(IV)(iv).

¹⁸¹ Administrative Procedure Act, 5 U.S.C. § 553(e) (“Each agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule.”).

¹⁸² Matthew Avery, William Newsom & Brian Hahn, *The Antitrust Implications of Filing “Sham” Citizen Petitions with the FDA*, 65 HASTINGS L.J. 113, 117 (2013).

drug is a bioequivalent to the brand name drug.¹⁸³ Thus, some brand name manufacturers use the citizen petition process to argue that the generic drug is not bioequivalent. In some cases, these petitions are frivolous.¹⁸⁴ Clearly, the brand name manufacturer's aim is to delay the entry of generic competition;¹⁸⁵ yet, this practice is presumptively immunized by *Noerr-Pennington*. Importantly, the FDA must resolve citizen petitions within 180 days—a timeline intended to limit the dilatory effect of citizen petitions—though it does not always meet the deadline.¹⁸⁶ And although federal law allows the FDA to disregard blatantly dilatory petitions, in 2013, it had yet to do so.¹⁸⁷

Noerr-Pennington broadly protects brand name manufacturers who attempt to forestall generic entry by filing citizen petitions. The sham exception only activates when the petition is objectively baseless. But this standard is elusive.

For example, in *Louisiana Wholesale Drug Co. v. Sanofi-Aventis*, the district judge instructed the jury that a citizen petition was not objectively baseless if “a reasonable pharmaceutical manufacturer could have realistically expected the FDA to grant [the] relief sought.”¹⁸⁸ Reviewing Sanofi-Aventis' motion for judgment as a matter of law, the district court concluded that a reasonable jury could have found that the petition was not objectively baseless.¹⁸⁹ As this case illustrates, whether a petition is baseless will often be an inquiry purely decided by the factfinder.

Given the fact-intensive nature of citizen-petition sham analysis, a brand name manufacturer who files a citizen petition with a sound scientific basis is less likely to face

¹⁸³ 21 U.S.C. § 533(j)(2)(A)(iv).

¹⁸⁴ *Id.* 124–25.

¹⁸⁵ *Id.* at 125.

¹⁸⁶ *Id.* at 122–23.

¹⁸⁷ *Id.* at 126 n.76.

¹⁸⁸ *Louisiana Wholesale Drug Co. v. Sanofi-Aventis*, No. 07 CIV.7343 (HB), 2009 WL 2708110, at *4 (S.D.N.Y. Aug. 28, 2009) (alteration in original).

¹⁸⁹ *Id.* at *7.

antitrust liability.¹⁹⁰ On the flip side, if a citizen petition contains unsupported or faulty scientific evidence, the citizen petition is more likely to be found a sham.¹⁹¹

Another pivotal aspect of the sham analysis for citizen petitions centers on the second prong of the *PRE* test, which focuses on the defendant's intent. Therefore, business documents discussing the citizen petition and the impetus for its submission will often be influential.¹⁹²

Brand name manufacturers may also file patent infringement suits to challenge generic manufacturers that file Paragraph IV certifications. If the brand name manufacturer chooses to sue within 45 days, a 30-month stay halts the ANDA unless the patent expires or a court holds the patent invalid.¹⁹³ When faced with a patent infringement suit, some generic manufacturers respond with antitrust counterclaims. Presumably, the brand-name manufacturer's lawsuit is immunized by *Noerr-Pennington*, but the *PRE* test still applies, determining whether the litigation falls within the sham exception.

Recently, the Third Circuit discussed the sham exception within the ANDA context, noting that, in some ways, it is more difficult to establish it in the ANDA context.¹⁹⁴ In *FTC v. AbbVie, Inc.*, the court observed that Paragraph IV certifications are, by definition, infringing acts, thus a suit in response "could only be objectively baseless if no reasonable person could disagree with the assertions of noninfringement or invalidity in the certification."¹⁹⁵ Further, the court recognized that the Hatch-Waxman Act deliberately incentivizes brand-name manufacturers to sue, thereby reducing the

¹⁹⁰ Avery, *supra* note 182, at 140.

¹⁹¹ *Id.*

¹⁹² *Id.* at 142.

¹⁹³ 21 U.S.C. § 355(j)(5)(B)(iii).

¹⁹⁴ *AbbVie*, 2020 WL 5807873, at *21.

¹⁹⁵ *Id.*

likelihood that serial lawsuits by brand-name manufacturers were brought with anticompetitive intent. In sum, the Hatch-Waxman Act creates a nuanced regulatory environment where *Noerr-Pennington* still applies but presents additional hurdles for antitrust plaintiffs seeking to overcome immunity.

CONCLUSION

Exemptions and immunities limit the reach of the antitrust laws. If the courts and agencies implement exemptions and immunities too expansively, anticompetitive conduct will elude enforcement and thereby injure consumers. The dynamic nature of the digital economy amplifies these concerns. Policymakers, courts, and regulators must diligently assess the ever-changing digital landscape and tailor antitrust doctrine accordingly.

Sectoral antitrust exemptions threaten competition and consumer welfare regardless of the industry. High-tech firms in the digital market continue to rent-seek in favor of antitrust exemptions. But economic and historical evidence proves that vigorous competition in the digital economy cannot be maintained if certain players receive antitrust immunity.

Digital markets attract the attention of both federal and state governments, contributing to tension within the federal structure. Enforcers at both levels are actively regulating private conduct in the digital space, often implicating antitrust and free speech concerns.

Careful examination of these issues will be vital to the preservation of consumer welfare and simultaneous preservation of core American values, including federalism, free speech, and the right to petition.

Occupational Licensing in Digital Markets

Maureen K. Ohlhausen

INTRODUCTION

Innovative technologies and business models are propelling the digital economy to its current heights, as well as serving consumer needs in response to unforeseen challenges caused by the COVID-19 pandemic. These technologies and business models are frequently disruptive and often bump up against restrictions that require the innovator to obtain some kind of government permission, such as a government license, to enter a market, which is a ‘Mother, May I?’ approach to competition.¹

Relatedly, some new offerings in the digital economy are subject to the ‘Brother, May I?’ problem, which is the challenge of competitor control over market entry.² This problem arises when innovative technologies or business models are required to obtain permission from incumbent competitors to enter or expand within a certain market. This might be due to a financially-interested state board or conduct by a monopolist looking to maintain its market power.³ A recurring version of the ‘Brother, May I?’ problem stems from occupational licensure.

Although occupational licensure can offer important benefits—such as protecting consumers from health and safety risks that are difficult for them to assess on their own—not *all* licensing is warranted. Indeed, licensing restrictions may impede competition and

¹ See e.g., Maureen K Ohlhausen, Former Comm’r, Fed. Trade Comm, Address Before the American Enterprise Institute: Regulatory Humility in Practice Remarks by FTC Commissioner Maureen K. Olhausen (April 1, 2015); Maureen K Ohlhausen, *The Procrustean Problem with Prescriptive Regulation*, 23 COMM. L. CONCEPTUS 1 (2014).

² Maureen K. Ohlhausen & Greg Luib, *Brother, May I?: The Challenge of Competitor Control Over Market Entry*, 4 J. ANTITRUST ENF’T 111 (2016).

³ The U.S. antitrust agencies have brought successful challenges to conduct by a monopolist to lock up an essential distribution channel with exclusionary contracts that specifically prohibit or greatly hinder the access of a rival to the market. See *id.* at 130.

hamper entry into professional and services markets while offering few consumer benefits. These regulations may result in higher prices, lower quality, and reduced consumer access to services and goods, including healthcare. This is especially true with innovative entrants in the digital economy who are often denied the ability to compete in a traditionally regulated market. In the long run these unnecessary restrictions can cause lasting damage to competition, rendering markets less responsive to consumer demand and dampening incentives for innovation.

Incumbent competitors have strong incentives to raise barriers to competition that the state will enforce for them. When licensing establishes entry conditions for an occupation, only individuals who satisfy those conditions are legally authorized to provide the services associated with that occupation, which tends to reduce the number of market participants and benefit those who meet the qualifications by allowing them to charge higher prices.⁴ Although antitrust law is normally a check on collective action by competitors to reduce competition, activities to seek government action, even anticompetitive action, are immune from liability under First Amendment protections.⁵ And public choice scholars have explained the incentives legislators and regulators might have to adopt economically harmful limits such as unnecessary occupational licenses.⁶

To provide context for this chapter on the interplay between occupational licensing and digital markets, it is important to understand the underlying concepts that guide the antitrust analysis for control of market entry under the color of state law.

⁴ George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3, 13 (1971) (“The licensing of occupations is a possible use of the political process to improve the economic circumstances of a group. The license is an effective barrier to entry because occupational practice without the license is a criminal offense.”).

⁵ See, e.g., FTC STAFF, *Enforcement Perspectives on the Noerr-Pennington Doctrine*, in 2006 FTC Staff Report (2006).

⁶ James M. Buchanan, *Public Choice: Politics without Romance*, 3 POL’Y 19 (2003); MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* (1965).

Several Federal Trade Commission victories in court—*North Carolina Dental*⁷ and *Phoebe Putney*⁸—established clearer boundaries between true state action, which is immune from antitrust law, and private action, which is not, a key distinction in combatting anticompetitive occupational licensure that requires competitor permission to enter a market. Anticompetitive occupational licensure has been extended to the digital economy when online companies have been forced out of markets where traditional brick and mortar competitors blocked entry—*Teladoc*,⁹ *Tennessee Wine and Spirits*,¹⁰ *Hines*,¹¹ and *Vizaline*.¹² With innovation flooding the digital economy, traditional brick and mortar competitors have sometimes used occupational licensure to prevent entry into the market. Although this chapter is focused primarily on antitrust challenges to occupational licensure, the array of cases affecting licensing of digital commerce discussed involves challenges on a variety of Constitutional grounds, including the Commerce Clause and the First and Fourteenth Amendments. Each case implicates the same underlying issue, however: state regulation to protect entrenched bricks and mortar entities from digital commerce.

This chapter proceeds as follows. Section I begins with the background and recent history of the state action doctrine and its relation to occupational licensure, addressing the recent cases listed above. Section II discusses recent and current litigation involving competitors using the ‘Brother, May I?’ approach to prevent new technology in the digital economy from entering the market. Section III argues that the FTC’s targeted efforts in *North Carolina Dental* and *Teladoc* should extend to current issues in the digital economy

⁷ N.C. State Bd. of Dental Exam’rs v. FTC, 135 S. Ct. 1101 (2015).

⁸ FTC v. Phoebe Putney Health Sys., Inc., 133 S. Ct. 1003 (2013).

⁹ *Teladoc, Inc. v. Tex. Med. Bd.*, 112 F.Supp 3d 529 (W.D. Tex. 2015).

¹⁰ *Tenn. Wine & Spirits Retailers Ass’n v. Thomas*, 139 S. Ct. 2449 (2019)

¹¹ *Hines v. Quillivan*, 395 F. Supp 3d 857 (S.D. Tex. 2019).

¹² *Vizaline L.L.C. v. Tracy*, 949 F.3d 927 (5th Cir. 2020).

by narrowing the use of occupational licensure for health services to regulations that actually protect health and safety. Section IV discusses the Commerce Clause implications caused by occupational licensure on new technology in the digital economy. Section V concludes this chapter.

I. THE STATE ACTION DOCTRINE AND STATE LICENSING BOARDS

The state action doctrine—first announced in the 1943 U.S. Supreme Court opinion, *Parker v. Brown*,¹³—gives certain state decisions protection from the reach of the Sherman Act. The Court reasoned that “in light of states’ sovereign status and principles of federalism, Congress would not have intruded on state prerogatives through the Sherman Act without expressly saying so.”¹⁴ The *Parker* Court set a threshold inquiry for invoking state action immunity, which is whether the anticompetitive action was by the sovereign or by a private party.

State action immunity has been modified doctrinally through the years. Four decades after creation of the state action doctrine, the Supreme Court limited its scope by creating a two-part test in *California Retail Liquor Dealers Assn v. Midcal Aluminum, Inc.*¹⁵ First, the defendant claiming the immunity must demonstrate that the conduct in question was in conformity with a “clearly articulated” state policy. Second, the defendant must demonstrate that the state engaged in “active supervision” of the conduct.

The *Midcal* test limited the use of the state action doctrine by creating political accountability for state legislators that choose to displace competition through regulation.

¹³ *Parker v. Brown*, 317 U.S. 341 (1943).

¹⁴ FTC OFFICE OF POLICY PLANNING, REPORT OF THE STATE ACTION TASK FORCE: RECOMMENDATIONS TO CLARIFY AND REAFFIRM THE ORIGINAL PURPOSES OF STATE ACTION DOCTRINE TO HELP ENSURE THAT ROBUST COMPETITION CONTINUES TO PROTECT CONSUMERS 5 (2003) [hereinafter “STATE ACTION TASK FORCE REPORT”].

¹⁵ *Cal. Retail Liquor Dealers Ass’n v. Midcal Aluminum, Inc.*, 445 U.S. 97 (1980).

However, even with these limitations, the problem of private competitors claiming the protection of state authority to shield their private efforts to exclude competitors remains, and the FTC therefore undertook an organized effort to bring further clarity to the state action doctrine through scholarly research and targeted case selection.¹⁶ The *Phoebe Putney* and *North Carolina Dental* decisions represent not only a narrowed interpretation of antitrust immunity under the state action doctrine but highlight the issues with state regulation and occupational licensure.

A. Phoebe Putney and Certificate of Need Laws

In April 2011 the FTC filed a complaint challenging a merger involving a local hospital authority in Albany, Georgia.¹⁷ The parties arranged to have the local hospital authority acquire Palmyra Park Hospital from HCA Inc. and then transfer all management control of the hospital to Phoebe Putney Health System, Inc. Although the transaction represented a virtual merger-to-monopoly, both the district court and Eleventh Circuit Court of Appeals granted and affirmed the defendants' motion to dismiss on state action grounds.¹⁸

The FTC then turned to the Supreme Court, which in a unanimous 2013 decision sided with the agency.¹⁹ For their actions to be immune from antitrust laws under the state action doctrine, private entities must demonstrate the state "clearly articulated and affirmatively expressed" a policy displacing competition and thus allowing the otherwise

¹⁶ See generally STATE ACTION TASK FORCE REPORT, *supra* note 14.

¹⁷ Press Release, Fed. Trade Comm'n, FTC and Georgia Attorney General Challenge Phoebe Putney Health System's Proposed Acquisition of Palmyra Park Hospital as Anticompetitive (April 20, 2011) (<https://www.ftc.gov/news-events/press-releases/2011/04/ftc-georgia-attorney-general-challenge-phoebe-putney-health>).

¹⁸ See *FTC v Phoebe Putney Health Sys, Inc.*, 663 F.3d 1369, 1375 (11th Cir. 2011) (noting that "on the facts alleged, the joint operation of [Phoebe] and Palmyra would substantially lessen competition or tend to create, if not create, a monopoly"); *FTC v Phoebe Putney Health Sys Inc* 793 F Supp 2d 1356, 1381 (M.D. Ga. 2011).

¹⁹ *Phoebe Putney Health Sys, Inc.*, 133 S. Ct. at 1015–17.

anticompetitive conduct at issue.²⁰ The Court held that a general grant of corporate powers to a private entity is insufficient by itself to satisfy the clear articulation prong of *Midcal*.²¹ Therefore, the challenged transaction was not immune from antitrust scrutiny, and the case was remanded for further proceedings.

The FTC complaint counsel resumed the administrative litigation that had been stayed. It did not take very long, however, before the agency recognized a potentially insurmountable hurdle to a successful resolution of this case: the Georgia certificate of need (“CON”) laws.

CON laws establish requirements for state approval before a new health care provider can enter a market or an existing provider can make certain capital improvements, a classic “Brother May I?” situation.²² Normally, states are not directly involved in the entry or improvement decisions of private firms except for requiring firms to comply with zoning laws and other general commercial regulations. However, CON laws were created so that the state could step in and prevent competing hospitals from purchasing equipment that would sit idle to keep up with other competing hospitals, which was claimed to prevent waste and lower health care costs. Although a small number of studies identify some very modest benefits from CON laws, the majority of studies fail to establish any definitive link between CON laws and lower unit costs.²³ Even with the lack of conclusive data showing an increase in consumer welfare through CON laws and the presence of other laws that ensure patient safety about two-thirds of states

²⁰ *Id.* at 1010 (citing *Cal Retail Liquor Dealers Ass’n v. Midcal Aluminum Inc.*, 445 US 97, 105 (1980)).

²¹ *Id.* at 1012.

²² See Maureen K. Ohlhausen, *Certificate of Need Laws: A Prescription for Higher Costs*, 30 ANTITRUST 50 (2015).

²³ See E.g., DAVID SALKEVER, *Regulation of Prices and Investment in Hospitals in the U.S.*, in 1B HANDBOOK OF HEALTH ECONOMICS 1526–27 (Anthony J. Culyer & Joseph P. Newhouse eds., 2000) (“At a minimum, it seems fair to conclude that direct CON effects on costs are not negative.”); Patrick A. Rivers, Myron D. Fottler, & Jemima A. Frimpong, *The Effects of Certificate of Need Regulation on Hospital Costs*, 36 J. HEALTH CARE FIN. 1, 11 (2010) (finding that CON laws “may actually increase costs”).

continue to use the antiquated regulation.²⁴

Georgia is one of those states, and even if the Commission could have established antitrust liability, which was likely for a merger to monopoly, the state CON laws would have prevented a divestiture of any hospital assets.²⁵ Because the Albany region was deemed ‘over-bedded’ it was unlikely that a divestiture buyer could obtain CON approval, which forced the FTC to finalize a consent agreement with Phoebe Putney without divestiture.²⁶

There are several takeaways from the *Phoebe Putney* matter. Importantly, the Supreme Court decision narrowing the state action doctrine is a significant victory for competition principles. It is also a reminder of the anticompetitive nature of laws that effectively give competitors veto power over new market entry.

B. North Carolina Dental, State Licensing Boards Run by Market Participants

In 2010, the FTC filed an administrative complaint in *North Carolina Dental*, alleging that the State Board—through its dentist-members—was “colluding to exclude non-dentists from competing with dentists in the provision of teeth whitening services.”²⁷

²⁴ See National Conference of State Legislatures, *CON-Certificate of Need State Laws*, NCSL (Dec. 1, 2019), <https://www.ncsl.org/research/health/con-certificate-of-need-state-laws.aspx> (indicating that 35 States retain some type of CON program as of 2019).

²⁵ Ohlhausen & Luib, *supra* note 2, at 13. (“At first, the Commission issued a proposed consent that imposed on Phoebe Putney certain behavioral restrictions related to CON applications in the relevant geographic market, but no divestiture requirement. The Commission later became aware of certain information in connection with the public comments on the proposed consent order, however, that made it second-guess its initial assessment of the CON laws’ preclusion of structural relief. During this time, a newly formed health care entity, North Albany Medical Center, LLC (North Albany), filed a request for determination with the Georgia Department of Community Health (DCH), asking whether its potential acquisition of divested hospital assets would be permitted under the CON laws. North Albany obtained a favourable initial determination by DCH staff in June 2014. Thereafter, the Commission withdrew its proposed consent and sent the case back to administrative litigation.”)

²⁶ See Statement of the Fed. Trade Comm’n, *In re Phoebe Putney Health Sys, Inc.*, Dkt No 9348, 2 (March 31, 2015).

²⁷ N.C. Bd. of Dental Exm’rs, 081 FTC 0137, Compl. at,1 Docket No. 9343 (2013).

The Board, after deciding that whitening teeth constitutes the practice of dentistry, issued letters to non-dentist providers and their landlords, stating they were illegally practicing dentistry without a license and ordering them to cease and desist.

Prior to the administrative trial over the alleged violation of § 1 of the Sherman Act, the Board filed a motion to dismiss—arguing immunity under the state action doctrine.²⁸ The FTC, in a unanimous opinion, held that “a state regulatory body that is controlled by participants in the very industry it purports to regulate must satisfy both prongs of *Midcal* to be exempted from antitrust scrutiny under the state action doctrine.”²⁹ The Commission further found that the decision to classify teeth whitening as the practice of dentistry and to enforce cease and desist orders based on that decision failed to demonstrate ‘active supervision’ by the state under the *Midcal* test.³⁰

On appeal, the Fourth Circuit Court of Appeals denied the Board’s petition for review of the FTC’s order and affirmed the decision.³¹ In 2015, the Supreme Court ruled in the Commission’s favor, holding that “a state board on which a controlling number of decisionmakers are active market participants in the occupation the board regulates must satisfy *Midcal*’s active supervision requirement in order to invoke state-action antitrust immunity.”³² A few aspects of the Court’s opinion stand out.

First, the Court explained while citing *Phoebe Putney* that, “given the fundamental national values of free enterprise and economic competition that are embodied in the federal antitrust laws, ‘state action immunity is disfavored, much as are repeals by

²⁸ N.C. Bd. of Dental Exm’rs, 081 FTC 0137, Def.’s Motion Dismiss at 1, Docket No. 9343 (2013).

²⁹ N.C. Bd. of Dental Exm’rs, 081 FTC 0137 at 13 (2011). The Defendant’s motion to dismiss was addressed by the Commission in the first instance, based on 2009 changes to the rules governing its administrative litigation.

³⁰ *Id.* at 17.

³¹ See N.C. State Bd. of Dental Exam’rs v FTC, 717 F.3d 359 (4th Cir 2013).

³² N.C. State Bd. of Dental Exam’rs v. FTC, 135 S. Ct. 1101 (2015).

implication.”³³ Next, the Court focused on political accountability. After rejecting the idea that state agencies are sovereign actors, the Court contrasted state agencies to municipalities.³⁴ Most significantly, the Court noted that “municipalities are electorally accountable and lack the kind of private incentives characteristic of active participants in the market.”³⁵ Finally, the Court briefly addressed the issue of active supervision as it relates to a state agency controlled by market participants. Although the Court made clear that day-to-day involvement in agency operations is not required, it identified a few constant requirements of active supervision:

- (1) Review [of] the substance of the anticompetitive decision, not merely the procedures followed to produce it; (2) supervisory ‘power to veto or modify particular decisions to ensure they accord with state policy;’ (3) the ‘mere potential for state supervision’ is insufficient; and (4) ‘the state supervisor may not itself be an active market participant.’³⁶

Unlike *Phoebe Putney*, this decision was not unanimous, and the dissent took issue with immunity not applying to state-created agencies. The dissenting Justices further identified several questions left unanswered by the majority:

- (1) What is a “controlling number” of decision makers?; (2) Who is an “active market participant?”; and (3) What is the scope of the market in which a member may not participate while serving on the board?³⁷

North Carolina Dental was an essential victory for competition and consumers as it forced states to be held politically accountable for how they choose to meddle in the competitive system.³⁸ Where there is a benefit concentrated in the hands of a small number of incumbent providers and the competitive harm is dispersed across all

³³ *Id.* at 1110.

³⁴ *Id.* at 1111.

³⁵ *Id.* at 1112.

³⁶ *Id.* at 1116–17.

³⁷ NC State Bd. of Dental Exm’rs, 135 S. Ct. at 1123.

³⁸ See, e.g., *FTC v Ticor Title Ins. Co.*, 504 US 621, 636 (1992) (“Federalism serves to assign political responsibility, not to obscure it. Neither federalism nor political responsibility is well served by a rule that essential national policies are displaced by state regulations intended to achieve more limited ends.”).

consumers of health care services, public choice theory predicts such incumbent exploitation of state licensing laws and regulations.³⁹ The adverse competitive results of this are manifest and is the regulated replacing and acting as the regulators.⁴⁰

Both *Phoebe Putney* and *North Carolina Dental* exemplify the anticompetitive nature of the ‘Brother, May I?’ approach to regulation. Moreover, they illustrate how state licensure requirements can be a tool to fence out competition, a problem that becomes even more acute for the multi-state digital economy.

II. OCCUPATIONAL LICENSURE IN THE DIGITAL ECONOMY

The digital economy is, simply put, the economic activity and connection of businesses online including sales, data collection, communication, and devices. As internet use increases and technology improves, the ability for traditionally in person sectors of the economy to transition to the online marketplace follows suit. In the age of COVID-19 it is apparent that the digital economy is an essential and permanent fixture in the economy at large.

As early as 2004, the FTC engaged in studies regarding the use of occupational

³⁹ See, e.g., Steven Menashi and Douglas H Ginsburg, *Rational Basis with Economic Bite*, 8 NYU J. L. & LIBERTY 1055, 1087–88 (2014) (“By now, ‘[a]ll reasonably sophisticated persons know that a well-knit special interest group is likely to prevail over an amorphous “public” whose members are dispersed and, as individuals, are not in sharp conflict with the organized interest.’ The occupational licensing laws recently invalidated under rational basis review are just this type of special-interest legislation.” (quoting Walter Gellhorn, ‘The Abuse of Occupational Licensing’ 44 UNIV. CHI. L. REV. 6, 16 (1976))); Timothy Sandefur, *A Public Convenience and Necessity and Other Conspiracies Against Trade: A Case Study from the Missouri Moving Industry*, 24 GEO. MASON C.R. L. J. 159, 176 (2014) (“Public choice theory predicts that where the government can redistribute wealth or opportunities between private groups, those groups will invest their resources in obtaining favorable legislation that will benefit them or handicap their rivals. Entry restrictions like occupational licenses or [certificate-of-need] laws are made-to-order examples.”).

⁴⁰ See, e.g., Daniel J Gilman & Julie Fairman, *Antitrust and the Future of Nursing: Federal Competition Policy and the Scope of Practice*, 24 HEALTH MATRIX 143, 165 (2014) (“[L]icensure may be used by incumbent professionals to insulate themselves from competition. By restricting the entry of competitors, licensure can restrict supply, which can increase the income of incumbents (at consumer expense) or decrease the pressure on incumbents to improve non-price aspects of their services, such as quality or convenience.” (footnote omitted)).

licensure in the digital economy as seen in its 2004 E-Commerce contact lenses report.⁴¹ The FTC, after decades of enforcement in the eye care industry—including the enforcement of the Eyeglass Rule, which requires an eyecare provider to give a patient, at no extra cost, a copy their eyeglass prescription after completion of an eye exam⁴²—found that the benefits associated with requiring third party online sellers of replacement contact lenses to obtain a license increased the cost of replacement lenses.⁴³ These increased costs would actually harm public health by inducing consumers to replace the lenses less frequently than doctors recommend or to substitute other forms of contact lenses that pose greater health risks. In sum, the added barrier to online sellers of contact lenses reduced competition and consumer choice in the entire market.⁴⁴

Issues such as those presented in the FTC Contact Lenses Report appear in numerous other industries and board decisions to increase licensure requirements when incumbents feel pressure from new competitors in the digital economy. This section will address examples of recent matters involving occupational licensure in the digital economy for online practice by doctors and veterinarians, online sales of liquor and wine, and online map making. Each example shows how occupational licensing regimes are prone to misuse in innovative markets controlled by strong incumbents.

A. Teladoc, Inc. v. Texas Medical Board: Occupational Licensure of Online Medical Practice

When innovative new entrants threaten to disrupt a market with strong incumbents, these incumbents may erect rules and regulations through occupational

⁴¹ FEDERAL TRADE COMMISSION STAFF, POSSIBLE ANTICOMPETITIVE BARRIERS TO E-COMMERCE: CONTACT LENSES: A REPORT FROM THE STAFF OF THE FEDERAL TRADE COMMISSION, (2004) [*hereinafter* CONTACT LENSES REPORT].

⁴² 16 C.F.R § 456 (1992).

⁴³ CONTACT LENSES REPORT, *supra* note 41.

⁴⁴ *Id.*

licensure to preserve the status quo. The case of *Teladoc, Inc v. Texas Medical Board*⁴⁵ is a timely example of rules that not only thwart entry but also threaten consumers' health. The Texas Medical Board ("TMB"), filled primarily with active physicians, enacted a rule that would greatly reduce a patient's ability to obtain medical care from online Teladoc physicians.

Teladoc employed "board certified physicians who are provided specialized training in treatment and diagnosis via telephone."⁴⁶ After a patient requested a consultation with Teladoc, the physician would typically review the patient's information and medical records prior to calling the patient for more information. On the phone call, the Teladoc physician would use the background information combined with any additional information offered by the patient or solicited by the physician to offer medical advice.⁴⁷ The medical advice could range from referring the patient to an in person doctor's appointment, suggesting emergency room visits, or prescribing *certain* medications—Teladoc did not prescribe "DEA-controlled substances (including narcotics)."⁴⁸

However, the TMB, in 2015, changed its rules to require a "face-to-face visit or in-person evaluation" before a physician could issue any prescription.⁴⁹ Teladoc challenged

⁴⁵ *Teladoc, Inc. v. Tex. Med. Bd.*, 112 F. Supp. 3d 529 (W.D. Tex. 2015).

⁴⁶ *Id.* at 533.

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.*; See also James C. Cooper, Elyse Dorsey, & Joshua D. Wright, *State Licensing Boards, Antitrust, and Innovation*, released by Regulatory Transparency Project of the Federalist Society (November 13, 2017) (citing *Teladoc*, 112 F. Supp. 3d at 534.) ("TMB issued a letter to Teladoc, stating that its rules (particularly 22 Tex. Admin. Code § 190.8) required a "face-to-face" examination before prescribing a dangerous drug or controlled substance. The letter clearly conveyed TMB's position that Teladoc and its physicians were violating the rule by issuing prescriptions following telephone conversations. Teladoc challenged TMB's interpretation, and the Texas Court of Appeals held the letter's interpretation procedurally invalid, finding "TMB's pronouncements in its June 2011 letter are tantamount to amendments to the existing text," which listed a "face-to-face" examination as a possible—but not required—method for establishing a proper physician-patient relationship. (citing *Teladoc, Inc. v. Tex. Med. Bd.*, 453 S.W.3d 606, 620 (Tex. App. Austin 2014, pet. filed)). In response, TMB issued an "emergency" rule on January 16, 2015, amending the old Rule

the revision claiming it violated federal antitrust laws and would increase prices while reducing choice, access, innovation, and overall supply.⁵⁰ The prominent issue in the litigation was state action immunity and more specifically whether the TMB met the active supervision requirement as set forth in *North Carolina Dental*.⁵¹ Although TMB argued that it was subject to supervision through judicial review by the courts of Texas, the State Office of Administrative Hearings, and the Texas Legislature, the court found these types of review were “limited and fail[ed] to confer on the reviewing court a method for looking to whether the decision of the TMB is ‘in accord with state policy.’”⁵² In sum the TMB was the type of board the *North Carolina Dental* Court predicted could create anticompetitive rules if not held politically accountable by active supervision.

The FTC recognized the anticompetitive effects that could flow from such regulations “especially. . . in medically underserved areas or with medically underserved populations” much like the conditions that exist in Texas.⁵³ Moreover, TMB’s rule would have imposed costs upon patients in Texas because the occupational licensing regime excluded board-certified entrants, and reduced patient access to those new entrants, which in turn raised prices and reduced output. Following the outcome in this case, Texas chose to remove the restriction on online medical practice, thereby allowing greater access to medical treatment in rural areas.

This case demonstrates how antitrust laws can intervene to protect consumers from these abuses. In the current COVID-19 crisis the benefits of online medicine are

190.8. Teladoc sought and obtained a temporary injunction of the emergency rule in Texas state court. TMB then conducted formal rulemaking, and the new rule passed vote on April 10, 2015.”).

⁵⁰ Teladoc, 112 F. Supp. 3d at 537.

⁵¹ Teladoc, Inc. v. Tex. Med. Bd., No. 1-15-CV-343, 2015 WL 8773509, at *7 (Dec. 14, 2015).

⁵² *Id.* at *7–10. The court further noted the proffered examples could not modify any TMB decision but only reverse or remand.

⁵³ See, e.g., U.S. FED. TRADE COMM’N, *Economic Liberty*, in OPTIONS TO ENHANCE OCCUPATIONAL LICENSE PORTABILITY REPORT (2018). The FTC has a history of investigating and reporting upon the effects of occupational licensing.

clear. Yet, the ‘Brother, May I?’ approach by the TMB highlights the potentially catastrophic effects that occupational licensure can have on innovation and consumer welfare.

B. Hines v. Quillivan: Occupational Licensure of Online Veterinary Practice

A few years after Texas lessened restrictions on medical practice online, a veterinarian filed an equal protection claim for his online veterinary practice. The Texas State Board of Veterinary Examiners shut down and fined Dr. Ronald Hines’ online practice because it violated the Texas statute establishing veterinarian-client-relationship.⁵⁴ Dr. Hines’ case has a similar feel to *Teladoc*, but differs slightly because the Board of Veterinary Examiners enforced a new statute passed by the state legislature rather than creating its own rule. Yet, even with a statute, this case shows the effects that a board of market participants can have to influence a legislature to pass a law that would prevent innovative entrants from coming to market. Moreover, this case presents constitutional law issues that complicate the ability of online platforms to compete with in-state incumbents.

This section will give a brief background of the *Hines I*⁵⁵ case brought by Mr. Hines prior to the decision in *Teladoc*. Next, this section will outline the arguments made in *Hines II*⁵⁶, currently before the Fifth Circuit. Finally, this section will compare the effects of the licensure requirements on consumers in online medical practice and online veterinary practice.

1. Hines I: ‘Brother May, I?’ and the Constitution

From 2002 to 2012, Dr. Hines gave veterinary advice both generally via his website

⁵⁴ *Hines v. Alldredge*, 2014 WL 11320417, (S.D. Tex. Feb. 11, 2014) (cert. den.).

⁵⁵ *Hines v. Alldredge*, 783 F.3d. 197 (5th Cir. 2015).

⁵⁶ *Hines v. Quillivan*, 395 F. Supp. 3d 857 (S.D. Tex. 2019).

and directly to patients who solicited his expertise.⁵⁷ Hines provided advice to various groups of people such as pet owners who had no access to conventional veterinary care—either because of geography and/or inability to pay—and other pet owners who might have received conflicting diagnoses.⁵⁸ However, Hines never attempted to serve as any patient’s primary veterinarian by providing medication, performing procedures, or physically examining the animal.⁵⁹ In fact, on his website, Hines advised any visitors that his advice was inherently limited and he “[did] not provide any advice or accept payment if in his professional judgment doing so would [have been] inappropriate.”⁶⁰

In 2012, the Texas State Board of Veterinary Examiners (“TBVE”) informed Hines that he was in violation of *Tex. Occ. Code § 801.351*,⁶¹ which prohibited veterinarians from providing veterinary advice without first establishing a veterinarian-client-patient relationship. In 2005, the state legislature amended the statutory provision to require a veterinarian-client-patient relationship before practicing and expressly excluded forming a relationship “solely by telephone or electronic means.”⁶² In passing the amendment, the legislature recognized the TBVE’s claim that the veterinarian-client-patient relationship was a cornerstone of a veterinarian’s care of animals and veterinarians could circumvent that relationship via new technology.⁶³

⁵⁷ See *Hines v. Alldredge*, 2014 WL 11320417, (S.D. Tex. Feb. 11, 2014) (cert. den.).

⁵⁸ *Id.* at *1.

⁵⁹ *Id.*

⁶⁰ *Id.* at *1.

⁶¹ TEX. OCC. § 801.351 (West 2019). Tex. Occ. Code § 801.351(a) states that “a person may not practice veterinary medicine unless a veterinarian-client-patient relationship exists.” Such a relationship only exists if the veterinarian “possesses sufficient knowledge of the animal.” Tex. Occ. Code § 801.351(a)(2). Tex. Occ. Code § 801.351(b) states that “[a] veterinarian possess sufficient knowledge of the animal . . . if the veterinarian has recently seen, or is personally acquainted with, the keeping and care of the animal by: (1) examining the animal; or (2) making . . . visits to the premises on which the animal is kept.” Tex. Occ. Code § 801.351(c) states that “[a] veterinarian-client-patient relationship may not be established solely by telephone or electronic means.”

⁶² TEX. OCC. § 801.351 (3)a-c (West 2005).

⁶³ ROBBY COOK, BILL ANALYSIS OF VETERINARY LICENSING ACT (2005), <https://capitol.texas.gov/tlodocs/79R/>

Dr. Hines’ violation of the statute was based on his failure to physically examine the animals about which he provided advice.⁶⁴ The TBVE ordered a one-year suspension of his veterinary license, required him to retake portions of the veterinary licensing exam, and imposed a \$500 fine.⁶⁵ Hines filed a complaint for injunctive relief claiming violations of his rights under the First Amendment, Fourteenth Amendment substantive due process, and Fourteenth Amendment equal protection.⁶⁶

The district court dismissed the equal protection and due process claims concluding that “because the law did not discriminate on the basis of any suspect classification, the count was evaluated pursuant to rational basis review—and held that the physical examination requirement passed that deferential standard.”⁶⁷ However, the district court denied the defendants’ motion to dismiss the First Amendment claims. On appeal the Fifth Circuit affirmed the district court’s Fourteenth amendment holding but reversed and remanded the First Amendment claim in favor of the defendant.⁶⁸ The Fifth Circuit explained that this restriction on the veterinary practice is within the scope of state regulation, and any effects on Dr. Hines’ First Amendment rights were incidental to the constraint and therefore did not violate the constitution.⁶⁹

In 2017, Texas Governor Greg Abbot signed SB 1107, which allowed medical doctors to practice telemedicine in Texas without an in-person examination. And shortly after in June 2018, the U.S. Supreme Court explained there is no professional-speech exception to the First Amendment in *NIFLA v. Becerra*.⁷⁰ The Court explained that

analysis/pdf/HB01767E.pdf#navpanes=0.

⁶⁴ See *Hines v. Alldredge*, 2014 WL 11320417, (S.D. Tex. Feb. 11, 2014) (cert. den.).

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ *Hines v. Alldredge*, 783 F.3d. 197, 200 (5th Cir. 2015).

⁶⁸ *Id.* at 202.

⁶⁹ *Id.*

⁷⁰ *Nat’l Inst. of Family & Life Advocates v. Becerra*, 138 S. Ct. 2361 (2018).

“professional speech” is difficult to define as all it embodies is a profession that requires a license from the state.⁷¹ But if that is the case it “gives the States unfettered power to reduce a group’s First Amendment rights by simply imposing a licensing requirement.”⁷² In conclusion the Court found that there was not a “persuasive reason for treating professional speech as a unique category that is exempt from ordinary First Amendment principles.”⁷³ With this new ruling by the Supreme Court changing controlling constitutional law, Dr. Hines was able to bring his First Amendment suit again under the *res judicata* exception.

2. Hines II: Operating a Tele-practice

On June 11, 2019, the United States District Court for the Southern District of Texas decided Hines’ second case in the court.⁷⁴ Dr. Hines argued that the *NIFLA* holding and *Tex. Occ. Code § 111.005*,⁷⁵ the new telemedicine rule, breathed life into his First Amendment and Fourteenth Amendment due process claims respectively.⁷⁶ Again, defendants sought a motion to dismiss all of Hines’ claims.

The district court disagreed with Hines’ claim that *NIFLA* abrogated the Fifth Circuit’s decision in *Hines I*.⁷⁷ The court held that *NIFLA* did not reference *Hines I* nor did it make a statement that directly contradicts the Fifth Circuit’s opinion.⁷⁸ In sum, the court concluded that Hines’ argument was that the Fifth Circuit reached an erroneous conclusion and under the rule of orderliness, the district court cannot reconsider that

⁷¹ *Id.* at 2375.

⁷² *Id.*

⁷³ *Id.*

⁷⁴ *Hines v. Quillivan*, 395 F. Supp. 3d 857 (S.D. Tex. 2019).

⁷⁵ TEX. OCC. § 111.005 (a)(3)(A)-(C) (West 2019).

⁷⁶ *Hines*, 395 F. Supp. 3d at 863.

⁷⁷ *Id.* at 865.

⁷⁸ *Id.*

decision.⁷⁹

Next, the court addressed the Equal Protection Clause claim, noting that *Hines I* does not foreclose the current claim.⁸⁰ *Hines I* turned on the difference between veterinarians who saw animals in person and those who had not. *Hines II* focuses on the different treatment between doctors who can perform telemedicine on human patients and veterinarians who cannot perform telemedicine on animals.⁸¹ Dr. Hines argued that the new law for doctors required the court to determine whether the Board has a rational basis to maintain the in-person requirement for veterinarians when Texas law removed the same requirement for doctors treating humans.⁸² The district court found that the Board presented two reasons that form a rational basis. First, because animals cannot speak as humans can speak, a physical examination is important because without one the veterinarian would have to rely on the animal's owner to convey information about symptoms.⁸³ Second, because owners lack knowledge about animal physiology, the information conveyed would likely lack accuracy.⁸⁴

For these reasons the district court granted defendants motion to dismiss all claims. Hines has appealed the decision and oral arguments have been made to the Fifth Circuit. As of now the Fifth Circuit has not released its decision. The similarities between *Hines I-II* and *Teladoc* are clear. The incumbent veterinarians who sit on the TBVE have prevented the market entry of an innovative supplement to traditional veterinary practice. However, the difference is that a Texas Statute has given them the ability to restrict the market. Although *Hines* is not argued as a state action doctrine case, the effects

⁷⁹ *Id.*

⁸⁰ *Id.* at 867.

⁸¹ *Hines v. Quillivan*, 395 F. Supp. 3d 857, 867 (S.D. Tex. 2019).

⁸² *Id.* at 869.

⁸³ *Id.*

⁸⁴ *Id.*

of occupational licensure remain the same.

C. *Vizaline, L.L.C. v. Tracy: Occupational Licensure in Non-Medical Fields*

The Fifth Circuit recently applied the *NIFLA* Court’s professional speech analysis to an innovative map making online competitor in Mississippi. In *Vizaline*,⁸⁵ the Mississippi Board of Licensure for Professional Engineers and Surveyors (“Mississippi Board”) claims *Vizaline* is partaking in the unlicensed practice of surveying. Like both *Teladoc* and *Hines*, the State Board is looking to squelch an innovative online entrant to the market through occupational licensure.

Vizaline is an important test for the state action doctrine and occupational licensure. First, the case revolves around a state licensing board’s determination that a novel process for map making constitutes the practice of surveying and therefore is under the board’s jurisdiction. Next, it expands the *NIFLA* professional speech analysis to the Fifth Circuit. Finally, this again exemplifies the issue that occurs when incumbents can stifle the entry of competing business models through the use of occupational licensure.

1. The Background of *Vizaline*

Vizaline, a Mississippi technology startup, “converts existing metes-and-bounds descriptions of real property into ‘simple map[s]’ . . . through a computer program that overlays lines onto satellite images.”⁸⁶ The company sells these maps exclusively to community banks for small, less expensive properties that serve as loan collateral. These banks would normally have to use a costly in-person survey for these properties. *Vizaline* has never held itself out to be a surveyor. In fact, *Vizaline* stated it does not “establish or purport to establish metes and bounds descriptions of property . . . [n]or does it locate,

⁸⁵ *Vizaline, L.L.C. v. Tracy*, 949 F.3d 927 (5th Cir. 2020).

⁸⁶ *Id.* at 929.

relocate, establish, reestablish, lay out, or retrace any property boundary or easement.”⁸⁷ Moreover, Vizaline does not market its product as a replacement for a legal survey and alerts its customers that it is not a legal survey. If Vizaline encounters discrepancies in its drawings, it recommends its customers hire a licensed surveyor to correct the issue. Currently, the company has six employees and operates in five states.⁸⁸

In Mississippi, the practice of surveying is regulated by the Mississippi Board in accordance with *Miss. Code § 73-13-95* which states, “Any person who shall practice, or offer to practice, surveying in this state without being licensed. . . shall be guilty of a misdemeanor.”⁸⁹ In particular, the Mississippi Board alleged that Vizaline violated *Mississippi Code § 73-13-95(c)*, which prohibits “‘receiv[ing] any fee’ for performing ‘any service, work, act or thing which is any part of the practice of surveying’ without a surveying license.”⁹⁰ The Mississippi Board, prior to bringing a lawsuit against Vizaline, asked the company to revise its website to not market to the general public and clarify it is not to be used as a survey—Vizaline complied.⁹¹ Two years after its requests, the Mississippi Board sought an injunction against Vizaline’s business and disgorgement of all compensation. In response to the requested injunction Vizaline filed a lawsuit claiming the Mississippi rule violated the First Amendment.

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ MISS. CODE ANN. § 73-13-95 (West 2020).

⁹⁰ Vizaline, 949 F.3d at 929 (citing *Miss. Code § 73-13-95(c)*) (“The practice of surveying means providing professional services such as consultation, investigation, testimony evaluation, expert technical testimony, planning, mapping, assembling and interpreting reliable scientific measurement and information relative to the location, size, shape or physical features of the earth, improvements on the earth, the space above the earth, or any part of the earth, utilization and development of these facts and interpretation into an orderly survey map, plan or report and in particular, the retracement of or the creating of land boundaries and descriptions of real property.”)

⁹¹ Vizaline, L.L.C. v. Tracy, 949 F.3d 927, 929 (5th Cir. 2020).

2. The Fifth Circuit Ends Professional Speech Protection for States

The district court took a similar view to that in *Hines* and promptly dismissed Vizaline’s First Amendment claim.⁹² The district court found that the state, using its broad power to establish licensing standards and oversee professions, regulated “professional conduct which incidentally involves speech.”⁹³ In sum, the district court held that occupational licensing restrictions were categorically exempt from First Amendment scrutiny.

On appeal, the Fifth Circuit disagreed, citing *NIFLA* for the proposition that “occupational-licensing provisions are entitled to no special exception from otherwise-applicable First Amendment protections.”⁹⁴ The Fifth Circuit went on to explain that it and other circuit courts had invoked the “professional speech” doctrine, which addressed any speech by individuals that is based on their expert knowledge and judgment or which occurred within a professional relationship.⁹⁵ These courts had held that a statute that creates occupational licensure standards was not unconstitutional for violating First Amendment rights because it was an incidental effect of a legitimate regulation.⁹⁶

The Fifth Circuit recognized that *NIFLA* replaced the Fifth Circuit’s previous analysis of occupational licensure requirements with a conduct-versus-speech dichotomy.⁹⁷ What this means is that First Amendment challenges do not turn on whether the regulation is occupational licensure, but whether the regulation is directed at conduct, rather than speech, and does not run afoul First Amendment protections.⁹⁸ The court

⁹² *Id.* at 930.

⁹³ *Id.*

⁹⁴ *Id.* at 931.

⁹⁵ *Id.*

⁹⁶ *Vizaline, L.L.C. v. Tracy*, 949 F.3d 927, 931 (5th Cir. 2020).

⁹⁷ *Id.* at 932.

⁹⁸ *Id.*

reversed and remanded the lower court’s decision because there was no First Amendment scrutiny for the Mississippi Board’s licensing requirements.⁹⁹ The Fifth Circuit did not address whether the restrictions violated the First Amendment or what role Mississippi should have in regulating Vizaline’s practice but emphatically put an end to the “professional speech” exception.¹⁰⁰

These cases illustrate that a growing concern of over-regulation by states has led to constitutional challenges of several occupational licensure requirements affecting digital commerce. Whether these challenges will have a lasting effect on occupation licensing overall is yet to be seen. But, with each challenge the same underlying principle issues remain—state regulation to protect entrenched bricks and mortar entities from digital commerce ends with less innovation, reduced access for consumers, higher prices, and the reduction of competition in the regulated industry.

D. Tenn. Wine & Spirits Retailers Ass’n v. Thomas: Occupational Licensure’s Effect on Interstate Commerce

Licensure requirements might also unreasonably burden out of state companies and create conflicts with interstate commerce. Moreover, in the digital economy, a company might sell its products to a number of different states through an online platform, which means a state regulation that favors in-state firms would directly affect online sales. This issue brings to light yet another constitutional question relating to state regulation through occupational licensure.

The Twenty-first Amendment gives each state leeway in choosing alcohol-related public health and safety measures and most states have done so through state regulatory boards. In Tennessee, alcohol is regulated through the Tennessee Alcoholic Beverage Commission (“TABC”). In 2012, the Supreme Court of the United States granted certiorari

⁹⁹ *Id.* at 933.

¹⁰⁰ *Id.* at 934.

to decide if a TABC regulation on alcohol retail violated the Commerce Clause. Much like the First Amendment arguments made in the above cases, state regulation that violates the Commerce Clause causes reductions in competition. The Supreme Court, in *Tenn. Wine & Spirits Retailers Ass’n v. Thomas*,¹⁰¹ held that a TABC two-year residency requirement violated the Commerce Clause because its predominant effect was to protect in-state vendors from out-of-state competition.

1. Tennessee Wine and Spirits Background

Tennessee requires alcohol distribution to flow through a three-tier system.¹⁰² Producers may only sell to licensed wholesalers who may only sell to licensed retailers who are the only group allowed to sell to consumers.¹⁰³ This means that no entity may sell alcohol without a license.¹⁰⁴ The tiered system also contained residency requirement to obtain a license. For any retailer to obtain a license to sell alcohol for home consumption, the retailer must demonstrate that it has been a “bona fide resident” of the state for two years.¹⁰⁵ Moreover, a corporation could not get a retail license unless *all* of its “officers, directors and owners of capital stock satisfy the durational requirements applicable to individuals.”¹⁰⁶

In 2016, two national chain liquor stores, Total Wine and Affluere, applied for a license to retail alcohol in Tennessee.¹⁰⁷ The TABC recommended approval of the application until the Tennessee Wine and Spirits Retailers Association (“Spirits Association”)—an in-state liquor trade association—threatened to sue the TABC if it

¹⁰¹ *Tenn. Wine & Spirits Retailers Ass’n v. Thomas*, 139 S. Ct. 2449 (2019).

¹⁰² *Id.* at 2457.

¹⁰³ *Id.*

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ *Id.* This meant that no publicly traded corporation could operate a liquor store in the state.

¹⁰⁷ *Tenn. Wine & Spirits Retailers Ass’n v. Thomas*, 139 S. Ct. 2449, 2458 (2019).

granted the license.¹⁰⁸ The TABC decided to file a declaratory judgment regarding the constitutionality of the residency requirements.¹⁰⁹ The district court held that the requirements were unconstitutional.¹¹⁰

The Spirits Association appealed to the Sixth Circuit, which affirmed the district court decision. The court split on the 2-year residency requirement. The majority affirmed the lower court's decision using a dormant Commerce Clause argument—the requirement facially discriminated against interstate commerce and the interests the requirement was meant to further could adequately be served by nondiscriminatory alternatives.¹¹¹ The dissent, however, claimed that the Twenty-first Amendment granted states limitless authority to regulate in state alcohol distribution unless it served no purpose besides “economic protectionism.”¹¹² The Spirit Association filed a petition for certiorari regarding the two-year residency requirement, which was granted by the Supreme Court.¹¹³

2. The Supreme Court Strikes Down the Two-Year Residency Requirement

The Supreme Court in a 7-2 opinion held that the two-year restriction was unconstitutional. The majority framed the opinion as a dormant Commerce Clause issue. Under the dormant Commerce Clause, a state law that discriminates against out-of-state goods or economic actors is unconstitutional unless it is “narrowly tailored to advance[e] a legitimate local purpose.”¹¹⁴ The Court found that the two-year residency requirement plainly favored in-state residents and that the Spirit Association did not make a

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ *Id.* at 2459.

¹¹² *Id.*

¹¹³ *Tenn. Wine & Spirits Retailers Ass’n v. Thomas*, 139 S. Ct. 2449, 2459 (2019).

¹¹⁴ *Id.* at 2461.

Commerce Clause argument but instead chose to argue under the Twenty-first Amendment.¹¹⁵

The majority held that if the Twenty-first Amendment were read to take precedence over the Commerce Clause it would lead to an absurd result.¹¹⁶ For example, if the Twenty-first Amendment trumped any previous section of the constitution, a state could enact laws prohibiting the sale of alcohol to a particular race or religion despite the Equal Protection Clause, or prohibit the sale of alcohol to people who express an unpopular point of view despite the First Amendment.¹¹⁷ Instead, the Twenty-first Amendment should be viewed as “one part of a unified constitutional scheme.”¹¹⁸ Moreover, the Court cited *Midcal* as an example of the Twenty-first Amendment’s limits, noting that when state alcohol laws conflict with federal regulation of the export of alcohol, that is deemed unconstitutional.¹¹⁹

Because the residency law directly conflicted with the dormant Commerce Clause, the Court looked to the purpose of the law and whether it had a legitimate interest in furthering the health and safety of citizens consuming alcohol and found that it did not.¹²⁰ When a purpose is “mere speculation” or an “unsupported assertion,” it is not immune from violating the Commerce Clause.¹²¹ The Spirit Association presented no evidence that tied the residency requirement to the protection of public health and safety subjecting the law to Commerce Clause scrutiny.¹²² Because the predominant effect of the residency requirement was to protect the Spirit Association’s members from out-of-state

¹¹⁵ *Id.* at 2462.

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ *Tenn. Wine & Spirits Retailers Ass’n v. Thomas*, 139 S. Ct. 2449, 2469 (2019).

¹²⁰ *Id.* at 2472.

¹²¹ *Id.* at 2474.

¹²² *Id.* at 2475–76.

competition and it lacked a nexus to protecting public health and safety, the Court struck down the requirement.¹²³

Although the Court only made passing reference to antitrust issues this case, it still exemplifies the issues that out-of-state online firms face when trying to enter a market that is regulated by state occupational licensure. Both national liquor retailers at issue in *Tennessee Wine & Spirits* had an online presence that was stifled by the unconstitutional barrier to market entry. And while states have the right to regulate to protect public health and safety, occupational licensing requirements that lack a nexus to that purpose tend to harm consumers and competition.

III. NARROWING OCCUPATIONAL LICENSURE TO PROTECT PUBLIC HEALTH AND SAFETY

Occupational licensure, in its most appropriate form, allows a state to protect the health and safety of its citizens through requirements created by a politically accountable state board. However, a state board run by market participants without state supervision loses political accountability, which often leads to overreaching requirements that in the end harm consumers. As illustrated in the above cases, when state regulations stray from protecting public health and safety it can lead to a flurry of constitutional questions.

In the increasingly digital economy, occupational licensure prevents innovative firms from entering markets under the guise of protecting consumers. *Teladoc*, *Hines*, and *Vizalene* illustrate this principal. Like *Phoebe Putney* and *North Carolina Dental*, these three cases show the expansion of occupational licensure arising from an overly broad delegation of authority to protect public health and safety, which allows incumbents to choose whether new competitors and new technologies can enter a market, unmoored from legitimate health and safety concerns. While new technologies may offer new market options to consumers, they may also have adverse effects on health and safety,

¹²³ *Id.* at 2476.

and, in these instances, occupational licensure may be justified.

However, evaluating new digital offerings in industries already regulated by occupational licensure requires states to re-evaluate the costs and benefits of the requirements. If this re-evaluation does not take place, outmoded restrictions become a barrier to lower cost or more convenient services for consumers and discourage entry for entrepreneurs. Studies have shown that widespread use of occupational licensure in a state has a “significant negative effect on the rate of entrepreneurship.”¹²⁴ The FTC has even created a task force—the FTC Economic Liberty Task Force¹²⁵—to examine these types of licensing issues.

Where might occupational licensure be an appropriate policy response? One example is licensing to help prevent consumer fraud and mitigate the effects of certain types of market failure—“for example, those associated with persistent information asymmetries between professionals and consumers.”¹²⁶ Another appropriate function of occupational licensure is in health care, where consumers assume direct risks if treated by unqualified individuals.¹²⁷ Though this must be balanced against access issues. However, these potential concerns that may be appropriate for occupational licensure are everchanging and require a framework for analysis to maximize the benefits of occupational licensure while limiting the costs.

When analyzing licensure requirements, the FTC encourages policymakers to ask the following questions: Are there significant and non-speculative public policy purposes, such as consumer health and safety, that warrant licensing?¹²⁸ Do the licensing

¹²⁴ See STEPHEN SLIVINSKI, *Bootstraps Tangled in Red Tape: How State Occupational Licensing Hinders Low-Income Entrepreneurship*, in GOLDWATER INSTITUTE POLICY REPORT NO. 272 (2015).

¹²⁵ FED. TRADE COMM’N STAFF, *supra* note 53.

¹²⁶ Federal Trade Commission, Prepared Remarks Before the U.S. House of Representatives: Competition and the Potential Costs and Benefits of Professional Licensure 1 (July 16, 2014).

¹²⁷ *Id.*

¹²⁸ *Id.* at 11.

requirements have a significant adverse effect on competition and consumers?¹²⁹ If so, do the requirements address and alleviate the harm to the public policy purpose?¹³⁰ Are the requirements narrowly tailored to serve the state’s policy concerns without unduly restricting competition and if not are there less restrictive alternatives that would still serve the policy goal with less harm to competition?¹³¹

These questions are especially important when regulated industries are subject to new and disruptive forms of competition. For example, *Teladoc* illustrates a slow response to a new form of competition in health care. Had the TMB asked the above questions when deciding to enact its requirement to see patients in person, it could have come to the same conclusion that the legislature and governor did two years after litigation began. Instead, residents of Texas were forced to comply with a rule created by health care incumbents that did not protect public health and safety, but did increase costs and reduce access to health care. Similarly, in *Hines* it is not apparent that online veterinary advice is a genuine public policy concern nor does the restriction narrowly serve to alleviate the state’s stated policy concerns. Furthermore, in *Vizaline*, the state board is attempting to suppress a new technology from gaining a foothold in the market.

It is important for states to respond to the needs of their residents. These responses may very well include occupational licensure. However, it is a state’s duty to ensure regulation does not harm consumers, reduce competition, or abridge the constitution. States can ensure occupational licensure requirements benefit rather than harm citizens by asking the above questions, especially when new technologies disrupt a market. Occupational licensure that blocks innovation without public health and safety justifications harms both consumers and innovators.

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ *Id.*

IV. OCCUPATIONAL LICENSURE'S GROWING EFFECT ON INTERSTATE COMMERCE IN THE DIGITAL ECONOMY

As seen in the cases discussed above, occupational licensure has a growing effect on interstate commerce. As the digital economy becomes more important in the lives of Americans, state-by-state occupational licensure requirements become even more burdensome on online companies. Although the state action doctrine allows a state to regulate competition within its borders to further a legitimate purpose, it does not give states immunity from the Commerce Clause.

Tennessee Wine and Spirits illustrates a state's inappropriate use of state regulation to burden out-of-state firms to help in-state firms, a situation with clear implications for the growth of the digital economy. For example, although *Vizaline's* occupational licensure issue focused on the First Amendment, it is easy to see how a similar residency requirement could have been put in place to prevent Vizaline from entering the market.

Because the digital economy allows customers to access new products and services at the click of a button, current licensing requirements might be expanded to create barriers for online firms that in turn help in state brick and mortar establishments. *Teladoc* is an example of this very principal. One way for states to avoid violating the Commerce Clause is to narrowly tailor licensure requirements to a legitimate public interest as discussed above. However, states continue to enact broad license requirements that might or might not apply to online services, and they have subjected a wide variety of professions to occupational licensure requirements including florists, interior designers, tour guides, barbers, hair braiders, and even shampoo specialists.¹³² Although some of these professions cannot be performed online, the expanding array of licensure gives a sense of the breadth of a state's resort to occupational licensure, despite highly attenuated links to public health and safety concerns.

¹³² Ohlhausen & Luib, *supra* note 2, at 9.

CONCLUSION

New online technologies or business models should not have to ask their brick and mortar competitors for permission to compete. In a constantly changing digital economy, states must be able to protect the health and safety of their citizens but must do so in a narrowly tailored way that allows for innovation and competition that provide benefits such as improved access, reduced costs, and better quality. Occupational licensure will face increasing scrutiny as the digital economy grows, including antitrust and constitutional challenges. In sum, the purpose of occupational licensure has always been to protect the health and safety of an individual state's citizens, not to protect incumbent firms from competition. These same principals apply with equal, if not greater, force to the digital economy.

Antitrust and Privacy

*James C. Cooper**

INTRODUCTION

It should come as no surprise that the Venn diagram defining the scopes of antitrust and privacy have begun to overlap. Firms that charge nothing for consumers to use their services, but rely on consumer data to generate revenue, are ubiquitous; the cliché, “if you’re not the customer, you’re the product” appears to fit for a large portion of the digital economy. Of course, the collection and use of consumer data has long been the domain of consumer protection. For example, in the U.S., the Federal Trade Commission (FTC) has used its broad authority to police unfair and deceptive acts and practices to go after firms that lie about their data practices or otherwise collect or use consumer data in a way that is harmful. In the EU, the General Data Protection Regulation (GDPR) lays out specific regulations for the processing of consumer data, including robust notice and consent requirements.¹ But given that some of the largest firms in today’s economy are Internet platforms that rely on consumer data, there are increasing calls from both policy makers and the academy to incorporate the collection and use of consumer data into antitrust analysis.

This Chapter discusses the theories behind the call to incorporate privacy into antitrust and identifies some potential legal and economic hurdles to their application. Chief among them are (1) the extent to which privacy is an important dimension of competition; (2) identifying the underlying anticompetitive conduct that gives rise to a reduction in privacy; and (3) understanding that the benefits and costs of data collection

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¹ *European Union General Data Protection Regulation (GDPR)*: Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data, and Repealing Directive 95/46/EC (General Data Protection Regulation), OJ 2016 L 119/1.

are inexorably intertwined, with the net impact of a reduction of privacy on consumer welfare depending on heterogeneous tastes for privacy and customization that are likely to be correlated in complex ways. Further, this Chapter also addresses potential First Amendment issues raised by using antitrust to condemn certain types of data collection and use, as well as problems that may arise to the extent that incorporating privacy into antitrust renders liability standards more uncertain.

I. BACKGROUND

The idea of incorporating privacy into antitrust analysis is not new—nearly 15 years ago, this union was first proposed in the context of the Google-Double Click merger.² Generally, scholars and policy makers have attempted to incorporate privacy into antitrust through two broad channels. First, and most directly, some have argued that antitrust agencies and courts should consider negative impacts on privacy as harms remediable by the antitrust laws.³ The second channel focuses on privacy as a dimension of competition, therefore fitting more comfortably into antitrust law.

At the outset, it is important to define some terms. First, “privacy” is a capacious concept, broadly relating to the ability to control information about oneself and encompassing such notions as isolation from outside stimuli, freedom from observation, autonomy, and anonymity.⁴ For the purposes of this Chapter, “privacy” used as a metric

² See Complaint, In re Google & DoubleClick, Inc., No. 71-0170 (F.T.C. April 20, 2007), http://epic.org/privacy/ftc/google/epic_complaint.pdf.

³ See *infra* notes 7–12 and accompanying text.

⁴ Daniel J. Solove, *Taxonomy of Privacy*, 154 U. PA. L. REV. 477 (2006); Alessandro Aquisti et al., *The Economics of Privacy*, 54 J. ECON. LIT. 442, 443 (2016) (common to most definitions of privacy is that they “pertain to the boundaries between the self and others”); Richard A. Posner, *Economics of Privacy*, 71 AM. ECON. REV. 405, 405 (1981) (privacy concerns “peace and quiet”, “freedom and autonomy”, and “concealment of information.”). See also James C. Cooper, *Separation Anxiety*, 21 VA. J.L. & TECH. 1 (2017) (dividing benefits from privacy into two components: strategic concealment of information to obtain better terms in a commercial relationship; and intrinsic benefits due to preferences for elements of privacy); Teseary Lin, *Valuing Intrinsic and Instrumental Preferences for Privacy* (Aug. 24, 2020) (empirically distinguishing between intrinsic value of privacy and instrumental value of privacy, which derives from concealing one’s type to

measuring quality or price generally will refer to a firm's collection and use of information about a consumer. Second, although this Chapter may touch on some of the same concerns raised in the discussion around "big data and antitrust,"⁵ given the focus on privacy, the analysis here necessarily is centered on data about consumers, as opposed to "data" more broadly. Finally, while privacy regulations can impact competition by limiting the flow of consumer data, that discussion is beyond the scope of this Chapter, which focuses on the role of privacy in antitrust analysis.⁶

A. Privacy as a Direct Goal of Competition Law

Some have argued that because privacy is a fundamental value, antitrust should also consider how unilateral or joint conduct *directly* impacts privacy. For example, in reaction to the Google/DoubleClick merger, a consortium of consumer advocacy groups petitioned the FTC to take direct account of privacy considerations in its review of the transaction.⁷ They asserted that privacy was a "personal and fundamental right in the United States," which is affected adversely by the "collection, use, and dissemination of

obtain better terms), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3406412.

⁵ Allen P. Grunes & Maurice E. Stucke, *No Mistake About It: The Important Role of Antitrust in Big Data*, 14 ANTITRUST SOURCE (2015); Anaj Lambrecht & Catherine E. Tucker, *Can Big Data Protect a Firm From Competition?*, COMPETITION POL'Y INT'L (2017); John M. Yun, *The Role of Big Data in Antitrust*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁶ See, e.g., Jian Jia et al, *The Short Run Effects of GDPR on Technology Venture Investment* (Nat'l Bureau of Econ. Research Working Paper No. 25248, 2019), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3278912; Noah Phillips, Comm'r, Fed. Trade Comm'n, *Should We Block This Merger? Some Thoughts on Converging Antitrust and Privacy*; Prepared Remarks at Stanford Law School (Jan. 30, 2020), 30-20.pdf ; Alex Marthews & Catherine Tucker, *Privacy Policy and Competition*, BROOKINGS (2019), <https://www.brookings.edu/wp-content/uploads/2019/12/ES-12.04.19-Marthews-Tucker.pdf>.

⁷ See Complaint, *In re Google & DoubleClick, Inc.*, No. 71-0170 (F.T.C. April 20, 2007) [hereinafter "Google & DoubleClick Complaint"], http://epic.org/privacy/ftc/google/epic_complaint.pdf. These arguments are akin to those made by some that antitrust investigations involving media companies should consider not only the price that advertisers pay, but also how conduct affects such non-economic goals as "diversity of opinion." See, e.g., Maurice E. Stucke, *Reconsidering Antitrust's Goals*, 55 B.C. L. REV. 551, 617 (2012); Maurice E. Stucke & Alan P. Grunes, *Antitrust and the Marketplace of Ideas*, 69 ANTITRUST L.J. 249 (2001).

personal information.”⁸ After alleging that the transaction “will give one company access to more information about the Internet activities of consumers than any other company in the world,” the groups asked the FTC to prevent the merging of Google’s and DoubleClick’s data, and to impose additional restrictions on data use and collection on the merged companies.⁹

More recent acquisitions by tech platforms have drawn similar petitions from privacy advocates. For example, in a complaint filed with the FTC, two leading privacy advocacy organizations argued the combination of WhatsApp’s and Facebook’s consumer data was both an unfair and deceptive trade practice.¹⁰ Although the parties pressed for the FTC to investigate this combination under its normal consumer protection authority, they also asked the FTC to use its “authority to review mergers” to withhold approval of the transaction “[u]ntil the issues identified in this Complaint are adequately resolved.”¹¹ Likewise, these parties also took the FTC to task for clearing the Google-Nest merger without addressing “the significant privacy concerns” it raised.¹²

There are serious legal hurdles to this approach. The Supreme Court has been clear that antitrust is about fostering competition on “[t]he assumption that competition is the best method of allocating resources in a free market [because it] recognizes that all elements of a bargain—quality, service, safety, and durability—and not just the immediate cost, are favorably affected by the free opportunity to select among alternative

⁸ Google & DoubleClick Complaint, *supra* note 7, at ¶ 7.

⁹ *See id.* at ¶¶ 54, 56-59.

¹⁰ *See* EPIC/CDD Complaint, In re WhatsApp, Inc. (F.T.C. Mar. 6, 2014) at ¶ 1 [hereinafter “EPIC/CDD Compl.”], <https://epic.org/privacy/ftc/whatsapp/WhatsApp-Complaint.pdf>.

¹¹ EPIC/CDD Compl., *supra* note 10, at 14.

¹² *See* EPIC/CDD Supp. Compl., In re WhatsApp, Inc. (F.T.C. Mar. 21, 2014) at ¶ 37, <https://epic.org/privacy/internet/ftc/whatsapp/WhatsApp-Nest-Supp.pdf>.

offers.”¹³ In *National Society of Professional Engineers v. United States* (“NSPE”),¹⁴ for example, a trade group of engineers had adopted an ethics policy prohibiting competitive bidding on the grounds that price competition would lower quality to unacceptable levels. The Supreme Court roundly rejected this as a justification in a rule of reason inquiry, explaining “the inquiry is confined to a consideration of impact on competitive conditions.”¹⁵ If *NSPE* stands for the proposition that the presence of a positive impact in a non-competition dimension does not count on the plus side of the antitrust calculus, it also stands for the dual: negative impacts to a non-competition value will not count against a party in an antitrust inquiry. Thus, absent amendment of the antitrust laws or serious departure from *stare decisis*—which some have urged¹⁶—a plea to use antitrust analysis to condemn otherwise procompetitive or benign conduct that results in lower levels of consumer privacy is unlikely to succeed.¹⁷

B. Privacy as a Dimension of Competition

The second general approach to bringing privacy concerns into the ambit of antitrust law is to treat privacy as a core dimension of competition. This approach rests on the related notions that consumers either “pay” for services with their personal data, or that privacy is a dimension of quality over which firms compete. These premises are

¹³ *Nat’l Soc’y of Prof’l Eng’rs v. United States*, 435 U.S. 679, 695 (1978).

¹⁴ 435 U.S. 679 (1978).

¹⁵ *Id.* at 690.

¹⁶ See Maurice E. Stucke, *Should We Be Concerned About Data-Opolies?*, 2 GEO. L. TECH. REV. 275, 283–85 (2018) (arguing that the Sherman Act was designed to consider broader issues than consumer welfare and should incorporate the harms posed by large tech platform that use data, including privacy). See also *Associated Press v. United States*, 326 U.S. 1, 19–20 (1945) (suggesting that antitrust should consider how competition in media markets affects diversity of viewpoints).

¹⁷ The EU appears to similarly cabin consideration of privacy impacts in competition law. See Samson Y. Esayas, *Privacy-as-a-Quality Parameter: Some Reflections on the Skepticism*, Stockholm Univ. Research Paper No. 43 at 3–4 (2017) (citing Case C-238/05 *Asnef-Equifax v. Association de Usuarious* [2006] ECR I-11125, para 63; Case M 7217 *Facebook/WhatsApp* (2014)), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3075239#.

used interchangeably, and for antitrust purposes they are essentially equivalent: under either approach, more intrusive levels of personal data collection and use result in consumers paying a higher privacy-adjusted price (PAP). For example, one can define the PAP of a product as the nominal price divided by some metric of privacy protection. Holding the nominal price constant, lower levels of privacy protection increase the PAP (by reducing the denominator). Equivalently, privacy could be incorporated directly into the numerator price, with more intrusive data collection representing a higher “price” paid by consumers and non-privacy elements of quality held constant.

Identifying privacy as a key dimension of competition appears to be born out of the search for a metric by which to judge the consumer welfare effects of potential market power enjoyed by large online platforms.¹⁸ Accordingly, dominant digital platforms exercise market power not by charging a higher price—most offer their services for free—but by offering consumers lower levels of privacy than they would receive in a competitive market.¹⁹ For instance, a recent report by the UK’s Competition Market Authority (CMA) concludes:

In a more competitive market, we would expect that it would be clear to consumers what data is collected about them and how it is used, and crucially, the consumer would have more control. We would then expect platforms to compete with one another to persuade consumers of the benefits of sharing their data or adopt different business models for more privacy conscious consumers. Platforms may reward consumers for their data through their products and services, perhaps serving fewer ads or offering rewards or additional services.²⁰

¹⁸ See Stucke, *supra* note 16, at 284 (“The currency for online platforms is in many cases, data.”); John M. Newman, *Antitrust in Zero Price Markets: Foundations*, 164 U. PA. L. REV. 149, 166 (consumer information is “surrendered (i.e., paid) by customers in exchange for the object sought”); *Id.* at 167 (“customers frequently surrender information as payment in exchange” for online platform services).

¹⁹ See, e.g., Stucke, *supra* note 16, at 287 (“[T]he collection of too much data can be seen as the equivalent of charging an excessive price.”); Howard A. Shelanski, *Information, Innovation, and Competition Policy for the Internet*, 161 U. PA. L. REV. 1663, 1689 (“One measure of a platform’s market power is the extent to which it can [use information in ways that benefit the firm but that consumers do not like] without some benefit to consumers that offsets their reduced privacy and still retain users.”).

²⁰ U.K. COMPETITION MARKET AUTHORITY, *ONLINE PLATFORMS AND DIGITAL ADVERTISING* ¶6.26 (2020) (hereinafter “CMA Report”); See also *id.* at ¶¶ 6.31-6.32 (“We would expect that platforms, notably social networks, that faced a competitive constraint would not be able to rely on ‘take-it-or-leave-it’ terms that

Although they have yet to block a merger or challenge conduct based on privacy considerations, antitrust agencies in both the U.S. and EU appear to have recognized the role that privacy might play in a competition analysis. For example, the FTC cleared the Google/DoubleClick merger based on traditional antitrust considerations of price impacts on advertisers and publishers, but nonetheless considered how the merger might impact consumer privacy.²¹ Likewise, the EU explicitly took privacy into account when evaluating the Microsoft/LinkedIn merger, noting for example that privacy in personal social networks “is an important parameter of competition.”²² It also examined how Facebook’s acquisition of WhatsApp might impact privacy in the market for mobile consumer communications apps.²³

Some scholars have suggested that a lack of competition on privacy could facilitate strategic foreclosure arising from indirect network effects.²⁴ Under this theory of harm, a lack of competition over privacy imposes a short-run harm on consumers for the reasons discussed above, but also has a longer-term impact because lower levels of privacy allow

mean consumers have to share their data to use the service, and have no real option to leave the service because their family and friends use it. Moreover, in a more competitive market, we would expect platforms to innovate and develop new ways to deliver advertising that meets the targeting needs of advertisers using less consumer data, thus protecting consumer privacy to a greater extent.”).

²¹ See *Statement of the Federal Trade Commission Concerning Google/DoubleClick*, Fed. Trade Comm’n 2-3 (Dec. 20, 2007) (“we investigated the possibility that this transaction could adversely affect non-price attributes of competition, such as consumer privacy. We have concluded that the evidence does not support a conclusion that it would do so. We have therefore concluded that privacy considerations, as such, do not provide a basis to challenge this transaction.”). The Horizontal Merger Guidelines explicitly allow for the consideration of non-price elements of competition such as quality:

Enhanced market power can also be manifested in non-price terms and conditions that adversely affect customers, including reduced product quality, reduced product variety, reduced service, or diminished innovation. Dep’t of Justice & Fed. Trade Comm’n, *Horizontal Merger Guidelines* at 2 (2010).

²² See Commission decision of 6 December 2016, Case M.8124 – *Microsoft/LinkedIn* at ¶ 350 & n.330.

²³ See Commission decision of 3 October 2014, Case M.7212 – *Facebook/WhatsApp* at ¶ 87 (noting that privacy was an important area of functionality over which consumers choose messaging apps); see also *id.* at ¶ 102 (evaluating how closely the parties compete over privacy).

²⁴ See Stucke, *supra* note 16, at 282; Grunes & Stucke, *supra* note 5, at 3; Newman, *supra* note 18, at 166.

the dominant firm to entrench its position by collecting increasing amounts of consumer data. Greater access to consumer data, so the argument goes, allows the dominant firm to gain an advantage over potential rivals due to the ability to, for example, hone machine learning algorithms.²⁵ What is more, according to this argument, there are “feedback effects:” increasing amounts of consumer data allows the platform to increase its dominant position on both the consumer and advertising side of the platform, permitting it to further impose weak privacy protections on consumers, thus increasing its access to consumer data, and so on.

The recent Bundeskartellamt’s (BKA) case against Facebook is perhaps the best real-world example of this approach.²⁶ The BKA found that Facebook enjoys market dominance due to strong direct network effects (Facebook has the largest number of registered and active users among other network platforms) and the difficulties associated with switching to another social media account (“lock-in” effect).²⁷ This dominance allegedly allows Facebook to condition access to Facebook’s social network on the user’s agreement to Facebook’s terms of service, which stipulate that Facebook collects and processes user data through not only Facebook’s companies, but also through third-party websites with embedded Facebook Business Tools.²⁸ But such conditioning violates the GDPR because (1) there is no effective consent on the user’s side (due to Facebook’s dominance),²⁹ and (2) it is not necessary for Facebook to process data from

²⁵ See, e.g., Shelanski, *supra* note 19, at 1681 (discussing consumer information as a strategic asset).

²⁶ See *Bundeskartellamt Initiates Proceeding Against Facebook on Suspicion of Having Abused its Market Power by Infringing Data Protection Rules*, BUNDESKARTELLAMT (Mar. 2, 2016), https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2016/02_03_2016_Facebook.html

²⁷ Bundeskartellamt 6th Decision Division, decision of 6 February 2019, ref. B6-22/16 – *Facebook*, para. 374-387.

²⁸ Bundeskartellamt 6th Decision Division, decision of 6 February 2019, ref. B6-22/16 – *Facebook*, para. 88.

²⁹ “[I]n view of Facebook’s dominant position in the market, users consent to Facebook’s terms and conditions for the sole purpose of concluding the contract, which cannot be assessed as their free consent within the meaning of the GDPR.” *Facebook, Exploitative Business Terms Pursuan to Section 19(1) GWB for Inadequate Data Processing*, Bundeskartellamt, at 10. (Feb. 15, 2019) (Summarizing the BKA’s decision in its

third-party sources to the current extent.³⁰ The GDPR violation, in turn, “is a manifestation of Facebook’s market power.”³¹ In particular, Facebook’s data practices “impede[] competitors because Facebook gains access to a large number of further sources,” which provide it a “competitive edge . . . and increased market entry barriers, which in turn secures Facebook’s market power toward end customers.”³² Thus, according to the BKA, market dominance allowed Facebook to impose onerous privacy terms on consumers, allowing it to collect more data from its users. What is more, the BKA contends that the increased access to consumer data improves Facebook’s ability to customize content and target advertisements, further entrenching its dominance.³³

* * *

Although competition agencies or judges are unlikely to treat consumer privacy as a direct goal of antitrust absent substantial changes to existing law, the notion that lack of competition can become manifest in suboptimal levels of privacy has intuitive appeal and deserves more serious consideration. In the next section, we consider some of the legal and economic complexities attendant to such an approach.

II. CONSIDERATIONS

Viewing privacy as a dimension of non-price competition has the advantage of

data processing case against Facebook, B6-22/16 – Facebook), https://www.bundeskartellamt.de/SharedDocs/Entscheidung/EN/Fallberichte/Missbrauchsaufsicht/2019/B6-22-16.pdf?__blob=publicationFile&v=3.

³⁰ *Id.* (“It cannot be substantiated that the service has to process data to the extent that has been determined the course of the examination for reasons of efficiency and advantages of a personalized service.”).

³¹ *Id.* at 11. The BKA notes that “it is sufficient to determine that [the GDPR violation and market dominance] are linked by causality which is either based on normative aspects or outcome.” *Id.* “Normative causality” is satisfied because Facebook’s dominant position “is clearly linked” to consumers restricted right of “self-determination.” *Id.* “Outcome causality” is satisfied through indirect network effects, through which increased access to data provide Facebook a “competitive advantage” and erect entry barriers. *Id.*

³² *Id.* at 11.

³³ *Id.*

nesting it squarely within the bounds of antitrust law. Nonetheless, the analogy between privacy and quality is not perfect, and problems arise when the comparison is stretched too far. Below we identify some complications that arise when privacy harms are viewed through a competition law lens.

A. Competitive Significance

Treating privacy as a metric of the competitiveness of a market rests on the assumption that consumers provide information about themselves in exchange for access to services provided by digital platforms. Although valuations for privacy vary across the population, all else equal, it is probably reasonable to assume that consumers will prefer more privacy to less.³⁴ Consumer willingness to switch products in response to higher levels of privacy, however, is a necessary predicate to any attempt to treat privacy as a dimension of non-price competition addressable by competition law.³⁵ If, however, consumer demand is generally unresponsive to changes in privacy, the upper bound on consumer harm that could arise from less competition over privacy is likely to be small—even if joint or unilateral conduct results in a platform (or combination of platforms) offering a lower level of privacy, it is unlikely to result in much welfare loss as output effects are likely to be negligible.³⁶ In this case, privacy is probably not a dimension of competition that demands a large degree of antitrust attention by courts or agencies.

Empirically, the significance of privacy to consumers' marketplace choices is, at best, uncertain. In what has come to be known as the "privacy paradox," consumers

³⁴ Ginger Zhe Jin & Andrew Stivers, *Protecting Consumers in Privacy and Data Security: A Perspective of Information Economics*, (draft at 2) (2017). As discussed in Section 2.C, *infra*, if other dimensions are not held constant, competitive effects are not as clear cut.

³⁵ See Shelanski, *supra* note 19, 1691 ("[if] competition promotes improved services and privacy policies, anticompetitive conduct diminishes both of these consumer benefits.")

³⁶ See Terrell McSweeney, *Roundtable: Discussing the Big Picture on Big Data*, ANTITRUST SOURCE (Dec. 2018) ("It just can't be assumed that competition on privacy is actually occurring. There must be some evidence of it. . . You can't create competition and privacy features and services where none exist, even if you think it would be good to have it . . .").

profess to care deeply about privacy in surveys, but revealed preference—data from actual choices—suggests otherwise.³⁷ For example, a recent Pew poll finds that 79 percent of consumers are “very” or “somewhat” concerned about how companies use their data, and 81 percent say that the privacy risks associated with companies’ data collection outweigh the benefits.³⁸ At the same time, empirical research finds that only a tiny percentage of consumers actually choose to opt out from online tracking,³⁹ and in a survey of the economics of privacy, Acquisti, Wagman, and Taylor conclude, “If anything, the adoption of privacy-enhancing technologies (for instance, Tor, an application for browsing the Internet anonymously) lags vastly behind the adoption of sharing technologies (for instance, online social networks such as Facebook).”⁴⁰ Experimental research, moreover, generally finds that consumers are only willing to pay a small amount to avoid surveillance.⁴¹ Additionally, there is little evidence to suggest that marketing campaigns promoting privacy-protective search and email platforms have engendered much of a consumer response.⁴²

It is unclear what drives the privacy paradox. It simply may be that when faced

³⁷ See CMA Report, *supra* note 20, at ¶4.47 (“in surveys, consumers will report that they are very concerned about their privacy but they then behave in a way that contradicts this clearly stated preference by, e.g., not taking advantage of privacy controls that are available to them.”); Acquisti et al., *supra* note 4 at 476. Experiments have attempted to see if education will reduce the gap between revealed preference and stated preference and have found no impact. See, e.g., Lior Strahilevitz & Matthew B. Kugler, *Is Privacy Policy Language Irrelevant to Consumers?*, 45 J. LEGAL STUD. 69 (2016)).

³⁸ Pew, *Americans and Privacy: Concerned, Confused, and Feeling a Lack of Control over Personal Information* (Nov. 15, 2019), at file:///Users/JamesCooper/Downloads/Pew-Research-Center_PI_2019.11.15_Privacy_FINAL.pdf

³⁹ Garrett A. Johnson et al., *Consumer Privacy Choice in Online Advertising: Who Opts Out and at What Cost to Industry?*, 39 MKTG. SCI. 33, 40 (2020) (finding that .23% of display advertising impressions are served to consumers who have opted out of online tracking through the AdChoices program).

⁴⁰ Acquisti et al., *supra* note 4, at 476.

⁴¹ See *id.* at 479; Athey et al., *The Digital Privacy Paradox: Small Money, Small Costs, Small Talk*, (Nat’l Bureau Econ Research Paper 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2916489.

⁴² See Marthews & Tucker, *supra* note 6, at 5–6. See also *Is Microsoft’s Scroogled Campaign Working? Not if Gaining Consumers is the Goal*, MARKETING LAND (Oct. 16, 2013), <https://marketingland.com/microsoft-scroogled-campaign-61887>.

with an actual opportunity cost for privacy, consumers choose to consume less privacy than they say they will in surveys. At the same time, many have observed that due to its complexity, markets for privacy are unlikely to function well, casting doubt on whether revealed preference actually expresses consumer preferences given the difficulty for consumers to make informed tradeoffs.⁴³ Whether the gap between stated and revealed preference is driven by rational choice, asymmetric information, or behavioral biases, however, is irrelevant to whether privacy should be considered as a relevant metric of non-price competition.⁴⁴ Clearly, if fully informed and rational consumers choose not to alter their behavior in response to changes in privacy, then there appears to be little role for antitrust in examining firms' privacy choices. If, on the other hand, the lack of consumer response to privacy is due to firms' inability to credibly convey information about their privacy policies—perhaps because it is simply too costly for consumers to evaluate privacy promises—then no amount of competition will improve market outcomes.

Joe Farrell illustrates this point in a simple model of a firm with market power choosing the profit maximizing level of privacy.⁴⁵ He shows that when consumers perfectly understand the level of privacy chosen by the firm, consumer and firm interests are aligned because the firm internalizes any privacy harm its data policies visit on consumers. For example, if a firm reduces privacy protections to increase revenue streams (for example, by allowing third party ad networks to place cookies on visitors' browsers in order to target ads)—consumer demand will fall by an amount equal to the privacy harm this new revenue stream causes. As a result, the firm will reduce its privacy

⁴³ See Acquisiti et al., *supra* note 4, at 477-78; CMA Report, *supra* note 20, at ¶¶4.49-4.56.

⁴⁴ See Marthews & Tucker, *supra* note 6, at 6 ("If consumers do not make choices which accord with their stated privacy preferences and instead choose small convenience benefits or monetary benefits over privacy, then a firm that offers superior privacy protections is unlikely to attract many consumers by virtue of its superior privacy protections.").

⁴⁵ See Joseph Farrell, *Can Privacy Be Just Another Good?*, 10 J. TELECOM & HIGH TECH L. 251 (2012).

protections only if the revenue stream from increased consumer information is greater than the privacy harm, which is efficient: firm profits are increased while consumers enjoy lower prices (or richer features) due to the increased revenue, both of which lead to an increase in total welfare.⁴⁶

When consumers are unable to evaluate firms' privacy choices, however, firms rationally may adopt net harmful privacy practices because they assume that they can hide the costs from consumers—that is, firms will enjoy the additional revenue streams from consumer data without paying the concomitant price of lower demand from privacy-sensitive consumers. What is more, unless firms are able to provide observable privacy policies—in the sense that consumers readily can comprehend the promises that are being made with regard to the collection and use of their data—and credibly commit to following them, consumers rationally will come to expect that firms always will adopt harmful data practices regardless of what firms profess. In this textbook “lemons” equilibrium, firms that would adopt more stringent privacy practices if they could convince consumers to believe them, will not do so because they will not be rewarded by consumers.⁴⁷

The above suggests that a consumer protection regulation that holds firms to their privacy promises or that imposes some baseline level of privacy may improve market outcomes by helping foster an environment in which firms fully internalize their privacy decisions. But it is important to note that steep informational costs, not lack of competition, is what makes obscuring potentially unpopular data practices in dense privacy policies or through the use of “dark patterns,” and renegeing on privacy promises the dominant strategy. Thus, if the root of any failure of markets to meet consumers'

⁴⁶ See *id.* at 255. Farrell models the revenue stream from increased access to consumer information as an equivalent reduction in marginal cost. If the marginal cost falls more than the value that consumers place on the product (due to reduced privacy), prices fall and output increases on net, increasing welfare.

⁴⁷ *Id.* 257.

privacy preference is informational, increased antitrust scrutiny is likely to be an ineffective remedy.

B. Identifying the Underlying Anticompetitive Conduct

If privacy is to serve as a metric of competition, then there must be some causal link between diminished privacy and anticompetitive conduct. Stated differently, the lack of privacy must be the (or a) mechanism through which the illegal creation or maintenance of monopoly power becomes manifest to consumers. Absent some underlying anticompetitive conduct driving the reduction in privacy, there would be no distinction between antitrust and direct privacy regulation. For example, although Google's acquisition of Nest presented no competition concerns and was quickly cleared,⁴⁸ some contended that this transaction should be blocked solely because it raised privacy concerns by allowing Google to merge its troves of consumer data with that generated by Nest's smart thermostat in ways contrary to consumer expectations.⁴⁹ But any privacy concerns arising from this transaction were completely divorced from the competitive effects of the merger. That is, simply because a reduction in privacy arises in the context of a merger (or other horizontal or vertical arrangement), does not convert a pure consumer protection issue into an antitrust problem.

Below, we examine how joint and unilateral conduct might give rise to an antitrust claim based on reduced privacy competition.

⁴⁸ Fed. Trade Comm'n, *Early Termination Notices, 200140457: Nest Labs, Inc., and Google, Inc.*, (Feb. 4, 2014), <http://www.ftc.gov/enforcement/premerger-notification-program/early-termination-notices/20140457>.

⁴⁹ Electronic Privacy Info. Ctr., Letter to the Fed. Trade Comm'n (Feb. 20, 2019), <https://epic.org/privacy/ftc/google/EPIC-FTC-Nest-Google.pdf>.

1. Horizontal Conduct

Mergers may be the easiest case to conceptualize conduct that reduces competition over privacy.⁵⁰ Indeed, to date, the agencies have only ever publicly considered privacy as a dimension of competition in the context of mergers; as discussed above, the FTC examined privacy competition in the context of the Google/DoubleClick merger, and DG Comp explicitly considered how the Facebook/WhatsApp and LinkedIn/Microsoft transactions would impact competition over privacy.⁵¹

As a threshold matter, the parties must be competitors in a product space to trigger any privacy concerns based on competition. This is because, in order for the privacy harm to trigger antitrust scrutiny, it must flow from a reduction in competition between the firms over privacy. If the consumers do not view the merging parties' products as close substitutes, they simply do not compete in any dimension.⁵²

Although the competition agencies have yet to block a transaction based on its potential impact on privacy, there is nothing to suggest from the decisions that, given the appropriate facts—perhaps documents and data suggesting that consumers view privacy as one of the most important dimensions of competition between the parties and that the

⁵⁰ See Shannon Liao, *Ireland is Questioning Facebook's Plan to Merge Messenger, Instagram, and WhatsApp*, VERGE. (Quoting Rep. Ro Khanna (D-CA)) ("Imagine how different the world would be if Facebook had to compete with Instagram and WhatsApp. That would have encouraged real competition that would have promoted privacy and benefited consumers."); Maurice E. Stucke & Allen P. Grunes, *Debunking the Myths Over Big Data and Antitrust*, CPI ANTITRUST CHRONICLE 5, (2015) ("Data-driven mergers, like Facebook's acquisition of WhatsApp, for example, can potentially lessen non-price competition in terms of the array of privacy protections offered to consumers.").

⁵¹ See Statement Fed. Trade Comm'n Concerning Google/Double Click, FTC File no. 071-0170 (Dec. 20, 2007); Commission decision of 3 October 2014, Case M.7212 – *Facebook/WhatsApp*; Commission decision of 6 December 2016, Case M.8124 – *Microsoft/LinkedIn*.

⁵² It could also be possible that in a vertical merger the parties would not be direct competitors, but upstream or downstream foreclosure effects from the merger could limit competition over privacy between one of the parties to the merger and non-merging parties who compete in the relevant market. Importantly, any impact on privacy must flow from an impact on competition to trigger antitrust concerns.

parties were close substitutes for consumers along this dimension—they would not be willing to block a transaction.⁵³

Horizontal agreements to restrict competition on privacy additionally could run afoul of the antitrust laws under the same theory that would condemn a merger that reduces competition over privacy. It is black-letter law that a naked agreement among competitors to limit any dimension of competition is condemned *per se*.⁵⁴ Thus, evidence of an agreement among competitors to limit—or increase—privacy could be condemned as a *per se* violation of Section 1 of the Sherman Act.⁵⁵ Similarly, an agreement over privacy that was reasonably ancillary to some sort of legitimate horizontal collaboration would be analyzed under the rule of reason.⁵⁶ For example, a joint venture between two streaming services to create a bundled offer that also includes an agreement between the firms on the collection and use of consumer data could be condemned if detrimental consumer impacts flowing from any reduction in competition over privacy was not outweighed by countervailing benefits.⁵⁷

2. Unilateral Conduct

Identifying a plausible unilateral antitrust theory of privacy harm is more challenging. First, it is a bedrock principle of U.S. antitrust law that merely charging a

⁵³ See Barry Nigro, *Roundtable: Discussing the Big Picture on Big Data*, ANTITRUST SOURCE 18 (Dec. 2018) (“If there isn’t relatively strong evidence in the documents and the testimony that it’s an issue, you’re likely not going to see a case. The question is whether there’s evidence that it’s a meaningful dimension of competition between the firms, whether, as a result, they’re closer competitors than the other firms in the market and the competitive significance of it. I don’t think there are likely to be many cases like that, but who knows?”).

⁵⁴ *Palmer v. BRG of Ga., Inc.*, 498 U.S. 46 (1990).

⁵⁵ See *Nat’l Soc’y of Prof’l Eng’rs v. United States*, 435 U.S. 679, 695-96 (1978) (the reasonableness of the object of an illegal agreement among competitors is not a defense in an antitrust case). See also Thomas Krattenmaker, *Per Se Violations in Antitrust: Confusing Offense with Defense*, 77 GEO. L.J. 165 (1988).

⁵⁶ See *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.*, 441 U.S. 1 (1979); see also *California Dental Assn. v. FTC*, 526 U.S. 756 (1999).

⁵⁷ Note, that this was also the case for mergers.

high price, or otherwise exercising lawfully acquired monopoly power is not actionable.⁵⁸ Courts have had a longstanding aversion to becoming price regulators under the auspices of the Sherman Act, which springs from two sources. First, is the fear of discouraging firms from the type of innovative behavior that benefits consumers. As the Court explained in *Trinko*:

the opportunity to charge monopoly prices—at least for a short period—is what attracts “business acumen” in the first place; it induces risk taking that produces innovation and economic growth. To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive conduct.⁵⁹

The second reason courts do not involve themselves in micromanaging monopolists’ pricing and quality decisions is administrability. Such an endeavor threatens to turn federal courts into utility regulators, a job for which generalist judges are ill-equipped.⁶⁰

The upshot of the judicial reluctance to pass judgment on monopolists’ unilaterally determined price and quality levels is that one must be able to identify some type of anticompetitive conduct that *caused* a reduction in privacy for it to be actionable under the antitrust laws. That is, one must be able to point to conduct by a dominant firm that amounts to “the willful acquisition or maintenance of monopoly power as distinguished from growth or development as a consequence of a superior product, business acumen, or historical accident.”⁶¹ To qualify as exclusionary under Section 2, conduct must “harm the competitive process and thereby harm consumers,” and also have “the requisite

⁵⁸ See *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004) (“The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system.”).

⁵⁹ *Trinko*, 540 U.S. 398 at 407.

⁶⁰ See *id.* at 415 (explaining that one reason antitrust generally eschews forced sharing is “because an antitrust court is unlikely to be an effective day-to-day enforcer of these detailed sharing obligations.”). See generally Michael R. Baye & Joshua D. Wright, *Is Antitrust too Complicated for Generalist Judges?*, 54 J. L. & Econ. 1 (2011).

⁶¹ *United States v. Grinnell Corp.*, 384 U.S. 563, 571 (1966).

anticompetitive effect.”⁶² These longstanding limitations on monopolization actions would appear to foreclose monopolization theories that rest only on a dominant platform illegally exercising monopoly power by collecting “too much data,” advanced by some commentators.⁶³ The data practices of a dominant platform simply are of no moment to the antitrust laws unless they bespeak some type of conduct that harmed the competitive process.

If a monopolization claim cannot be predicated on data practices alone, one must be able to point to some type of unilateral conduct that limited competition over privacy. While exclusionary theories are myriad,⁶⁴ that a firm could acquire or maintain monopoly power by lying about its policies regarding the collection and use of consumer data is the one most germane to the current discussion. For instance, in a recent paper, Dina Srinivasan argues that competition from social media platforms, such as MySpace, Friendster, and Orkut, initially tempered Facebook’s ability to degrade user privacy.⁶⁵ Once these threats were gone, according to Professor Srinivasan, Facebook was able to increase its collection and use of consumer data without fear of losing market share. Of course, this exercise of market power alone would be an insufficient basis for an antitrust action, but Professor Srinivasan contends that Facebook’s promises regarding consumer

⁶² U.S. v. Microsoft, 253 F.3d 34, 58-59 (2001).

⁶³ For example, although Stucke does not point to conduct by digital platforms, he suggests that harms related to data collection—“looking beyond the ‘free’ price”—lead to the identification of several “significant potential antitrust harms.” Stucke, *supra* note 16, at 284–85. See also *id.* at 287 (arguing that “the collection of too much data can be the equivalent of charging and excessive price”); *id.* at 286 (“A data-oploist . . . has the incentive to reduce its privacy protections below competitive levels and collect personal data above competitive levels.”); *id.* at 294 (“the personal data collected may be worth far more than the cost of providing the ‘free’ service”).

⁶⁴ See, e.g., C. Scott Hemphill & Tim Wu, *Nascent Competitors*, __ PENN. L. REV. __ (forthcoming 2020) (discussing the use of Sherman Section 2 against dominant platforms’ acquisitions of potential competitors).

⁶⁵ Dina Srinivasan, *The Antitrust Case Against Facebook: A Monopolist’s Journey Towards Pervasive Surveillance in Sprite of Consumers’ Preference for Privacy*, 16 BERKELEY BUS. L.J. 39, 44–45 (2019) (the competitive market “enjoined Facebook’s ability to initiate commercial surveillance,” while “the exit of competitors [allowed Facebook] to add the condition of surveillance to its mandatory terms.”).

privacy—on which it ultimately reneged—facilitated its rise to dominance by attracting privacy conscious consumers, and thus form the predicate act required to make out a monopolization claim.⁶⁶

As a threshold matter, it is important to distinguish between the direct harm attributable to competitors and consumers from deception, and the indirect impact on consumers due to any market power effects of deception. For example, when a dominant company lies about the beneficial attributes of its product, or disparages its competitors' products, consumers who shift their sales from rival firms due to the deception clearly are harmed.⁶⁷ Further, rival firms lose revenue to the dominant firm from fooled consumers.⁶⁸ But neither of these outcomes are *anticompetitive* effects of deception, they are welfare losses due to informational problems. To trigger the antitrust laws, the shift in consumer purchasing patterns caused by the deception would have to durably limit the competitive pressure faced by the dominant firm, either creating or maintaining its ability to raise price, reduce output, or, in the present context, reduce privacy.⁶⁹

⁶⁶ *Id.* at 90 ("Facebook's course of misleading conduct resulted in precisely the type of harm that antitrust law concerns itself with—the exit of rivals and the subsequent extraction of monopoly rents in contravention to consumer welfare.").

⁶⁷ The consumer harm is the difference between the price and the marginal value the fooled consumers would place on the dominant firm's product absent the deception. See James C. Cooper & Bruce Kobayashi, *Equitable Monetary Relief Under the FTC Act: Room for a Marginal Improvement*, __ ANTITRUST L.J. __ (forthcoming 2020).

⁶⁸ It is important to note that consumer and firm harm are not distinct. They are merely different ways of measuring the same harm. Consumer protection actions would recover revenue consumers spent on the fraudulent product, while a Lanham Act action would recover the portion of the revenue spent on the defendant's fraudulent product that was diverted from the plaintiff's firm.

⁶⁹ More formally, deception benefits the defrauding firm by shifting its demand curve out, increasing revenue through increased output and, if the firm enjoys market power, higher prices. Much of this increased revenue will be due to consumers diverted from their preferred firm, although the deception may have caused new consumers to enter the market. Anticompetitive effects would occur only if the deception ultimately limited the rival firms' ability to constrain the dominant firm's pricing. This effect would manifest in a lower price elasticity of demand, allowing the dominant firm to charge a higher price (or offer a lower level of quality) for any given level of demand, resulting in lower market wide output, not merely lower output for rival firms.

Courts generally have been hesitant to allow antitrust claims to proceed on theories of deception.⁷⁰ As the leading antitrust treatise explains, “The key problem here is the difficulty of assessing the connection between any improper representations and the speaker’s monopoly power.”⁷¹ Further, there are other laws that address the direct welfare consequences of deception: business torts and consumer protection laws.⁷² Consumers can sue firms for deception under the common law and state consumer protection acts,⁷³ and businesses can sue deceiving firms from whom they have lost business under the Lanham Act and state business tort laws.⁷⁴ Further, both the state attorneys general and the FTC have consumer protection jurisdiction to police against unfair and deceptive acts and practices.⁷⁵ As the Supreme Court explained in *Trinko*, when there is another regulatory regime aimed directly at the ill alleged to violate the antitrust laws, the “additional benefit to competition provided by antitrust enforcement will tend to be small, and it will be less plausible that the antitrust laws contemplate such additional scrutiny.”⁷⁶

Of the few instances in which courts have allowed deception to form the basis for a Section 2 claim, many concern lies to bodies—either governmental or private—that

⁷⁰ See AREEDA & HOVENKAMP, ANTITRUST LAW ¶782b (4th ed. 2020).

⁷¹ *Id.* Areeda & Hovenkamp suggest that courts consider deception as presumptively de minimus, but suggest defendants could overcome this presumption with evidence the representations (1) were clearly false (2) clearly material, (3) clearly likely to induce reasonable reliance, (4) made to buyers without knowledge of the subject matter, (5) continued for prolonged periods, and (6) not readily susceptible of neutralization or other offset by rivals. *Id.*

⁷² See Hillary Greene & Dennis A. Yao, *Antitrust as Speech Control*, 60 WM. & MARY L. REV. 1215, 1244 (2019) (“The existence of [the Lanham Act, the FTC Act, and related state consumer protection statutes] may partially explain the reluctance of the courts to recognize disparagement as an independent antitrust claim.”). See AREEDA & HOVENKAMP *supra* note 70.

⁷³ See AREEDA & HOVENKAMP, *supra* note 70.

⁷⁴ See *id.*

⁷⁵ 15 U.S.C. § 45(a)(1) (2018).

⁷⁶ *Trinko*, 540 U.S. 398 at 412.

enjoyed the power to exclude competitors. For example, *Broadcom Corp. v. Qualcomm Inc.*⁷⁷ and *Allied Tube & Conduit Corp. v. Indian Head, Inc.*,⁷⁸ concerned deceiving private standard setting bodies, and *Walker Process Equip. Corp. v. Food Mach. & Chem. Corp.*,⁷⁹ involved fraud in a patent application. Further, the FTC's case against Intel involved, among many other allegations, Intel's failure to disclose that its compiler software would slow down programs run on competitors' chips.⁸⁰ Thus, the lie was not about the difference in performance between Intel and competitors' chips—the performance differences were true. Instead, Intel was concealing the fact that its compiler, not competitors' underlying chip technology, had caused the performance differences. Similarly, the deception-related conduct in *Microsoft* involved Microsoft fooling software developers into writing programs that would work only on the Windows operating system.⁸¹ Again, Microsoft had not lied to consumers about the interoperability of software—the lack of interoperability was a fact—but rather it tricked developers into creating the lack of interoperability. Because the deception involved concealing the *cause* of an *actual* degradation of a competing product, the scenarios in *Intel* and *Microsoft* are more likely to have direct and durable impacts on competition than ones in which a firm merely lies to consumers about the relative attributes of its products.⁸²

⁷⁷ 501 F.3d 303 (3d Cir. 2007).

⁷⁸ 486 U.S. 492, 499 (1988).

⁷⁹ 382 U.S. 172 (1965). The FTC also brought antitrust actions against pharmaceutical companies for lying the FDA about patents that covered their drugs, which triggered a regulatory barrier to generic entry. See e.g., Decision and Order, In re Bristol-Meyers Squibb Co., F.T.C. No. C-4076 (Apr. 14, 2003), <https://www.ftc.gov/sites/default/files/documents/cases/2003/04/bristolmyerssquibbdo.pdf>

⁸⁰ Complaint, In re Intel, FTC Case no. 9341, at ¶¶ 58-67. Notably, the FTC complaint also charged that this conduct was an unfair and deceptive act or practice under the FTC's consumer protection jurisdiction and constituted an unfair method of competition under the FTC's antitrust jurisdiction, which is broader than Section 2.

⁸¹ *United States v. Microsoft, Corp.*, 253 F.3d 34, 76-77 (D.C. Cir. 2001).

⁸² In addition, deception played relatively small roles in the overall exclusionary conduct at issues in *Intel* and *Microsoft*.

All told, a Sherman Act § 2 claim that deception involving privacy policies helped to create or maintain a firm's dominance would appear to be limited to quite narrow circumstances. The core problem lies with causation: a plaintiff pursuing such a theory would have to show that the lies about privacy were "reasonably capable of making a significant contribution" to the firm's monopoly power.⁸³ That is, there must be evidence linking the deception to the accretion or maintenance of monopoly power that is exercised through a reduction in privacy, not merely the direct impact of deception on a firm's market share or price. For example, a plaintiff would have to show that the lie was material—that is, but for the deception about privacy, a significant mass of consumers would not have used the product in question; without moving a significant number of consumers away from rivals and to the dominant firm, there can be no distortion of competition.⁸⁴ Such a showing is likely to be difficult in light of the empirical evidence suggesting that privacy does not appear to be a particularly important dimension of competition for most consumers, as discussed above in section 2.A. This showing is likely to be all the more difficult if substantial product improvements were occurring at the same time as the alleged privacy-related deception.⁸⁵ Further, the shift in demand due to the deception would have to be durable enough to create a non-transitory limit on competitors' ability to constrain the dominant firms' privacy decisions.⁸⁶

⁸³ Microsoft, 253 F.3d at 79.

⁸⁴ A similar showing would be necessary to make out an attempted monopolization claim, which requires in addition to exclusionary conduct and specific intent to monopolize, a "dangerous probability of achieving monopoly power." *Spectrum Sports, Inc. v. McQuillan*, 506 U.S. 447, 456 (1993).

⁸⁵ See Section II.C., *infra*, for a discussion of how increased collection and use of data are intertwined with consumer benefits.

⁸⁶ Some have suggested that markets subject to network effects may be more vulnerable to deception as an anticompetitive strategy. See, e.g., Srinivasan, *supra* note 65, at 91–92. A plaintiff would bear the burden of providing evidence that the market is characterized by sufficiently strong network effects that the measured impact from the deception was likely to tip the market in the dominant firm's favor and make a "durable contribution to the defendant's market power." AREEDA & HOVENKAMP, *Antitrust Law*, ¶782.

C. Intrinsic Benefits to Collection of Data

Anticompetitive theories that analogize a firm's privacy to quality implicitly assume that all other attributes of price and quality are held constant when a firm alters its privacy choices. Thus, when privacy goes up, consumers are unambiguously better off, and vice-versa when it goes down. Granting that this analogy has facial appeal, it breaks down under close inspection because of the role that consumer data play in firms' production functions. Although skimping on quality can directly increase a firm's profits at the expense of all consumers, consumer data merely take up space on a server unless they are used in a way that is likely to benefit at least some consumers.

To see why, consider how a hypothetical car maker benefits by reducing the quality of the tires on its cars, while holding price and all other dimensions of quality constant. To make the math simple, suppose that the car sells for \$100 and the marginal cost of production with good tires is \$50, and \$40 with bad tires. If the car maker holds price constant and switches bad tires for good, it enjoys an immediate per-car profit increase of \$10. All consumers who stay in the market are unambiguously worse off, because they are still paying \$100 for a car that has less value.⁸⁷

Next, consider the chain of events that occur when a platform reduces its privacy—for example, by placing tracking cookies on visitors' browsers. First, unlike the case of the car market, this reduction in quality has not lowered the platform's costs. In fact, to the extent that a platform expends resources on coding or server space, collection and use of additional consumer data may actually increase costs. Second, unlike the car maker that now has an extra \$10 in profit from each customer, the platform only has additional stores of consumer information on its server. This is where the privacy-quality analogy breaks down: the platform must take some action to convert reduced privacy into a

⁸⁷ We will assume that even though the lower quality will result in lower demand, that the car maker's market power makes this reduction in quality a profit-maximizing decision.

revenue stream, and these actions typically benefit at least some consumers.⁸⁸ This nuance distinguishes reductions in privacy from the more generic case of reducing quality while holding price constant—increasing access to consumer information may reduce quality along the privacy dimension, but the necessary monetization of these data increases quality in other dimensions.⁸⁹ Thus, a reduction in privacy could increase or decrease consumer welfare depending on how these quality changes net out.

How does the conversion of consumer data into revenue take place, and how does it benefit consumers? Most directly, a platform can use consumer data to improve its offerings. For example, it can create more seamless logons, and more closely tailor content to personal interests by customizing reading and viewing lists, or shopping suggestions, or use consumer data to help prevent fraud.⁹⁰

Another common use of consumer data by a platform is to sell display advertisements based on user-specific information, or so-called interest-based advertisements (IBA). IBA delivers two potential benefits to consumers. First, IBA provides consumers with more relevant information than contextual advertising—advertising shown based on the content of the website, not the interests of the consumer.

⁸⁸ See, e.g., James C. Cooper, *Privacy and Antitrust: Underpants Gnomes, The First Amendment, and Subjectivity*, 20 GEO. MASON L. REV. 1129 (2013).

⁸⁹ Shelanski identifies three possible ways that consumer data provides value to a firm:

First, customer information can be an input of production that enables a business to improve its service offerings and increase its returns. Second, customer data can be a strategic asset that allows a platform to maintain a lead over rivals and to limit entry into its market. Third, customer information can be a valuable commodity, which the firm could sell to other businesses that cannot collect the data themselves.

Shelanski, *supra* note 19, at 1679. As discussed in the text, it is clear to see how the first and third uses of data benefit consumers. Using data as a strategic asset, however, is just a restatement of the first benefit to consumers, cast as a competitive advantage to the firm collecting it. As Shelanski puts it, “[t]his larger information set might enable the leading firm to make information-dependent product improvements that smaller rivals will be unable to replicate.” Shelanski. at 1681. Note, that the competitive advantage to the collecting firm comes from the ability to create a better product through better access to data—a clear benefit to consumers.

⁹⁰ See, e.g., CMA Report, *supra* note 20, at ¶¶4.28-4.29.

For example, in a world without IBA, a tennis player is visible as such only when visiting a website correlated with such an interest (e.g., Tennis.com), which may be rare in relation to her overall Internet browsing. IBA allows consumers to broadcast this interest to relevant providers of tennis-related goods and services regardless of where they are online, providing them with greater access to relevant information. The marginal value of this information is evidenced by the fact that IBA sells for a substantial premium over contextual advertisements due to its higher conversion rates.⁹¹ Second, an indirect benefit from IBA over contextual ads is that IBAs generates more revenue for content providers to subsidize content, which digital platforms often provide to consumers for free.⁹²

⁹¹ See Garrett Johnson et al., *Consumer Choice in Online Advertising: Who Opts Out and at What Cost to Industry?*, 39 MKTG. SCI. 33 (2020); Avi Goldfarb & Catherine E. Tucker, *Privacy Regulation and Online Advertising*, 57 MGMT SCI. 57, 68 (2011); Howard Beales & Jeffery A. Eisenach, *Putting Consumers First: A Functionality Based Approach to Online Advertising* (Navigant Econ. Working Paper 2013), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2211540. Shelanski, *supra* note 19, at 1680. The difference in value between contextual ads and IBA is likely to be larger for general audience websites (e.g., CNN.com) than niche websites (e.g., Tennis.com), as visiting a general audience website provides far less information about a consumers' interests. For example, an online seller of tennis equipment can infer that a visitor to Tennis.com is likely to be interested in its products, whereas absent IBA, it has no ability to determine if a visitor to CNN.com is a tennis player. In addition to identifying consumers who are likely to be interested in a product, IBA also allows advertisers to measure the effectiveness of their ad campaigns by, for example, tracking conversions or other actions in the online or offline world. See CMA Report, *supra* note 20, at ¶5.61 (noting that Google's first-party data gives it an advantage in conversion attributions); *see also id.* at ¶6.18 (noting that Google's and Facebook's higher revenue per user can be attributed in part to better targeting of advertisements toward relevant consumers and the ability to monitor consumers' subsequent actions.).

⁹² The recent FTC case against YouTube for violations of the Children's Online Privacy Protection Act (COPPA) highlights this tradeoff. To comply with the consent decree, YouTube has prohibited the use of IBA for any content directed at children. Consent Decree at 10, *FTC v. Google, Inc.*, Case No. 1:19-cv-02642 (D.D.C. 2019). This move has created an uproar on the part of content providers, who are concerned about the inability to generate sufficient revenues to continue creating content. See, e.g., Julia Alexander, *YouTube Officially Rolls Out Changes to Children's Content Following FTC Settlement*, THE VERGE (Jan. 6, 2020) ("YouTube has said kid-focused channels will see 'a significant business impact' due to reduced ad revenue"), at <https://www.theverge.com/2020/1/6/21051465/youtube-coppa-children-content-gaming-toys-monetization-ads>; Julia Alexander, *YouTubers Say Kids' Content Changes Could Ruin Careers*, THE VERGE (Sept. 5, 2019), at <https://www.theverge.com/2019/9/5/20849752/youtube-creators-ftc-fine-settlement-family-friendly-content-gaming-minecraft-roblox>. There is also some evidence that the reduction in revenue to creators from ad blocking technology has had a negative impact on online content. See Benjamin Schiller et al., *The Effect of Ad Blocking on Website Traffic and Quality*, 49 RAND J. ECON. 43 (2018) (finding evidence that the use of ad blockers reduces website quality by reducing revenue available for content

In addition to using the consumer data it collects, a firm may sell it to third parties. But selling data to third parties creates an additional revenue stream for the platform, again subsidizing the production of content. Further, third parties typically purchase consumer data for the same reasons the first party collects it—either to customize offers or advertisements to their consumers. Further, consumer data also may be used by a competitor to facilitate entry into a market, again benefiting consumers.

None of the above is meant to say that a firm could never exercise market power by reducing privacy in a way that reduces consumer welfare. Rather, the only point is that the net impact on consumers from a reduction in privacy is much more complicated than the simple example of a manufacturer replacing high quality parts with low quality parts; it depends on the distribution of preferences for privacy and data-driven quality improvements, and how these preference distributions are correlated.⁹³ Some consumers will find that the utility loss from privacy intrusions swamp any gains in customized content and advertisements, while others will find that the collection and use of their data is on net beneficial. The important takeaway is that the benefits and costs of data collection are inexorably intertwined, and consumer tastes for privacy, data-driven customizations, and targeted ads are heterogeneous and correlated in potentially complex ways. Thus, unlike the case in which a firm profitably exercises market power by reducing quality while holding price constant, which unambiguously harms all consumers (albeit to different degrees), an increase in the collection and use of consumer data may be net harmful or beneficial. Put another way, when a firm reduces privacy, the

creation).

⁹³ As O'Brien & Smith, illustrate, if some consumers find reductions in privacy accompanied by concomitant product quality increases on net beneficial, changes in privacy lead to shifts and rotations in demand. The direction and size of the rotation (clockwise or counterclockwise), and hence the net impact on welfare, depends on the correlation of the distributions of preferences for privacy and quality improvements. See Daniel P. O'Brien & Douglas Smith, *Privacy in Online Markets: A Welfare Analysis of Demand Rotations*, (Fed. Trade Comm'n Bureau of Economics Working Paper 2014), <https://www.ftc.gov/system/files/documents/reports/privacy-online-markets-welfare-analysis-demand-rotations/wp323.pdf>.

privacy-adjusted price for some consumers will rise, while it will fall for others. The net impact on consumer welfare depends on the relative size of these two effects.

D. First Amendment

The First Amendment and the Sherman Act are no strangers. Courts have been called on repeatedly to determine how the Sherman Act's prohibitions on certain conduct interact with the Constitution's protection of the right to petition, assemble, and speak.

In what has come to be known as the *Noerr-Pennington* doctrine, the Supreme Court has interpreted the Sherman Act in light of the First Amendment right to petition in a way that sketches out a general rule that legitimate attempts to secure government action—legislative, regulatory, and judicial—are exempt from antitrust scrutiny.⁹⁴ In *NAACP v. Claiborne Hardware Co.*, the Court also had occasion to consider the application of the antitrust laws in light of the First Amendment's protection of speech and association.⁹⁵ The plaintiffs alleged that a boycott of white businesses violated the Mississippi antitrust laws by diverting business from white-owned to black-owned stores.⁹⁶ The Supreme Court rejected this claim, holding that “[t]he right of the States to regulate economic activity could not justify a complete prohibition against a non-violent, politically motivated boycott”⁹⁷

The First Amendment, however, will not protect speech when it involves an agreement among competitors to restrain competition. In *FTC v. Superior Court Trial Lawyers Association*,⁹⁸ the Supreme Court had no trouble finding that a concerted refusal

⁹⁴ See *United Mine Workers of Am. v. Pennington*, 381 U.S. 657, 670 (1965); *E. R.R. Presidents' Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127, 135 (1961). See *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 499 (1988).

⁹⁵ 458 U.S. 886 (1982).

⁹⁶ *Id.* at 892.

⁹⁷ *Id.* at 914.

⁹⁸ 493 U.S. 411 (1990).

by attorneys to take cases unless higher compensation was offered was not protected by the First Amendment.⁹⁹ The Court explained that the objective of the joint activity was not to urge a government-imposed restraint of trade or to vindicate a fundamental right, but rather “to increase the price that they would be paid for their services.”¹⁰⁰ Thus, the First Amendment will not subtract from antitrust’s power to prevent conduct that has a *direct* anticompetitive effect, even if that conduct happens to be speech. As the Court explained in *Giboney v. Empire Storage & Ice Co.*:

[I]t has never been deemed an abridgement of freedom of speech or press to make a course of conduct illegal merely because the conduct was in part initiated, evidenced, or carried out by means of language, either spoken, written, or printed. Such an expansive interpretation of the constitutional guaranties of speech and press would make it practically impossible ever to enforce laws against agreements in restraint of trade as well as many other agreements and conspiracies deemed injurious to society.¹⁰¹

Courts are “empowered to fashion appropriate restraints on [the defendant’s] future activities both to avoid a recurrence of the violation and to eliminate its consequences, but must be mindful of how a remedy ‘may impinge upon rights that would otherwise be constitutionally protected.’”¹⁰² For example, in *NSPE*, the Supreme Court had no difficulty finding no First Amendment problems with an order against the professional association, which enjoined it from publishing ethical opinions that called into question competitive bidding.¹⁰³ At the same time, the D.C. Circuit in *NSPE* had modified the district court’s order in light of First Amendment concerns to strike a provision requiring the Society to affirmatively state that it did not find price competition

⁹⁹ *Id.* at 426–28.

¹⁰⁰ *Id.* at 427.

¹⁰¹ See *Giboney v. Empire Storage & Ice Co.*, 336 U.S. 490, 502 (1949) (citation omitted).

¹⁰² *Id.* at 697–98. See also Hillary Greene & Dennis A. Yao, *Antitrust as Speech Control*, 60 WM. & MARY L. REV. 1215, 1223 (2019) (“Assuming a finding of antitrust liability, if the remedy to the anticompetitive conduct involves a restriction on speech, this restriction must be sufficiently tailored to meet the appropriate level of scrutiny.”).

¹⁰³ See *Nat’l Soc’y of Prof’l Eng’rs v. United States*, 435 U.S. 679, 696–97 (1978). See also *FTC v. Superior Court Trial Lawyers Association*, 493 U.S. 411 (1990).

to be unethical.¹⁰⁴

If privacy were incorporated into antitrust, liability determinations and remedies that center around the collection and use of consumer data potentially could raise some First Amendment issues. For example, an antitrust theory similar to that in the BKA's case against Facebook that premises liability directly on the collection of data and crafts a remedy that limits such collection,¹⁰⁵ or an order preventing two merging firms from combining their data to target advertising both appear to implicate First Amendment values.¹⁰⁶

First, applying antitrust to the collection and use of consumer data may unduly burden the publisher's commercial speech rights. Beginning with *Virginia State Board of Pharmacy v. Virginia Citizens Consumer Council, Inc.*,¹⁰⁷ the Supreme Court has developed the "commercial speech doctrine," which can come to hold that restrictions on commercial speech will be upheld only if the law directly advances a substantial interest and that the measure is drawn to achieve that interest.¹⁰⁸ Of course, merely finding an impact on commercial speech, however, will not automatically doom government action. For instance, privacy-based restrictions on the use of consumer financial data have

¹⁰⁴ Nat'l Soc'y of Prof'l Eng'rs v. United States, 555 F.2d 978, 984 (D.C. Cir. 1977) ("To force an association of individuals to express as its own opinion judicially dictated ideas is to encroach on that sphere of free thought and expression protected by the First Amendment."). See also *ES Dev., Inc. v. RWM Enter., Inc.*, 939 F.2d 547 (8th Cir. 1991) (holding that an order in a Sherman §1 conspiracy case that prevented defendants from making certain communications for "the indefinite future" was an "inappropriate . . . restriction upon appellants' individual exercise of their constitutionally protected rights of commercial speech").

¹⁰⁵ See Bundeskartellamt 6th Decision Division, decision of 6 February 2019, ref. B6-22/16 – *Facebook*.

¹⁰⁶ See Commission decision of 3 October 2014, Case M.7212 – *Facebook/WhatsApp*.

¹⁰⁷ 425 U.S. 748 (1976).

¹⁰⁸ See *Bd of Trs. of the State Univ. of N.Y. v. Fox*, 492 U.S. 469, 480 (1989); *Cent. Hudson Gas & Elec. Corp. v. Pub. Serv. Comm'n of N.Y.*, 447 U.S. 557, 566 (1980). The trend, however, has been for greater scrutiny to be applied under the commercial speech inquiry. See Neil Richards, *Reconciling Data Privacy and the First Amendment*, 52 UCLA L. REV. 1149, 1207 (2005).

survived commercial speech inquiries. In *Mainstream Marketing Services v. FTC*¹⁰⁹ the Tenth Circuit found that although the FTC's "Do Not Call" list clearly impinged on telemarketers' commercial speech rights, the asserted government interest in protecting consumers' privacy interests was substantial, and the regulatory program was sufficiently tailored toward its end.¹¹⁰

Second, using antitrust to modify a firm's collection and use of consumer data could directly intrude on its First Amendment rights. That is, irrespective of its effect on commercial speech, courts may find a direct First Amendment interest in the collection and use of consumer data. Although some scholars have expressed skepticism that laws restricting the collection and use of consumer data should raise First Amendment concerns,¹¹¹ others have made persuasive arguments to the contrary.¹¹² For example, Jane Bambauer contends that if we accord Constitutional protection to the right to receive information, it should make little difference whether we receive it from a "speaker" or directly from our observations of the world.¹¹³

Sorrell v. IMS Health Inc. provides some support for this idea.¹¹⁴ *Sorrell* involved a

¹⁰⁹ 358 F.3d 1228 (10th Cir. 2004).

¹¹⁰ *Id.* at 1250–51 ("Do not call" regulation survives intermediate scrutiny); *see also* *Trans Union LLC v. F.T.C.*, 295 F.3d 42, 46, 53 (D.C. Cir. 2002) (regarding an FTC regulation pursuant to Graham-Leach-Bliley restricting the ability of financial institutions to disclose private information to third parties survives intermediate scrutiny); *Trans Union Corp. v. F.T.C.*, 245 F.3d 809, 818–19 (D.C. Cir. 2001) (regarding FTC rules restricting use of credit reports under Fair Credit Reporting Act survives intermediate scrutiny).

¹¹¹ *See* Richards, *supra* note 108, at 1182–90 (detailing myriad rules that affect the use and collection of data that are treated as laws restraining conduct, not speech); *see also* Ashutosh Bhagwat, *Sorrell v. IMS Health: Details, Detailing, and the Death of Privacy*, 36 VT. L. REV. 855 (2012); Shubha Ghosh, *Informing and Reforming the Marketplace of Ideas: The Public-Private Model for Data Production and the First Amendment*, 2012 UTAH L. REV. 653, 705–06 (2012).

¹¹² *See* Jane Yakowitz Bambauer, *Is Data Speech?*, 66 STAN. L. REV. 58, 73 (2013); Fred H. Cate & Robert Litan, *Constitutional Issues in Information Privacy*, 9 MICH. TELECOMM. & TECH. L. REV. 35, 49, 57 (2002); Eugene Volokh, *Freedom of Speech and Information Privacy: The Troubling Implications of a Right to Stop People from Speaking About You*, 52 STAN. L. REV. 1049, 1051–52 (1999).

¹¹³ Bambauer, *supra* note 112, at 23.

¹¹⁴ 131 S. Ct. 2653 (2011).

challenge to a Vermont statute that prohibited pharmacies, hospitals, and other health care entities from selling or disclosing prescriber-identifying information for marketing purposes, and prevented pharmaceutical companies from using this data for marketing purposes.¹¹⁵ Although the Court held that heightened scrutiny was appropriate because the law imposed speaker- and content-based restrictions on pharmaceutical companies' speech, it ultimately disposed of the case under a less stringent commercial speech inquiry.¹¹⁶ Importantly for the application of antitrust to privacy, the Court held that the sale, transfer, or use of prescriber-identifying information was protected speech.¹¹⁷

Whether data collection and use are protected directly or enjoy protection due to their impact on commercial speech is germane to the level of protection they are afforded.¹¹⁸ Of course, such a distinction may be meaningless if the Supreme Court continues to interpret the Sherman Act in light of the First Amendment, rather than directly impose First Amendment strictures on the Sherman Act. But the stronger the First Amendment value at stake, the more likely the Court would be willing to interpret the Sherman Act in a way that limits its application to privacy practices.¹¹⁹

¹¹⁵ *Id.* at 2662–63.

¹¹⁶ *Id.* at 2667.

¹¹⁷ *Id.* at 2666. The Court spoke of the “rule that information is speech,” and explained that “[t]his Court has held that the *creation* and dissemination of information are speech within the meaning of the First Amendment . . . Facts, after all, are the beginning point for much of the speech that is most essential to advance human knowledge and to conduct human affairs.” *Id.* at 2667 (emphasis added) (citation omitted). Professors Bambauer and Bhagwat reach similar conclusions. See Bambauer, *supra* note 112, at 79; Bhagwat, *supra* note 111, at 862.

¹¹⁸ Bambauer contends that although collecting consumer data is done by a business and often linked to advertising, because the right to collect data is so intertwined with the right to speak it should not necessarily be subject to lower levels of scrutiny associated with commercial speech or speech involving a private, rather than public, concern. See Bambauer, *supra* note 112, at 101–05.

¹¹⁹ See, e.g., *E. R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127, 137 (1961); *Sosa v. DIRECTV, Inc.*, 437 F.3d 923, 931 (9th Cir. 2006) (analyzing the Supreme Court’s approach to the First Amendment and the Sherman Act in *Noerr*). See *F.T.C. v. Superior Court Trial Lawyers Ass’n*, 493 U.S. 411, 424 (stating that the Court in *Noerr* was “[i]nterpreting the Sherman Act in the light of the First Amendment’s Petition Clause”); see also *Prof’l Real Estate Investors, Inc. v. Columbia Pictures Indus., Inc.*, 508 U.S. 49, 56 (arguing that the Court in *Noerr* interpreted the Sherman Act, in part, to avoid imputing “to

E. Subjectivity

In addition to raising serious conceptual issues, incorporating privacy as a dimension of competition would inject a large degree of additional subjectivity into antitrust analysis. When the law is fairly well established, one is left primarily to argue that the facts place the conduct under scrutiny on one side or another of the line between legality and illegality. For example, consider the case of a naked horizontal agreement to fix prices or to allocate markets. If the facts are ambiguous, parties will try to convince a court that there was no agreement, or that if there were one, the agreement was reasonably ancillary to efficiency enhancing conduct¹²⁰ No reasonable legal argument, however, could be advanced that the alleged conduct, if shown, is not per se illegal.¹²¹ Similarly, a party could not advance with a straight face an argument to condemn above-cost pricing by a small firm. Save for some nuances around the margins, the discretion afforded courts and enforcers in these circumstances largely is confined to interpretation of the facts; the law is clear.

This circumstance changes, however, when one injects a subjective metric like privacy into the inquiry. For example, consider the BKA case against Facebook, in which liability turned on whether Facebook's data collection was done without consent due to

Congress an intent to invade 'the First Amendment right to petition.'"). The recent application of *Noerr* principles to the National Labor Relations Act ("NLRA") provides additional insight into the role that the First Amendment plays in defining the scope of *Noerr* protection. See *BE & K Constr. Co. v. NLRB*, 536 U.S. 516, 525 (2002). As in *Noerr*, the Court in *BE & K* turned to statutory construction to avoid the constitutional question, holding that the NLRB's standard was invalid because there was nothing in the relevant statutory text to suggest that it "must be read to reach all reasonably based but unsuccessful suits filed with a retaliatory purpose." *Id.* at 536. In light of the *BE & K* decision, the Ninth Circuit recently concluded that the *Noerr* doctrine "stands for a generic rule of statutory construction, applicable to any statutory interpretation that could implicate the rights protected by the Petition Clause . . . Under the *Noerr-Pennington* rule of statutory construction, we must construe federal statutes so as to avoid burdening conduct that implicates the protections afforded by the Petition Clause unless the statute clearly provides otherwise." *Sosa*, 437 F.3d at 931 (citations omitted).

¹²⁰ See, e.g., *Polygram Holding, Inc. v. FTC*, 416 F.3d 29, 32-33 (D.C. Cir. 2005).

¹²¹ See *Palmer v. BRG of Ga., Inc.*, 498 U.S. 46, 49-50 (1990) (per curiam).

unequal bargaining power and whether Facebook took more data than it needed for “efficiency and advantages of personalized service.”¹²² How does a firm predict how a court or an enforcer will answer questions like, was this data necessary to provide a service? Or, did users actually consent to these terms? Objective answers to these queries are elusive at best. Increased subjectivity means enhanced regulatory discretion, and hence less certainty over legal standards.¹²³

The key cost associated with subjectivity is over-deterrence. It is a standard result in the economics of accidents literature that when parties can only estimate the legal standard with error, potential violators take too much precaution.¹²⁴ This is because the potential costs from taking too much care to avoid liability are generally far lower than the costs of being liable. What does this mean in the context of antitrust? To take too much care in antitrust means to avoid business practices where the line between legal and illegal behavior is blurred,¹²⁵ and the magnitude of these error costs depends on exactly which business practices firms are choosing to forego.¹²⁶ If privacy were to enter into antitrust considerations, there is a risk that firms would limit beneficial data collection and analysis to avoid the possibility of an antitrust suit.

A second cost to subjective liability standards is dissipative expenditures to obtain favorable government action. When government actors have the power to make decisions that affect the distribution of resources, private parties rationally spend money in an

¹²² Bundeskartellamt 6th Decision Division, decision of 6 February 2019, ref. B6-22/16 – *Facebook*.

¹²³ See Maureen K. Ohlhausen & Alexander P. Okuliar, *Competition, Consumer Protection, and the Right [Approach] to Privacy*, 80 ANTITRUST L.J. 121, 151–52 (2015).

¹²⁴ See STEVEN SHAVELL, FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW 224-27 (2004). See also Richard Craswell & John E. Calfee, *Deterrence and Uncertain Legal Standards*, 2 J. L. ECON. & ORG. 279 (1986).

¹²⁵ David S. Evans & A. Jorge Padilla, *Designing Antitrust Rules for Assessing Unilateral Practices: A Neo-Chicago Approach*, 72 U. CHI. L. REV. 73, 73-74 (2005).

¹²⁶ See *id.* at 84–85.

attempt to effect a favorable distribution.¹²⁷ Accordingly, as long as antitrust regulators and courts can prohibit certain business practices, companies rationally will spend money in an attempt to persuade them to redistribute wealth in their favor.¹²⁸ The inclusion of a subjective metric like privacy into antitrust analysis will further exacerbate this tendency by blurring the line between legal and illegal conduct.

Imagine a merger with no anticompetitive overlaps (e.g., firms in two unrelated markets). Under standard merger analysis, the law is clear, and this transaction likely would be cleared without a second request. Once privacy enters the discussion, however, regulators have an additional hook with which to potentially scuttle the deal; with an enlarged regulatory field of play, rivals will find it worth their while to expend resources to convince regulators that privacy concerns should doom the transaction. At the same time, the merging parties will feel compelled to defend their transaction on privacy grounds. This is not to denigrate lobbying expenditures—they are an important and correctly protected avenue to express views to a government that can take actions that impact property. Further, lobbying can provide government with improved information to make more efficient decisions, that increase welfare. But to the extent that resources are spent merely to trigger a government action—here, either approval or denial of a merger—that transfers wealth from one party to another, they are dissipative.

CONCLUSION

Large online platforms that rely on consumer data play a central role in our economy and our lives, so it should come as no surprise that there is an increasing call to

¹²⁷ Resource distribution can be accomplished through both rent extraction and rent creation. See FRED S. MCCHESENEY, *MONEY FOR NOTHING: POLITICIANS, RENT EXTRACTION, AND POLITICAL EXTORTION* 2 (1997).

¹²⁸ See, e.g., Gordon Crovitz, *Google's \$25 Million Bargain*, WALL ST. J., (Jan. 14, 2013); Gordon Crovitz, *Silicon Valley's 'Suicide Impulse'*, WALL ST. J. (Jan. 28, 2013); Tony Romm, *How Google Beat the Feds*, POLITICO.COM (Jan. 3, 2013, 5:20 PM). This is why the “rectangle” costs associated with government-created market distortions are often thought to be larger than the “triangle,” or deadweight loss, costs. See MCCHESENEY, *supra* note 127, at 12–13.

use antitrust to address perceived privacy issues. Although some have urged policy makers to pursue privacy as a direct goal of antitrust, absent major legislative changes or judicial willingness to cast aside decades of precedent, this is unlikely. Another approach is to incorporate privacy into antitrust by recognizing it as a dimension of non-price competition. On its face, there is nothing to foreclose such an approach. Given the lack of empirical support for privacy being a meaningful dimension of competition and the complexities involved in assessing the consumer welfare effects of increased data collection and use, however, its practical application would appear to be limited.

Institutional Reforms and Agency Design

*Daniel A. Crane**

INTRODUCTION

The United States follows an institutional design for the enforcement of its competition laws that is unique in the world. There are two federal agencies with largely overlapping and concurrent jurisdiction (the Federal Trade Commission and the Justice Department's Antitrust Division), more than fifty state and territorial attorneys general with enforcement power over state and federal law, and a virtually unlimited number of "private attorneys general" whose enforcement activities far outstrip public enforcement.¹ Private enforcement is encouraged by an automatic entitlement to treble damages, one-way shifting of attorney's fees and costs in favor of prevailing plaintiffs, liberal discovery rules, and the availability of class actions. Often, legal norms created in private adjudication are applied in public cases as well, with the effect that perceived over-reaches of private enforcement have negative feedback effects on the strength of public enforcement.

Many aspects of this design are unintended, which is to say that the Congresses that created the institutional arrangements did not anticipate that the arrangements would work in the ways that they ended up working. Private enforcement was meant to be secondary to public enforcement, not the predominant enforcement mechanism. The FTC was meant to be a legislative and judicial body that worked in concert with the executive functions of the Antitrust Division, not a separate and independent executive agency. State Attorneys General were meant to vindicate the interests of their citizens, not to compete with the Justice Department to set national antitrust policy.

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¹ For every antitrust case brought by the federal government, there are at least ten cases brought by private plaintiffs. See Daniel A. Crane, *Technocracy and Antitrust*, 86 TEX. L. REV. 1159, 1179 (2008).

But although the institutions of American antitrust do not necessarily work and interact in the ways they were designed to, that does not mean that they work poorly or that the goal of reform should be to conform them to Congress' original design. The question is whether they work well enough, or whether significant reforms should be undertaken to enhance their performance. Further, given that many of the past efforts to design the institutions of antitrust have resulted in very different arrangements than anticipated, the question is not merely whether antitrust institutions should be reformed, but how things would actually turn out if proposed reforms were adopted. This chapter analyzes the performance of the federal agencies, including their interaction with private and state enforcement, and considers various potential reforms.

I. THE FTC AND DOJ: DESIGN AND FUNCTION

A. The DOJ: Professionalization and Politicization

Since the enactment of the Sherman Act in 1890, the Justice Department's role in enforcing the antitrust laws has changed considerably along the dimensions of professionalism, expertise, and political control. In the early days, antitrust enforcement was handled by the main Justice Department. A dedicated Antitrust Division was not created until 1933, and it was not until 1936 that the Division hired its first economist. Over time, as antitrust grew increasingly technical and economic, the Antitrust Division grew into a technocratic body of antitrust experts working discretely on antitrust matters. In 1964, the historian Richard Hofstadter described antitrust as administered by "a small group of influential and deeply concerned specialists" in "differentiated, specialized, and bureaucratized" administrative institutions.² By the 1980s, the Division's specialized economic function became reflected in the appointment of an economist as Deputy Assistant Attorney General in charge of the Division's growing team of economists.

² Richard Hofstadter, *What Happened to the Antitrust Movement?*, in *THE PARANOID STYLE IN AMERICAN POLITICS AND OTHER ESSAYS* 188, 235 (1966).

As the Antitrust Division has become professionalized and antitrust has become increasingly technical, a norm has developed that antitrust enforcement decisions should be kept separate from ordinary politics. Although to many this norm seems inevitable today, for much of the twentieth century it was not remotely scandalous for the President to be directly involved in antitrust decision-making. President Theodore Roosevelt took a hands-on approach to the management of antitrust cases by the Justice Department, going so far as to make a May 4, 1906 Special Address to Congress about the Standard Oil case that was about to be filed.³ In 1937, President Franklin Roosevelt gave a press conference about the Attorney General's findings concerning collusion in the steel industry.⁴ As late as 1974, President Ford would admit to being mildly involved in the decision to bring the AT&T case.⁵

The propriety of White House involvement in bringing antitrust cases came into question during the Watergate scandal, when it became known that the White House had effectively traded an easy settlement in an antitrust case against ITT for a major campaign contribution to the 1972 Republican National Convention.⁶ Following Watergate, it became the norm that decisions on the bringing and management of particular antitrust cases should be a technocratic or law enforcement decision at the Antitrust Division over which the White House and senior political officials should have no say. Thus, in 2000, President Clinton publicly insisted that he had no role whatsoever in the Justice Department's decision to bring its landmark monopolization case against Microsoft.⁷

³ President Theodore Roosevelt, Special Message to the Senate and House of Representatives (May 4, 1906), www.presidency.ucsb.edu/ws/index.php?pid=69667; see also Crane, *supra* note 1, at 1171-72.

⁴ Press Conference with President Franklin D. Roosevelt (Apr. 27, 1937), excerpt, <http://www.presidency.ucsb.edu/ws/index.php?pid=15397>.

⁵ Press Conference with President Gerald Ford (Dec. 2, 1974), <http://www.presidency.ucsb.edu/ws/?pid=4600>.

⁶ See Eleanor M. Fox, *Teaching and Learning Antitrust—Politics, Politics, Casebooks, and Teachers*, 66 N.Y.U. L. REV. 225, 233-34 (1991).

⁷ Interview by Wolf Blitzer with President William J. Clinton (Feb. 14, 2000), <http://www.presidency>

The question of undue political control by the White House over antitrust enforcement is currently in focus once again. Critics assert that President Trump's personal political antipathy to the CNN network was behind the Antitrust Division's unsuccessful litigation against the AT&T/Time Warner merger. Since that case, accusations of political intermeddling have become even more severe. In June of 2020, a career staff lawyer at the Antitrust Division wrote a whistleblower letter to the U.S. House Committee on the Judiciary asserting that the Attorney General had inappropriately directed the Antitrust Division to investigate cannabis industry mergers that involved no serious competition issues because of his personal opposition to marijuana.⁸ He further alleged that, under political pressure from the White House, the Antitrust Division had initiated an investigation into an automobile emissions agreement that four automobile manufacturers had completed with the State of California, even though the agreement was clearly protected by *Noerr-Pennington* immunity. Critics assert that the Trump Administration has used the Antitrust Division to further the political aims of the President and top administration officials, charges that the Assistant Attorney General for Antitrust has sharply denied.⁹

Today, the Justice Department's Antitrust Division is a professional organization staffed primarily by lawyers expert in antitrust and microeconomists. Most of its business is technocratic, specialized, and non-political. But there remains an important question about the extent to which the agency is—and should be—independent from the political control of the White House and senior politicians. On the one hand, antitrust must be

.ucsb.edu/ws/index.php?pid=58086.

⁸ Testimony of John W. Elias U.S. House Committee on the Judiciary (June 24, 2020), <https://www.justsecurity.org/wp-content/uploads/2020/06/john-w-elias-testimony-house-judiciary-committee-june-24-2020.pdf>

⁹ See Letter to Hon. Jerrold Nadler, Chairman and Hon. Jim Jordan, Ranking Member, Committee on the Judiciary, U.S. House of Representatives (July 1, 2020), <https://www.politico.com/f/?id=00000173-0d14-dd78-a9ff-7fb6e2a70000>

kept free of corrupting influences and partisanship. On the other hand, antitrust decision-making involves weighty policy decisions for which the President is ultimately responsible. Whatever else the relevant norm is, it cannot be a flat prohibition on the White House being involved in formulating antitrust policy, including in giving guidance on the kinds of cases that should be brought and the remedies that should be sought.

B. The FTC: From Quasi-Legislative and Quasi-Judicial to Mostly Executive

In 1914, Congress created the FTC as an independent administrative agency to solve some of the perceived institutional infirmities of antitrust enforcement by the executive branch. In the words of the Supreme Court in its landmark decision in *Humphrey's Executor*,¹⁰ the FTC could constitutionally function free from White House control because it had a “quasi-legislative,” and “quasi-judicial” character rather than executive one.¹¹ As Congress had in 1914, the Supreme Court apparently considered the FTC as a body that would be primarily involved in studying markets, proposing new legislation to Congress, framing trade regulation rules, bolstering the Antitrust Division by recommending remedies or sitting as a special master in equity, and hearing equitable cases as an administrative tribunal.

In fact, the FTC has turned out to be a very different institution than Congress and the Supreme Court imagined in the early twentieth century. In its antitrust capacity, it has functioned much more as an executive enforcement agency than as a legislative or judicial body.¹² Over the course of its over one hundred years of existence, the FTC has framed almost no antitrust rules. While it does occasionally sit as an adjudicative body, it has increasingly chosen the option of suing in federal district court as a party-litigant, that is to say, doing exactly what the Justice Department does when it litigates antitrust

¹⁰ *Humphrey's Ex'r v. United States*, 295 U.S. 602 (1935).

¹¹ *Id.* at 628.

¹² See generally Daniel A. Crane, *Debunking Humphrey's Executor*, 83 GEO. WASH. L. REV. 1835 (2015).

cases. The FTC almost completely ignored the statutory powers to sit as a special master in equity or to monitor compliance with antitrust remedies imposed in Justice Department cases.

Instead of functioning as a legislative and adjudicatory body, the FTC has become an alternative to the Justice Department for antitrust enforcement. Putting aside criminal enforcement and cases involving common carriers, which the FTC cannot prosecute, the two agencies have concurrent jurisdiction to launch investigations and enforce the antitrust laws. Whether the subject is mergers, monopolization, or agreements in restraint of trade, most of the two agencies do exactly the same thing—determine if the law has been violated and, if so, either resolve the issue through negotiation with the parties or bring a lawsuit to address the issue. The agencies do not divide enforcement territory based on any of their relative institutional features—for example, by assigning cases to the FTC which might be better heard administratively or assigning cases to the DOJ because of political sensitivities requiring coordination with other executive agencies. Rather, they divide territory based on their experience with particular industries. Thus, cases involving computer software (i.e., Microsoft) typically land at DOJ, whereas cases involved computer hardware (i.e., Intel) typically land at FTC. This is division of executive labor between two executive agencies that have accidentally arrived at the same portfolio of enforcement responsibilities, not something that any reasonable person would intentionally construct as a matter of institutional design.

Two more ostensible advantages of having an independent commission warrant brief mention. Compared to the Justice Department, Congress ostensibly meant for the FTC to be highly expert and politically neutral. As to expertise, for much of its history the FTC has not been particularly expert in economics or competition policy. Today, the Commission does have a considerable amount of expertise, but no more than DOJ. As to political independence, it is true that the FTC is not subservient to the President in the way that, for better or worse, the Justice Department is. However, the FTC may have

traded subservience to the President for subservience to Congress. Studies have shown that the Commission tends to follow the will of the Congresspersons with oversight authority over the Commission. These political pressures may be less direct and acute than the hierarchical power of the President over the Justice Department, and the separation of antitrust enforcement into an agency controlled by the President and one controlled by Congress may disperse power, lower the potential for abuse, and minimize the threat of dramatic swings in enforcement from administration to administration. Nonetheless, it is not accurate that the FTC is a politically detached body. It simply tends to serve a different master than the Justice Department.

II. INTERACTIONS BETWEEN ENFORCEMENT INSTITUTIONS

A. FTC & DOJ: Collaborators and Antagonists

As already noted, Congress designed the FTC to collaborate with the Justice Department in studying and enforcing the antitrust laws rather than to serve as an alternative law enforcement agency, as it largely has done historically and does today. Still, the two agencies do collaborate productively in various important ways.

Given that the two agencies have largely overlapping jurisdiction over mergers, investigations, and enforcement, one very important way the agencies collaborate is in the process of determining which agency will take jurisdiction over which matters. This is particularly important in the time-sensitive matter of pre-merger notification under the Hart-Scott-Rodino Act, where a 30-day clock (or even 15 in some cases) to close the merger begins to run as soon as the merging parties submit their HSR filing. The DOJ and FTC are usually able to resolve which agency will take a matter relatively quickly and efficiently, but on occasion turf wars can occur.

Another, and equally important, kind of collaboration concerns joint hearings and

the promulgation of enforcement guidelines. The Horizontal Merger Guidelines¹³ are the most important example, but there are others covering such topics as vertical mergers,¹⁴ competitor collaborations,¹⁵ and the licensing of intellectual property.¹⁶ In the antitrust community, the agencies' joint guidelines are generally viewed as helpful guidance documents for understanding the agencies' position on antitrust policy and enforcement and providing advice to clients who must navigate the uncertainties of antitrust law. With a few exceptions, the various guidelines have been viewed as technocratic rather than political or ideological documents, as evidenced by the fact that they have not been discarded with inter-party shifts in administration.

But if the agencies are usually good collaborators, they can also be antagonists on occasion. In recent years, agency antagonism has largely been the product of the Justice Department taking a more conservative position than the FTC on matters of antitrust policy. The agency bad blood is episodic, and sometimes seems retaliatory.

For instance, in the early 2000s the FTC brought an enforcement action against Schering-Plough over several of Schering's patent litigation settlements involving "reverse payments" (payments from the branded drug maker to the generic drug maker not to enter the market).¹⁷ The FTC suffered a stinging defeat in the United States Court

¹³ U.S. Dep't of Justice & Fed. Trade Comm'n, 2010 HORIZONTAL MERGER GUIDELINES, Aug. 19, 2010, <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010> [hereinafter Horizontal Merger Guidelines],

¹⁴ U.S. Dep't of Justice & Fed. Trade Comm'n, 2020 VERTICAL MERGER GUIDELINES (June 30, 2020) [hereinafter Vertical Merger Guidelines], https://www.ftc.gov/system/files/documents/reports/us-department-justice-federal-trade-commission-vertical-merger-guidelines/vertical_merger_guidelines_6-30-20.pdf.

¹⁵ U.S. Dep't of Justice & Fed. Trade Comm'n, 2000 ANTITRUST GUIDELINES FOR COLLABORATION AMONG COMPETITORS, https://www.ftc.gov/sites/default/files/documents/public_events/joint-venture-hearings-antitrust-guidelines-collaboration-among-competitors/ftcdojguidelines-2.pdf.

¹⁶ U.S. Dep't of Justice & Fed. Trade Comm'n, 2017 ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY https://www.ftc.gov/system/files/documents/public_statements/1049793/ip_guidelines_2017.pdf.

¹⁷ Schering-Plough Corp. v. FTC, 402 F.3d 1056 (11th Cir. 2005).

of Appeals for the Eleventh Circuit and sought a writ of certiorari in the Supreme Court.¹⁸ The Solicitor General and the Antitrust Division then filed their own brief (at the invitation of the Supreme Court), recommending that the Court deny certiorari,¹⁹ which the Court did.²⁰ The FTC was highly displeased at the time (it eventually won on the reverse payments issue in the Supreme Court in 2013).²¹

Several years later, the FTC shot back. In 2007, in a private lawsuit, the United States Court of Appeals for the Ninth Circuit ruled that an Internet service provider (ISP) could maintain a “price-squeeze” claim against the local telephone company for charging the ISP too high a price at wholesale in relation to the telephone company’s retail prices for DSL service.²² Displeased with this result, the Solicitor General and the Antitrust Division filed an amicus curiae brief supporting the phone company’s certiorari petition in the Supreme Court.²³ The FTC then issued a lengthy press release explaining that it strongly disagreed with the Justice Department and refused to join the brief.²⁴ In this case, the Justice Department’s position ultimately prevailed in the Supreme Court.²⁵

The bickering was about to get worse. For several years, the agencies had been collaborating on a report on unilateral exclusionary conduct. They held numerous joint hearings, organized and staffed by members of both agencies. Since unilateral

¹⁸ Petition for a Writ of Certiorari, *FTC v. Schering-Plough Corp.*, No. 05-273, 2005 WL 2105243 (Aug. 29, 2005).

¹⁹ Brief for the United States as Amicus Curiae, *FTC v. Schering-Plough Corp.*, No. 05-273, 2006 WL 1358441 (May 17, 2006).

²⁰ Order Denying Certiorari, *FTC v. Schering-Plough Corp.*, 548 U.S. 919 (2006).

²¹ *FTC v. Actavis, Inc.*, 570 U.S. 136 (2013).

²² See *linkLine Commc’ns, Inc. v. SBC California, Inc.*, 503 F.3d 876 (9th Cir. 2007).

²³ Brief for the United States as Amicus Curiae, *Pacific Bell Telephone Co. v. linkLine Communications, Inc.*, 555 U.S. 438 (2009), 2008 WL 2155265.

²⁴ See Statement of the Federal Trade Commission, Petition for a Writ of Certiorari *Pacific Tel. Co. d/b/a AT&T California v. linkLine Comms., Inc.* (No. 07-512), <http://www.ftc.gov/os/2008/05/P072104stmt.pdf> (May 23, 2008).

²⁵ See *Pacific Bell Co. v. linkLine Commc’ns.*, 555 U.S. 438 (2009).

exclusionary conduct was a hot issue in the antitrust community, the joint report was much anticipated. But when the report was released in September 2008, it was unilateral in two senses: it discussed unilateral conduct, and the FTC refused to join.²⁶ Instead, the FTC issued a harshly worded dissent, complaining that the report “would be a blueprint for radically weakened enforcement of Section 2 of the Sherman Act,” asserting that “the testimony gathered during the hearings was not representative of the views of all Section 2 stakeholders,”²⁷ and threatening that the FTC “stands ready to fill any Sherman Act enforcement void that might be created if the Department actually implements the policy decisions expressed in its Report.”²⁸ In 2009, when President Obama’s appointees took over the Antitrust Division, one of Assistant Attorney General Christine Varney’s first official acts was to withdraw the Justice Department’s Section 2 Report as excessively conservative and limiting of anti-monopolization enforcement.²⁹ As with much of the inter-agency squabbling, this may have been more bark than bite: over the course of its 8 years, the Obama Justice Department brought only one monopolization case—and an insignificant one at that.

Recently, the agencies have again publicly clashed in ideological terms. In 2017, the Federal Trade Commission voted 2–1 to bring a monopolization case against Qualcomm concerning the licensing of its chipsets. It brought the case in a federal district court in California over the dissent of Commissioner Maureen Ohlhausen, who asserted

²⁶ U.S. Dep’t of Justice, Competition and Monopoly: Single-Firm Conduct Under Section 2 of the Sherman Act (2008), <http://www.usdoj.gov/atr/public/reports/236681.htm>.

²⁷ It is particularly difficult to understand this procedural complaint, since the FTC was just as involved as the Antitrust Division in organizing the hearings.

²⁸ FTC Commissioners React to Department of Justice Report, *Competition and Monopoly: Single-Firm Conduct Under Section 2 of the Sherman Act* (Sept. 8, 2008), <http://www.ftc.gov/opa/2008/09/section2.shtm>.

²⁹ See Press Release, U.S. Dep’t of Justice, Justice Department Withdraws Report on Antitrust Monopoly Law, (May 11, 2009), <https://www.justice.gov/opa/pr/justice-department-withdraws-report-antitrust-monopoly-law#:~:text=Varney%2C%20Assistant%20Attorney%20General%20in,was%20issued%20in%20September%202008>.

that the case would “undermine U.S. intellectual property rights in Asia and worldwide.”³⁰ Before the district court ruled, the Trump Justice Department filed a “Statement of Interest.”³¹ It foresaw a possible victory for the FTC and a possible order to Qualcomm to license its technology on FRAND terms, and it urged the court to hold further hearings before fashioning a remedy in the event it found liability.³² The district court did not heed the DOJ’s statement. In 2019, in a factually intensive 233-page decision, it found that “Qualcomm’s licensing practices have strangled competition,”³³ and it issued an injunction requiring Qualcomm to discontinue its practice of refusing to sell chips to phone makers unless they also licensed its patents.³⁴

By the time of the district court decision, a new set of FTC commissioners was in place, and the Commission’s ideological divide was on full display. Commissioner Christine Wilson penned an op-ed in the Wall Street Journal condemning the court’s decision as a “dangerous antitrust overreach” that will “create new legal obligations, undermine intellectual-property rights, and expand the application of our antitrust laws beyond U.S. borders.”³⁵ At the same time, her colleagues Commissioners Rohit Chopra and Rebecca Slaughter issued statements praising the decision as “a thorough accounting,” “meticulous,” and a huge victory “for every American who believes in

³⁰ Dissenting Statement of Commissioner Maureen K. Ohlhausen, Qualcomm, Inc., FTC File No. 141-0199 (Jan. 17, 2017), https://www.ftc.gov/system/files/documents/cases/170117qualcomm_mko_dissenting_statement_17-1-17a.pdf

³¹ United States’ Statement of Interest Concerning Qualcomm’s Motion for Partial Stay of Injunction Pending Appeal (July 17, 2019), <https://www.justice.gov/atr/case-document/file/1183936/download>

³² *Id.*

³³ Fed. Trade Comm’n v. Qualcomm Inc., 411 F. Supp. 3d 658, 812 (N.D. Cal. 2019), *rev’d and vacated*, No. 19-16122, 2020 WL 4591476 (9th Cir. Aug. 11, 2020).

³⁴ *Id.* at 818-23.

³⁵ Christine Wilson, Opinion, *A Court’s Dangerous Antitrust Overreach Qualcomm Licensed Some of Its Chips 20 Years Ago. A Judge Says That Obliges It To License All of Them Now*, WALL ST. J. May 28, 2019, <https://www.wsj.com/articles/a-courts-dangerous-antitrust-overreach-11559085055>

competitive markets.”³⁶

Qualcomm appealed the decision to the U.S. Court of Appeals for the Ninth Circuit.³⁷ The DOJ went beyond its previous cautionary Statement of Interest and filed a brief declaring the FTC’s case ill-founded and the district court’s opinion wrong. The DOJ invoked statements by the Departments of Defense and Energy fearing that antitrust remedies will significantly reduce Qualcomm’s technological competitiveness vis-à-vis China and could seriously harm U.S. national security. The Ninth Circuit ultimately reversed in part and vacated in part the district court’s opinion, holding that Qualcomm did not engage in anticompetitive conduct by refusing to license to rival chip manufacturers.

What should we make of this recurrent inter-agency squabbling? On the one hand, it could be a sign of democratic health that different governmental agencies express differing points of view on complex regulatory matters. On the other hand, it arguably diminishes the overall influence of federal antitrust enforcement to have the two federal agencies directly feuding with each other in court. Courts might expect that two agencies with different mandates—for example the Department of Transportation and the Environmental Protection Agency—would clash over policy matters, but antagonism between two federal agencies with *the same* mandate suggests that the house of antitrust is not in order.

B. DOJ and State AGs: Hierarchy or Equality?

The United States has a federal antitrust system, meaning that the States also play a role in promulgating and enforcing antitrust law. State Attorneys General enforce their

³⁶ Statement of Commissioner Rohit Chopra on the Ruling by Judge Lucy Koh in Federal Trade Commission v. Qualcomm Incorporated (May 22, 2019), https://www.ftc.gov/system/files/documents/public_statements/1522180/tatement_of_commissioner_chopra_ftc-qualcomm_5-22-19.pdf

³⁷ Fed. Trade Comm’n v. Qualcomm Inc., 969 F.3d 974 (9th Cir. 2020).

own states antitrust laws, but the Hart-Scott-Rodino Act of 1976 also gave them *parens patriae* authority to bring federal antitrust suits on behalf of the citizens of their respective states. Often working through groups organized under the auspices of the National Association of Attorneys General (or “NAAG,” which is not a felicitous acronym for a group that sometimes has to remind the federal government to do its job), the states sometimes join the Justice Department in bringing federal antitrust lawsuits, as they did with respect to the ultimately unsuccessful case involving American Express’s “anti-steering” provisions with merchants.³⁸ The states also sometimes sue when the Justice Department has decided *not* to bring a case, as with respect to their failed lawsuit attempting to block the merger between Sprint and T-Mobile.³⁹ Whether the states sue in tandem with the Justice Department or instead of it, problems can arise. States cannot enforce the FTC Act, so these issues do not arise in quite the same way with respect to the FTC.

The best-known example of problems arising from the states suing in tandem with the Justice Department is the Justice Department’s 1999 suit against Microsoft.⁴⁰ Nineteen states brought suit also, and the cases were consolidated before Judge Thomas Penfield Jackson in the D.C. District Court. Among the more unusual twists and turns in the case, Judge Posner was appointed mediator. In early 2000, after Judge Jackson issued his findings of fact but before he issued his conclusions of law, Judge Posner mediated the case. The parties were unable to reach a settlement. Judge Jackson issued his conclusion of law and subsequently ordered Microsoft broken into two separate companies: an operating systems company and a browser company. The U.S. Court of Appeals for the D.C. Circuit affirmed the decision in part but reversed some key findings, including the

³⁸ See *Ohio v. American Express Co.*, 138 S. Ct. 2274 (2018).

³⁹ See *New York v. Deutsche Telekom AG*, 439 F. Supp. 3d 179 (S.D.N.Y. 2020).

⁴⁰ *United States v. Microsoft Corp.*, 253 F.3d 34, 54 (D.C. Cir. 2001).

remedy, and ordered the case remanded to a different district judge. Then, in November of 2002, the Bush administration reached a settlement with Microsoft. Of the nineteen state plaintiffs, one (South Carolina) dropped its suit, sixteen agreed to the federal settlement, and two states—Massachusetts and West Virginia—objected to the settlement.⁴¹ Judge Kollar-Kottelly eventually issued a final decree close to the one proposed by the Bush administration.⁴²

The antitrust federalism questions mostly center on differing accounts of what occurred during the failed 2000 mediation. In press accounts, Judge Posner blamed the state attorneys general for obstructing a mediated resolution.⁴³ Subsequently, Judge Posner has argued that states should be “stripped of their authority to bring antitrust suits, federal or state, except under circumstances in which a private firm would be able to sue.”⁴⁴ Alternatively, he has proposed giving federal authorities a “right of first refusal” to bring antitrust cases and strip states and private parties from suing over the same matter.⁴⁵ Without mentioning *Microsoft* specifically, he has developed a theory that state attorneys general follow a “strategy consist[ing] of bringing high-profile lawsuits that attract publicity to the attorney general and promote the interests of politically influential state residents . . . at the expense of nonresidents.”⁴⁶ Judge Posner’s arguments are widely understood as a rebuke of the state attorneys general who participated in

⁴¹ Michael DeBow, *State Antitrust Enforcement: Empirical Evidence and a Modest Reform Proposal*, in *Competition Laws in Conflict: Antitrust Jurisdiction in the Global Economy* (Richard A. Epstein & Michael S. Greve, eds., 2004).

⁴² WILLIAM H. PAGE & JOHN E. LOPATKA, *THE MICROSOFT CASE: ANTITRUST, HIGH TECHNOLOGY, AND CONSUMER WELFARE* 72 (Uni. Chi. Press 2007).

⁴³ See Ken Auletta, *What Kept Microsoft from Settling Its Case?*, *NEW YORKER*, at 40 (Jan. 15, 2001).

⁴⁴ Richard A. Posner, *Antitrust in the New Economy*, 68 *ANTITRUST L.J.* 940, 940 (2001).

⁴⁵ *Id.* at 941.

⁴⁶ Richard A. Posner, *Federalism and the Enforcement of Antitrust Laws by State Attorneys General*, in *COMPETITION LAWS IN CONFLICT: ANTITRUST JURISDICTION IN THE GLOBAL ECONOMY* 252, 257 (Richard A. Epstein & Michael S. Greve eds., 2004).

Microsoft.⁴⁷

It has hard to know what to make of the states' participation in *Microsoft*. One possibility is that the states' insistence on remedies more stringent than those that the Clinton Justice Department was willing to accept may have resulted in a weaker eventual decree than would otherwise have been possible. The failure of the mediation in 2000 meant that the case was litigated to the D.C. Circuit, which issued an opinion that affirmed some aspects of Judge Jackson's liability findings but reversed others and, particularly, cast doubt on the viability of a break-up remedy.⁴⁸ The failure of the mediation meant that the Bush Administration rather than the Clinton Administration had the opportunity to settle the case post-appeal and did so on terms more sympathetic to Microsoft. If, as many believe, the eventual Microsoft consent decree was a failure,⁴⁹ then one could claim that the states' refusal to follow the federal lead in 2000 resulted in the ultimate failure of the government's enforcement action.

Microsoft provides a cautionary tale about federal and state enforcers potentially getting in each other's way while trying to jointly manage an antitrust case. In the Sprint/T-Mobile case, there was no coordination problem because the Justice Department approved the deal and opposed the States' injunctive lawsuit to block it. After Federal District Judge Marrero ruled against the deal, allowing the deal to close, Makan

⁴⁷ Other participants in the failed 2000 mediation efforts have disputed Posner's accounts. Harry First, a prominent antitrust scholar at NYU who was then working for the New York Attorney General's Bureau, has suggested that Posner may be at fault for failing to consult the states in the early phases of the mediation and then rejecting the state proposals as "unreasonable" and coming too late. Harry First, *Delivering Remedies: The Role of the States in Antitrust Enforcement*, 69 GEO. WASH. L. REV. 1004, 1033 (2001). First believes that Posner gave up prematurely on the possibility of a settlement because of a "blinkered view" on the competence of the states and that "Posner's impatience with the states may have kept the parties from a result that, in the end, all of the parties would have preferred." First notes that the states contributed significantly to the litigation effort, including evidentiary support for the remedy that Judge Jackson ultimately ordered.

⁴⁸ See generally A. Douglas Melamed & Daniel L. Rubinfeld, *U.S. v. Microsoft: Lessons Learned and Issues Raised*, in ANTITRUST STORIES 287–310, 293–94 (Eleanor M. Fox & Daniel A. Crane eds., 2007).

⁴⁹ See HERBERT HOVENKAMP, *THE ANTITRUST ENTERPRISE: PRINCIPLE AND EXECUTION* 298–304 (2005).

Delrahim, Assistant Attorney General for the Antitrust Division, asserted that the states' failed challenge could impair the states' ability to intervene in future merger cases. "Had that gone the other way, you would have had 53 antitrust agencies," he argued, asserting that the states should not take "whacks of the pinata" after the federal government has approved a merger.⁵⁰

Unlike with respect to squabbling between the DOJ and FTC, it is not obvious that differences of opinion between federal and state officials diminish the prestige or influence of antitrust enforcement. The states should be expected to have different objectives, perspectives, ideological commitments, and political priorities than the federal government. The problem is more logistical in nature. Case prosecution is a core executive function (alas for the FTC, which isn't supposed to be an executive agency!), and it is not ideal to have too many executives in charge of any function. Effective executive management requires flexibility, decisiveness, consistency, and the ability to bargain credibly with the defendant. All of these virtues are in short supply when too many law enforcers have a say in case management and resolution.

C. Public and Private Enforcement: Substitutes or Complements?

This chapter is focused on public enforcement of the antitrust laws rather than private enforcement. As noted at the outset, in the United States there are many more private cases than public ones, and there are many structural issues with private enforcement—from standing rules to class certification—in dire need of addressing. Private enforcement can also have significant effects on public enforcement, sometimes weakening the government's ability to bring antitrust cases.

Here is how that happens. Putting aside the FTC's enforcement of Section 5 of the

⁵⁰ Lauren Feiner, *T-Mobile/Sprint Merger Ruling Will Make It Harder for States To Challenge Future Deals, DOJ Antitrust Chief Says*, CNBC (Feb. 19, 2020), <https://www.cnbc.com/2020/02/19/makan-delrahim-t-mobilesprint-ruling-sets-high-bar-for-state-challenges.html>

FTC Act (discussed below), public and private enforcers sue under the same statutes. Courts interpret and apply the same statutory texts whether the plaintiff is the Justice Department or a private litigant. Since the courts see many more private cases than public ones, many of the legal standards are formulated in private cases. Rightly or wrongly, in recent decades judges have come to look at private antitrust cases with some degree of suspicion. They have expressed concerns about such things as the chilling effect of the treble damages remedy, opportunistic plaintiffs motivated by anticompetitive interests, and the inability of lay juries to tackle complex economic matters. Drawing on these concerns, the courts have increasingly formulated antitrust law to protect defendants from antitrust theories perceived to be weak or subject to abuse. Since the same legal principles should apply to a government case, the government often finds itself hamstrung when bringing a case on the same legal theory, even though these concerns about private litigation abuse have less evident relevance to actions by the government.

Consider predatory pricing law, for example. During the 1980s and '90s, in a series of private cases, the federal courts sharply constricted the right of action for predatory pricing.⁵¹ The courts justified restrictive predation liability rules by claiming that opportunistic private plaintiffs could chill rivals' aggressive pricing by bringing predatory pricing lawsuits for treble damages.⁵² During the years that the courts were developing these restrictive liability norms, neither the FTC nor the Department of Justice brought any predatory pricing lawsuits. The liability rules were created with the institutional limitations of private litigation in mind. Then, in 1999, the Justice Department brought its first predatory pricing lawsuit in decades, against American Airlines.⁵³ The government lost the case on summary judgment in the district court and

⁵¹ See generally Daniel A. Crane, *The Paradox of Predatory Pricing*, 91 CORNELL L. REV. 1, 3 (2005).

⁵² *Id.*

⁵³ U.S. v. AMR Corp., 335 F.3d 1109 (10th Cir. 2003).

then again in Tenth Circuit, largely because the courts applied off-the-rack predatory pricing liability rules designed to avoid abusive private litigation.⁵⁴ If the law of predatory pricing had developed with the institutional parameters of public enforcement in mind, it is doubtful that the resulting liability rules would have been so deferential to pricing decisions by dominant firms. In any event, neither the FTC nor Justice Department has brought a predatory pricing case since *American Airlines*.

Whether or not the government should be bringing more predatory pricing cases, it does not make much sense for it to be bound by legal doctrines that were created in private lawsuits subject to very different institutional constraints. Almost nowhere else in the world does this occur, because public enforcement predominates and private enforcement, if it exists, usually follows public enforcement. The American system of heavy reliance on private antitrust enforcement to vindicate the public interest in competition may have its benefits, but it does have a deleterious effect on public enforcement.

III. PROPOSALS FOR REFORM

A. Ending or Curtailing Dual Federal Enforcement

It is difficult to imagine that any country designing an antitrust system from scratch would choose to follow the U.S. model and create an executive division accountable to the President and an independent agency accountable to Congress with functionally identical mandates to enforce the antitrust laws. The system we have is not the one Congress thought it was designing, nor one that anyone would design. That said, it is not obvious that trying to change the system to comply with the Congressional design

⁵⁴ For example, the Tenth Circuit relied on earlier precedent from predatory pricing cases that justified underinclusive liability norms because of the high costs of false positives. 335 F.3d at 1114. Such concerns are far greater in private actions for treble damages than in injunctive actions by the government seeking to interdict future misbehavior.

or re-designing it altogether would be desirable. There could be significant losses of institutional capacity, political checks and balances, and enforcement efficiency if one or both agencies were significantly overhauled or eliminated.

In 2007, the bipartisan, congressionally appointed Antitrust Modernization Commission released an evaluative report on the entire gambit of modern antitrust law.⁵⁵ Among other things, the twelve members of the Commission considered whether dual federal enforcement should continue. Three of the twelve—including two former heads of the Antitrust Division—voted to recommend abolishing the FTC’s antitrust enforcement authority and vesting responsibility for all antitrust enforcement with the Justice Department.⁵⁶ But the majority recommended retaining the dual-enforcement structure. With the benefit of nearly one hundred years of dual-agency history, the commissioners were realistic in their assessment of the agencies’ performance. They admitted that the two agencies did not provide counter-cyclical checks on each other—no, the two agencies “typically have worked together to develop similar, if not identical, approaches to substantive antitrust policy.”⁵⁷ The commissioners made clear the real justification for continuing with dual enforcement: “Although concentrating enforcement authority in a single agency generally would be a superior institutional structure, the significant costs and disruption of moving to a single-agency system at this point in time would likely exceed the benefits.”⁵⁸ The commissioners noted further practical difficulties with such a switch: “there is no consensus as to which agency would preferably retain antitrust enforcement authority,” and any such move “would likely be politically very

⁵⁵ DEBORAH A. GARZA ET AL., ANTITRUST MODERNIZATION COMMISSION, REPORT AND RECOMMENDATIONS, (Apr. 2007), https://govinfo.library.unt.edu/amc/report_recommendation/amc_final_report.pdf

⁵⁶ *Id.* at 129 (footnote).

⁵⁷ *Id.* at 129.

⁵⁸ *Id.* at 129–30.

difficult.”⁵⁹

But, more recently, there have been renewed calls to overhaul the agencies, some with the goal of expanding the number of agencies with antitrust authority and others with the goal of reducing or streamlining them. On the expansive side, Professor Fiona Scott Morton has proposed creating a new Digital Authority to enforce privacy laws, protect digital identities and consumer data from being monopolized by private firms with market power, and create baseline conditions conducive to competition in digital marketplaces.⁶⁰ Professor Scott Morton argues that creating a new agency is necessary because the existing agencies lack the statutory rule-making powers to regulate digital businesses and because they lack the necessary expertise. But even crediting her assumptions, it is not clear why such powers should be given to a brand-new agency rather than added to the portfolio of an existing agency. The history of the Antitrust Division and FTC stepping on each other’s toes does not encourage the thought of adding yet a third federal antitrust agency.⁶¹

By contrast, on the streamlining side, Senator Josh Hawley has unveiled a plan to roll the FTC into the DOJ.⁶² Under his plan, the FTC would be headed by a single Director (like the FBI), instead of a multi-member commission. The Director would report to the Associate Attorney General. The FTC would gain new market analysis authority to direct its enforcement, assist the Antitrust Division, and inform Congress. It would lose all authority to review mergers and acquisitions to the Antitrust Division.⁶³

⁵⁹ *Id.* at 130.

⁶⁰ Fiona M. Scott Morton, *Reforming U.S. Antitrust Enforcement and Competition Policy*, <https://equitablegrowth.org/wp-content/uploads/2020/02/Scott-Morton.pdf>.

⁶¹ For further discussion on the merits of a new enforcement agency, see Neil Chilson, *Does Big Tech Need its Own Regulator?*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁶² Senator Hawley, *Senator Hawley Proposes to Overhaul the Federal Trade Commission*, (Feb. 10, 2020), <https://www.hawley.senate.gov/senator-hawley-proposes-overhaul-federal-trade-commission>.

⁶³ Senator Hawley has also proposed a series of substantive reforms on data portability, interoperability, and minimization.

Senator Hawley's plan would align the FTC more closely with the Congress' original design by making it more a research, analysis, and market study agency supporting the Justice Department than a stand-alone law enforcer, but it is not obvious what advantage this would bring over simply eliminating the FTC's antitrust authority and rolling all antitrust authority in the Justice Department, as endorsed by three of the twelve members of the AMC in 2007. In my view, that remains the most sensible proposal, although it would be challenging politically. To be clear, transferring all antitrust jurisdiction to the Justice Department would not eliminate the FTC as an agency. The FTC already spends more of its budget on consumer protection matters than on antitrust matters, and its consumer protection work would continue, perhaps fortified. There is a good case to be made that eliminating the FTC's original mandate—antitrust—and asking it to focus single-mindedly on the consumer protection role that Congress added in 1938 would strengthen consumer protection and also strengthen antitrust enforcement by consolidating it under a single roof.

B. Aligning the Capacities and Constraints of the Federal Agencies

If the FTC and DOJ are to continue in their current course of doing effectively the same job, the question arises as to whether the two agencies should operate with the same tools at their disposal and subject to the same constraints. While the two agencies already share many of the same tools and constraints, there are some important differences that merit reconsideration.

One important set of differences concerns the FTC's ability to sit as an adjudicatory body. As noted earlier, in antitrust cases the FTC has increasingly chosen to proceed as a litigant in court rather than trying cases administratively. Part of the reason for this is that the Commission's adjudicatory system is poorly designed. When the Commission staff choose to seek an administrative complaint, the first step is to obtain approval by a vote of the Commission. This puts the Commission itself in the prosecutorial position of

deciding whether or not a complaint has merit and should be pursued. Once the Commission votes out a complaint, it is heard before an administrative law judge (“ALJ”), with the Commission staff acting as prosecutors. The ALJ decision is then reviewed by the Commission itself, which now sits as an appellate adjudicatory body on the very complaint on which it previously acted as a prosecutor. Not surprising, the Commission rarely overrides its own staff on the complaints it previously authorized. A study by Doug Melamed found that, between 1983 and 2008, the staff won all sixteen antitrust cases adjudicated before an administrative law judge on review by the Commission.⁶⁴

If this system seems unfairly to mingle prosecutorial and adjudicatory functions, that does not necessarily translate into a large litigation advantage to the Commission. There is appellate review from Commission decisions, and here defendants have some odd advantages of their own. The FTC Act’s appellate review provision allows a defendant to lodge an appeal from an adverse FTC decision “within any circuit where the method of competition or the act or practice in question was used or where such person, partnership, or corporation resides or carries on business.”⁶⁵ Unlike the appellate provision applicable to almost any other federal agency, this provision effectively allows most defendants to pick any of the twelve federal circuits for their appeal and thereby to forum shop for the circuit whose precedents or ideological composition are most favorable to the defendant. In order to avoid facing a potentially hostile circuit chosen by the defendant, the FTC has sometimes decided to sue in federal district court rather than try a case administratively, thus frustrating Congress’s design for agency adjudication.

⁶⁴ A. Douglas Melamed, *The Wisdom of Using the “Unfair Method of Competition” Prong of Section 5*, GLOBAL COMPETITION POL’Y, Nov. 2008, at 1, 16-17. The study Melamed cites found that the respondents won four of the sixteen cases before the administrative law judge, but then lost those cases before the Commission. *Id.* at 17.

⁶⁵ 15 U.S.C. § 45(c).

The FTC still wins the majority of its cases in the appellate courts—about 72% of them—but that is considerably lower than the 93% of cases it wins on appeal when squarely acting as a prosecutor in actions originated in federal district court.⁶⁶ The advantages that the Commission obtains in-house through the questionable commingling of prosecutorial and adjudicatory functions dissipate on appeal with the equally questionable power of defendants to engage in appellate forum shopping.

What's to be done about this? One possibility is to structurally separate the Commission's prosecutorial and adjudicatory functions. For example, Terry Calvani and Angela Diveley have suggested vesting the prosecutorial function in an FTC Director of Enforcement appointed by, and serving at the pleasure of, the President,⁶⁷ with the five-member Commission retaining its adjudicatory functions. Such a reform might be paired with a reform to the procedures for selecting the appellate circuit, for example by amending the statute to provide either for an exclusive appellate forum for all FTC cases (for example, the D.C. Circuit, which generally hears appeals from FCC decisions) or designating a particular circuit dependent on the defendant's status (for example, that of the defendant's principal place of business).

A related issue concerns the standard for obtaining a preliminary injunction standard for blocking mergers for the two agencies. There has been "some ambiguity" in the case law as to how the preliminary injunction standard in FTC Part III (administrative) cases should be applied,⁶⁸ and some suggestion that the FTC can prevail in obtaining a preliminary injunction with a lesser degree of proof of likely

⁶⁶ Crane, *supra* note 12, at 1866.

⁶⁷ Terry Calvani & Angela M. Diveley, *The FTC at 100: A Modest Proposal for Change*, 21 GEO. MASON L. REV. 1169 (2014).

⁶⁸ See *FTC v. Whole Foods Market, Inc.*, 548 F.3d 1028, 1034-35 (D.C. Cir. 2008) (holding that to obtain a preliminary injunction, the FTC need not show any irreparable harm, and the private equities alone cannot override the FTC's showing of likelihood of success).

anticompetitive effects than the DOJ would have to show if it were the plaintiff.⁶⁹ Given the time sensitivity of most mergers, the grant of a preliminary injunction is often the merger's death knell. As a practical matter, this means that merging parties face an agency with a stronger or weaker hand in blocking a merger based on the happenstance of which agency takes the case. This is an arbitrary way to run the system. The preliminary injunction standards for the two agencies should be aligned, as was proposed in the Standard Merger and Acquisition Reviews through Equal Rules Act of 2017.⁷⁰

A second difference between the FTC and Justice Department concerns the substantive standards applicable to the two agencies. In non-merger cases, the Justice Department enforces the Sherman Act, whereas the FTC enforces Section 5 of the FTC Act, which prohibits "unfair methods of competition." The Supreme Court has long recognized that Section 5 includes all conduct that is unlawful under the Sherman Act.⁷¹ But it has also held that the FTC may go further than the Sherman Act and "stop in their incipency acts and practices which, when full blown, would violate those Acts."⁷² Thus, "the standard of unfairness under the FTC Act . . . encompass[es] not only practices that violate the Sherman Act and the other antitrust laws . . . but also practices that the Commission determines are against public policy for other reasons."⁷³

Although this seems to give the FTC a considerable substantive advantage over the Justice Department, for most of the FTC's history, things have not worked out that way. During the 1970s and 80s, the Commission attempted to bring stand-alone Section

⁶⁹ *Id.* at 1035 ("[T]he FTC will usually be able to obtain a preliminary injunction blocking a merger by 'rais[ing] questions going to the merits so serious, substantial, difficult[,], and doubtful as to make them fair ground for thorough investigation.'") (citations omitted).

⁷⁰ H.R. Rep. No. 115-412, at 3 (2017), <https://www.congress.gov/115/crpt/hrpt412/CRPT-115hrpt412.pdf>.

⁷¹ *See* *FTC v. Cement Inst.*, 333 U.S. 683, 694 (1948).

⁷² *FTC v. Brown Shoe Co.*, 348 U.S. 316, 322 (1966).

⁷³ *FTC v. Indiana Federation of Dentists*, 476 U.S. 447, 454 (1986).

5 cases on theories that might not have been cognizable under the Sherman Act, but the courts rejected these attempts. As former Chairman Bill Kovacic has remarked, it is difficult to find even ten successfully litigated Section 5 antitrust cases over the Commission's nearly hundred-year history.⁷⁴ In consequence, in recent decades the FTC has largely fallen back on Sherman Act theories, and Section 5 has become functionally identical to Sections 1 and 2 of the Sherman Act.

Within the last decade, there has been a revival of interest in the FTC asserting stand-alone unfair methods of competition cases, and the Commission has taken modest steps in that direction on a few occasions. In 2013, the Commission issued a Statement of Principles Regarding Enforcement of the FTC Act as a Competition Statute, which essentially committed the Commission to employing rule of reason treatment and applying the consumer welfare standard in Section 5 cases.⁷⁵ Still, the question remains as to why the FTC should enjoy a substantive advantage over the Justice Department at all. As discussed in the final section below, it makes sense for public enforcers to have wider substantive powers than private litigants, but there is no good reason for one federal agency to have wider substantive powers than the other, particularly given that they divide enforcement turf by industry rather than on any basis in their respective institutional structures.

C. Making Federal Enforcement Supreme

The question of state attorney general involvement in national antitrust cases where the Justice Department is also involved raises complex questions of federalism and political economy. On the one hand, the states may bring valuable resources and

⁷⁴ *Id.* at 10.

⁷⁵ Press Release, Fed. Trade Comm'n., FTC Issues Statement of Principles Regarding Enforcement of FTC Act as a Competition Statute, (Aug. 13, 2015), <https://www.ftc.gov/news-events/press-releases/2015/08/ftc-issues-statement-principles-regarding-enforcement-ftc-act>.

perspectives to federal enforcement activities. They may also provide a needed nudge when the Justice Department has become too reticent to sue for political or ideological reasons. And it is democratically healthy for the states to listen to their own citizens and bring their unique perspectives to competition issues. On the other hand, too many cooks spoil the broth. Although proponents of stronger antitrust enforcement sometimes assume that empowering more antitrust enforcers means stronger enforcement, that does not necessarily follow. Multiple enforcers can get in any other's way, send mixed messages to the courts and the parties, and prevent effective resolution of matters.

Judge Posner's previously discussed suggestion of giving the Justice Department a right of first refusal to bring an antitrust case—or to permit participation by the states if it does—seems sensible. If the Justice Department does not believe that a case is merited, the states would still be free to file one anyway. In cases that the Justice Department does pursue, the right of first refusal would give the Justice Department the power to steer the prosecutorial ship, including negotiating a settlement, without interference from alternative prosecutors.

D. Private Enforcement

As previously noted, there are many necessary fixes to the private antitrust litigation system, particularly with respect to standing, class actions, and damages, but those are beyond the scope of this paper. From the perspective of public enforcement, the question is how to structure private enforcement so as to minimize its deleterious spillover effects on public enforcement. Reviving an independent FTC Act Section 5 would be one way, but, as previously noted, that approach has the disadvantage of arbitrarily putting the FTC in a stronger substantive position relative to the Justice Department. If some of the proposals to restructure the agencies were adopted—for example, rolling the FTC into the DOJ or eliminating the FTC's antitrust enforcement altogether—that might effectively eliminate Section 5 as a distinctive substantive

prohibition and leave public enforcers on entirely the same substantive footing as private enforcers.

Alternatively, a Congress interested in a bold substantive reform could give the Justice Department the power to enforce a provision like Section 5. So as not to create further discrepancies between the FTC and DOJ, the cleanest way to do this would be to amend Section 5 to state that the FTC has the power to enforce the Sherman Act, and then pass a new antitrust super-statute giving both federal agencies (but not private parties or the states) the power to sue in equity (and not criminally or for damages) to enjoin unfair methods of competition that harm the competitive process. This would put the two agencies on equal footing substantively, unshackle public enforcement from private enforcement, but also provide the courts with a known legal standard on which to predicate judicial review.

CONCLUSION

Despite the idiosyncratic and sometimes counterproductive institutional scheme of federal antitrust enforcement created by failed Congressional design and decades of iterative experimentation, the U.S. antitrust agencies function relatively successfully most of the time. Because of this, the temptation is always to let well enough alone. There are many more pressing needs than major overhauls of the federal antitrust agencies. That said, if there is political will for reforms, there are no shortage of sensible possibilities.

The Economics of Digital Platforms: A Guide for Regulators

*Michael R. Baye and Jeffrey T. Prince**

INTRODUCTION

Digital platforms have transformed the way consumers search for information, read books, listen to music and watch video entertainment, shop, and conduct meetings. Populists from both political parties have recently raised concerns about growing trends in concentration, and in particular the “dominance” of digital platforms such as Google, Amazon, Facebook, and Apple. The pecuniary prices that consumers pay for the services provided by some of these platforms are modest or even “free;” consequently, stated concerns tend to focus on consumer harm that is unrelated to pricing.

Anyone reading the popular press is aware of the following sorts of concerns about the dominance of digital platforms:

- Google is a “bullying 800-pound gorilla”¹ and “an unopposed monopoly”² in the market for search engines. The lack of viable competitors means the company can impose whatever terms it wishes on its customers.

* Kelley School of Business, Indiana University. We are grateful to Holly Brueggman, Mariah Idroos, Hyun Ji Joo, and Kevin Wang for research assistance and numerous coauthors and colleagues for valuable insights as well as comments on earlier drafts.

¹ See, e.g., Charles Duhigg, *The Case Against Google*, N.Y. TIMES MAG. (Feb. 20, 2018), <https://www.nytimes.com/2018/02/20/magazine/the-case-against-google.html>.

² Robert Epstein, *To Break Google’s Monopoly on Search, Make Its Index Public*, BLOOMBERG (July 15, 2019), <https://www.bloomberg.com/news/articles/2019-07-15/to-break-google-s-monopoly-on-search-make-its-index-public> (“Google is especially worrisome because it has maintained an unopposed monopoly on search worldwide for nearly a decade. It controls 92 percent of search, with the next largest competitor, Microsoft’s Bing, drawing only 2.5%.”).

- Amazon eliminated competitors by “slashing prices and bleeding money,”³ and disadvantages competitors by self-preferencing its own products.⁴
- Google and Facebook are always on the lookout for competitive threats and have engaged in “killer” or “blockbuster” acquisitions to prevent other firms from successfully competing for its customers.⁵
- Amazon exploits data of third-party sellers “to determine what new products it will create;”⁶ Facebook harms consumers by exploiting consumer data and violating data privacy⁷ and “invades users’ privacy” by selling their data to advertisers in exchange for using its platform.⁸

³ Lina Khan, *Amazon’s Antitrust Paradox*, 126 YALE L.J. 710, 770 (2017) (“Through its purchase of Quidsi, Amazon eliminated a leading competitor in the online sale of baby products. Amazon achieved this by slashing prices and bleeding money, losses that its investors have given it a free pass to incur—and that a smaller and newer venture like Quidsi, by contrast, could not maintain.”).

⁴ Eugene Kim, *Amazon Has Been Promoting Its Own Products at the Bottom of Competitors’ Listings*, CNBC (Oct. 2, 2018), <https://www.cnbc.com/2018/10/02/amazon-is-testing-a-new-feature-that-promotes-its-private-label-brands-inside-a-competitors-product-listing.html> (“‘If you’ve got Amazon brands competing against you, it’s just become that much more difficult to be competitive in the marketplace,’ said Jeff Cohen, the marketing chief of Seller Labs, a company that helps sellers advertise on Amazon.”).

⁵ See, e.g., Gilad Edelman, *Why the FTC Wants to Revisit Hundreds of Deals by Big Tech*, WIRED (Feb. 12, 2020), <https://www.wired.com/story/ftc-special-order-review-big-tech-killer-acquisitions/>; Brian Fung, *FTC probing Big Tech’s Past Acquisitions*, CNN (Feb. 11, 2020), <https://www.cnn.com/2020/02/11/tech/ftc-tech-acquisitions/index.html>.

⁶ Annie Palmer, *Amazon Uses Data from Third-Party Sellers To Develop Its Own Products*, WSJ Investigation Finds, CNBC (Apr. 23, 2020), <https://www.cnbc.com/2020/04/23/wsj-amazon-uses-data-from-third-party-sellers-to-develop-its-own-products.html> (“Amazon uses data from its vast network of third-party sellers to determine what new products it will create . . . some Amazon executives had access to seller data that was then used to discover bestselling items they might want to compete against.”).

⁷ See, e.g., Christopher Carbone, *DC Sues Facebook over Cambridge Analytica Privacy Scandal*, FOX NEWS (Dec. 19, 2018), <https://www.foxnews.com/tech/dc-sues-facebook-over-cambridge-analytica-privacy-scandal>; Olivia Solon & Cyrus Farivar, *Mark Zuckerberg Leveraged Facebook User Data to Fight Rivals and Help Friends, Leaked Documents Show*, NBC NEWS (Apr. 16, 2019), <https://www.nbcnews.com/tech/social-media/mark-zuckerberg-leveraged-facebook-user-data-fight-rivals-help-friends-n994706>.

⁸ Len Sherman, *Why Facebook Will Never Change Its Business Model*, FORBES (Apr. 16, 2018), <https://www.forbes.com/sites/lensherman/2018/04/16/why-facebook-will-never-change-its-business-model/#3dfe1a5964a7> (“ . . . the price advertisers are willing to pay Facebook to invade users’ privacy is vastly greater than the price most consumers would be willing to pay Facebook to protect their privacy.”).

- Disney, Apple, Amazon, and Google have positioned themselves to force consumers to purchase a bundle rather than to only buy the product or service they want.⁹
- Content on platforms such as Twitter and Facebook should be regulated to prevent the biased information that stems from their algorithms’ “filter bubbles” or “echo chambers.”¹⁰

This paper contributes to the policy debate by providing an appraisal of the economics underlying assertions like these. Our goal is to provide a balanced look at the economic assumptions that underlie the “possibility theorems” policymakers might use to rationalize different policies (e.g., regulation, breaking up large companies, subsidizing entry, forced data sharing, or maintaining the status quo). Our discussion highlights the type of information and analyses required to determine whether alternative forms of intervention are likely to enhance or reduce the welfare of various market participants. While it is relatively easy to identify theoretical conditions under which intervention dominates the status quo (and vice versa), empirical verification is difficult because multi-sided platforms have many interrelated parts and involve complex data. Additionally, some forms of “empirical evidence” (e.g., evidence regarding market shares or firm size) are more vulnerable to false-positives than other

⁹ See, e.g., Tara Lachapell, *For Streamers, the Great Unbundling Was Too Good to Be True*, WASH. POST (Nov. 13, 2019), https://www.washingtonpost.com/business/for-streamers-the-great-unbundling-was-too-good-to-betrue/2019/11/13/9bd6bd82-0615-11ea-9118-25d6bd37dfb1_story.html; Jacob Kastrenakes & Nilay Patel, *Google Will Start Charging Android Device Makers a Fee for Using Its Apps in Europe*, THE VERGE (Oct. 16, 2018), <https://www.theverge.com/2018/10/16/17984074/google-eu-android-licensing-bundle-chrome-search/>; Annie Palmer, *Apple Reportedly Planning a Bundled Digital Media Subscription Plan Launching as Soon as Next Year*, CNBC (Nov. 14, 2019), <https://www.cnbc.com/2019/11/14/apple-said-to-plan-bundled-services-subscription-plan-for-2020.html>.

¹⁰ Jonathan Wareham, *Should Social Media Platforms Be Regulated?*, FORBES (Feb. 10, 2020), <https://www.forbes.com/sites/esade/2020/02/10/should-social-media-platforms-be-regulated/#249bcfb93370>.

evidence (e.g., competitive effects analysis).¹¹ These complexities augment the challenges inherent in implementing welfare-enhancing policies and highlight the importance of careful, evidence-based decision-making.

I. EVIDENCE COMMONLY USED TO SHOW THAT A DIGITAL PLATFORM HAS SUFFICIENT POWER TO SIGNIFICANTLY HARM CONSUMERS OR COMPETITION

As with other markets, one might worry that a digital platform possesses and wields market power that significantly harms consumers or competition. Before discussing the evidence required to determine if this is the case, we discuss two key concepts: market power and market definition.

Market power is the ability of a firm to price above marginal cost (or alternatively, sustain a price in excess of the competitive level).¹² This notion readily captures market power related to factors other than price (e.g., quality or privacy). In these cases, market power is the ability to impose a *shadow* price in excess of marginal cost. Conceptually, a shadow price is the amount consumers would pay for a marginal improvement in a non-price attribute of a good or service.¹³ By way of example, the shadow price of the quality of some service—say an internet search—is the amount consumers would pay for a marginal improvement in search quality. A firm is said to exercise market power with respect to quality when the shadow price of its chosen quality exceeds the marginal cost

¹¹ To mitigate false-positives, competitive effects analysis must control for benign factors (or spurious correlations in the data unrelated to antitrust concerns) that might influence prices. For numerous examples of correlations in data which (when interpreted as causal) result in laughable conclusions, see TYLER VIGEN, *SPURIOUS CORRELATIONS* (2015).

¹² While the vast majority of businesses (including Mom and Pop retailers) possess market power in this economic sense, market power is not sufficient for monopoly power under the law. *See, e.g.,* Benjamin Klein & John Shepard Wiley, Jr., *Market Power in Economics and in Antitrust: Reply to Baker*, 70 *ANTITRUST L.J.* 655 (2003).

¹³ Formally, a shadow price is the Lagrange multiplier associated with a constraint that limits a consumer's ability to maximize utility; that is, it measures the increase in value as the quantity of the (non-price) attribute changes. *See* Michael D. Intriligator, *Mathematical Programming with Applications to Economics*, in *HANDBOOK OF MATHEMATICAL ECONOMICS* 21 (Kenneth J. Arrow & Michael D. Intriligator eds. 1981).

of quality. In other words, market power permits the firm to reduce quality (resulting in a higher shadow price), analogous to it restricting output and charging a higher product price.¹⁴ The harm stems from the fact that consumers are willing to pay more than the cost of added quality, but the firm does not provide it.

Defining a relevant market is obviously necessary for calculating shares to quantify “market concentration;” the same is true when the term “dominant firm” is used to convey that a firm is “large” compared to the competition. Market definition may also be helpful in establishing where a firm might possess “economic power” and to ensure that competitive effects analysis focuses on the specific market where antitrust harm may arise.¹⁵ For purposes of this report, we simply note that a key consideration in defining a relevant market—or determining whether a firm is exercising market power—is the extent to which consumers can substitute toward other products in response to price increases.¹⁶ By way of example, a platform may be “dominant” on the consumer side of a two-sided market, yet not wield market power on the advertising side of the market; there may be relatively poor substitutes for searches on Google, but advertisers may have

¹⁴ An OECD filing on the non-price effects of mergers cites the U.S. Department of Justice’s Horizontal Merger Guidelines to affirm that: “[A] firm could, sometimes, instead reduce the quality (or the average fit of attributes to customer preferences), which can sometimes be thought of as an increase in the ‘quality-adjusted price.’” OECD, NON-PRICE EFFECTS OF MERGERS – NOTE BY THE UNITED STATES (May 30, 2018), https://www.ftc.gov/system/files/attachments/us-submissions-oecd-2010-present-other-international-competition-fora/non-price_effects_united_states.pdf.

¹⁵ As the courts have recognized, such an analysis “requires inquiry into the relevant product and geographic market and the defendant’s economic power in that market.” *Spectrum Sports, Inc. v. McQuillan*, 506 U.S. 447, 459 (1993).

¹⁶ We acknowledge that this can be difficult in cases involving monopolization (owing to, among other things, the Cellophane fallacy. *See* HERBERT HOVENKAMP, *FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE* 104–08 (3d ed. 2005). In the case of horizontal mergers, a relevant market is defined as a set of products such that an unfettered hypothetical profit-maximizing firm that was the only present and future seller of those products could impose at least a small but significant and non-transitory increase in price (“SSNIP”) relative to the competitive level. *See* Section 4 of the Horizontal Merger Guidelines for nuances and details in the context of horizontal mergers. U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, *HORIZONTAL MERGER GUIDELINES* 7–15 (Aug. 19, 2010), <https://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf>.

a plethora of substitutes to advertising on Google’s platform. Henceforth, we simply assume a relevant market has been properly defined to include relevant substitutes.

With this overview, we now turn to evidence that is often cited to support an opinion that a platform has sufficient power to significantly harm consumers or competition.

A. Popular Evidence

1. The Platform is “Big”

Arguably the primary evidence that is cited to support claims that Google and other large technology platforms have sufficient power to harm consumers or competition is that they are “too big.”¹⁷ As an initial matter, we note that concerns regarding the *absolute size* of firms predate the existence of the digital platforms at issue in the current policy debate. Shortly before the Reagan Revolution, for instance, former FTC chairman Michael Pertschuck unsuccessfully advocated using antitrust policies to prevent firms from becoming large through conglomerate mergers. The primary arguments advanced in favor of limiting firm size are protecting: (a) the balance of political power and (b) the corporation’s responsiveness to social needs.¹⁸ To the best of our knowledge, there is little economic evidence that the absolute size of firms *per se* benefits or harms consumers or competition.¹⁹ Regardless, the inability to identify the threshold beyond which the absolute size of a firm becomes problematic, or measure the associated harms of this nature, significantly limits one’s ability to gather scientific

¹⁷ A Google search of “Is Google too big” on September 27, 2020 returned over 4.3 billion results. *Is Google Too Big*, GOOGLE.COM. (last accessed Sept. 27, 2020).

¹⁸ Michael Pertschuck & Kenneth M. Davidson, *What’s Wrong with Conglomerate Mergers?*, 48 FORDHAM L. REV. 1 (1979).

¹⁹ This is not to say that the absolute size of a firm is irrelevant; as discussed below, absolute size can impact the structure of a market when (owing to network effects), a firm that attains a critical mass of consumers may “tip” the market.

evidence to support or refute such a proposal.

The most common evidence gathered concerns the *relative size* of a firm. Evidence commonly cited as indicative of a platform's market power or consumer harm is its dominance *per se*. Typical examples include Google for search, Facebook for social networking, and Comcast for cable services. The rationale for considering this evidence has its roots in the so-called "Structure-Conduct-Performance" paradigm, which postulates that structural elements of an industry (e.g., firm size or concentration) dictate firm conduct (e.g., pricing decisions) which in turn determines economic performance (e.g., consumer welfare or firm profits).²⁰ While it is now widely understood that there is not a one-way causal link between market structure and performance, in specialized circumstances economic theory does indicate that concentration may lead to inefficient resource allocations. Ultimately, whether "bigness" or concentration harms consumers or competition is an empirical rather than theoretical question. The following are a few examples of lines of reasoning that may lead to a concern that concentration is bad for consumers and social welfare.

A standard story would be that, say, Comcast has market dominance in providing cable services; in Nashua, New Hampshire, for instance, Comcast is the sole cable provider.²¹ It is of course an empirical question whether satellite TV (e.g., Dish, DirecTV) or over-the-top internet streaming (e.g., Netflix, Hulu) are sufficiently close substitutes to be in the relevant market. Classic concerns might include Comcast's ability to: (a) charge super-competitive prices, (b) bundle services in an attempt to force consumers to buy services they don't want, (c) shirk on customer service, and/or (d) lag on innovation.

Similar concerns can arise when consumers pay no pecuniary price to use a

²⁰ See MICHAEL R. BAYE & JEFFREY T. PRINCE, *MANAGERIAL ECONOMICS AND BUSINESS STRATEGY* 219–21 (9th ed. 2017); Richard Schmalensee, *The New Industrial Organization and the Economic Analysis of Modern Markets*, in *ADVANCES IN ECONOMIC THEORY* 253–85 (Werner Hildenbrand ed., 1982).

²¹ See *FAQs*, CITY OF NASHUA, <https://www.nashuanh.gov/Faq.aspx?QID=261> (last accessed Sept. 27, 2020).

platform (e.g., conducting a search on Google or viewing a post on Facebook). In this case, one might worry that market dominance (or the absence of competition) results in lower quality (non-price attributes of the platform), or more generally, raises the shadow prices that consumers implicitly pay to use the platform's services. Assuming that searches on Bing or other platforms are poor substitutes for Google searches, for instance, one might worry that Google's dominance in consumer search permits it to charge super-competitive shadow prices.²² Conceptually this might materialize as: (a) poor search results, (b) steering consumers to unwanted links to the platform's own products or services (self-preferencing), (c) inadequate privacy protection and/or security, or (d) the platform reselling user data without consent.

Evidence that a platform is "too big," of course, requires a measure of what it means to be "big." A standard approach is to calculate market shares based on the definition of the relevant market. While it might seem simple to provide evidence that a firm is too large relative to the market, such calculations can be misleading for two-sided platforms. For example, the absence of pecuniary prices on one side of the market may distort shares based on revenues. Likewise, shares based on a conglomerate firm's total revenues or units sold can distort the actual importance of the platform in a specific market. Finally, care must be taken to avoid using market shares on one side of a two-sided market to infer dominance on the other side of the market. For example, the fact that Google may be dominant in consumer search or that Facebook may be a dominant social networking platform does not imply that either firm is dominant in an appropriately defined market for advertising.

²² Note that, in our earlier example, Comcast's inferior customer service is essentially a higher shadow price for customer service. This higher shadow price is on top of the higher pecuniary price that it may charge as a result of its market dominance.

2. Consumers Have No Other Options

Another related piece of evidence commonly cited in support of the proposition that digital platforms have sufficient economic power to harm consumers is a lack of alternatives for their products or services. In this case, the evidence is not based directly on the absolute or relative size of the platform, but instead on evidence of a lack of close substitutes. Obviously, the absence of such substitutes might harm consumers by permitting firms to charge high pecuniary prices and/or high shadow prices by skimping on non-price attributes that consumers value. Notice that this approach supplants thorny issues related to defining the absolute or relative size of a firm with an assessment of evidence regarding the availability of substitutes that constrain the platform's prices (pecuniary or otherwise).

3. Other Popular Evidence

Owing to difficulties in accurately measuring the absolute or relative size of firms, as well as challenges in identifying the full set of relevant substitutes, it is sometimes popular to use other metrics as proxies. For example, one might provide evidence that digital companies are engaging in too many acquisitions.²³ The ramifications of such

²³ See, e.g., Angus Loten, *Large Tech Companies Prepare for Acquisition Spree*, WALL ST. J. (May 21, 2020), <https://www.wsj.com/articles/large-tech-companies-prepare-for-acquisition-spree-11590053401>. Multiple other Reports have made similar points to this. DIGITAL COMPETITION EXPERT PANEL, UNLOCKING DIGITAL COMPETITION: REPORT OF THE DIGITAL COMPETITION EXPERT PANEL 40 (2019), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf, ("The large digital companies have also used acquisitions to develop strong ecosystems across multiple layers of value chains in order to cement their position in their main market."); AUSTRALIAN COMPETITION & CONSUMER COMMISSION, DIGITAL PLATFORMS INQUIRY: FINAL REPORT 74-76 (2019), <https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf> (noting a "series of acquisitions has served to entrench Google's position in search services and search advertising, particularly by providing it with advantages of scope and by reducing competition."); DIRECTORATE-GENERAL FOR COMPETITION, EUR. COMM'N, COMPETITION POLICY FOR THE DIGITAL ERA 110 (2019), <https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf>, ("The largest digital firms have intensively engaged in mergers and acquisitions over the last decade, and many observers have voiced concerns at this trend.").

evidence depend upon the nature of the acquisitions (e.g., horizontal, vertical, or conglomerate). Horizontal acquisitions may harm consumers by eliminating competition (substitutes). Vertical acquisitions may permit a firm to foreclose competition, again to the detriment of consumers. As noted earlier, some argue that conglomerate mergers may adversely impact the balance of political power or a firm's responsiveness to social needs.

Evidence sometimes focuses on data as the relevant market, rather than internet searches, advertising, or online commerce. If there is evidence that a firm's absolute or relative share of a putative data market is large, or that there are no close substitutes for a platform's data, all of the concerns discussed above may apply with respect to a firm's large data repository. Ultimately, the ability of a firm to wield power in a data market may raise pecuniary and/or shadow prices for a potentially unlimited number of product and service markets. A common illustration of this concern centers on Amazon, which has large data stores regarding online purchases and consumer preferences, and it could, in theory, leverage such data to its advantage for other products and services (e.g., healthcare, video entertainment, etc.). For example, one theoretical possibility is that a platform might use data it acquires on consumer preferences to permit it (or its advertisers) to extract additional surplus from its customers through price discrimination.²⁴

Finally, in instances where the evidence may not indicate that a firm has already achieved some form of dominance, there may be an indication that a platform is attempting to tip the market—or more loosely put, a feeling that “consumer harm is just around the corner.” This may include evidence that the platform is growing “too fast” as a result of strong network effects, consumer lock-in, switching costs, etc.²⁵

²⁴ See, e.g., Alessandro Acquisti & Hal R. Varian, *Conditioning Prices on Purchase History*, 24 MARKETING SCI. 367 (2005).

²⁵ For further discussion of network effects, tipping, and lock-in, see John M. Yun, *Overview of Network Effects & Platforms in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

B. Economic Evidence

While there are conditions under which the aforementioned evidence is consistent with consumer harm, these factors are insufficient to conclude that consumers are actually being (or will be) harmed. For instance, in the case of a highly concentrated market where firms compete on prices and sell similar products, competitive pricing may arise even if only two firms dominate the market.²⁶ More generally, it is well known that there are many “possibility theorems” indicating that a given business practice might benefit or harm consumers.²⁷ Consumers are not well-served by policies rooted merely in “possibility theorems;” such theorems can be used to rationalize almost any policy decision. Instead, sound public policy must be rooted in science-based empirical analyses that account for interrelations among different customers’ demands for the many different products and services provided by large platforms, as well as additional complexities related to multi-product costs and network effects. We discuss this economic approach below.

1. Examination of Pecuniary Prices

Platforms such as Amazon and Apple charge positive prices for most of their products and services, so standard approaches for analyzing antitrust harm may readily be employed. By way of example, Figure 1 shows the deadweight loss associated with the exercise of monopoly power. As discussed in more detail below, (a) an initial first step is to empirically link a specific business practice (e.g., a merger, self-preferencing, or tying) to higher pecuniary or shadow prices, and (b) the mere fact that a firm charges a

²⁶ See, e.g., Michael R. Baye & Dan Kovenock, *Bertrand Competition*, in THE NEW PALGRAVE DICTIONARY OF ECONOMICS (Steven N. Durlauf & Lawrence E. Blume eds., 2d ed. 2008).

²⁷ This is true even if one ignores the two-sided nature of markets served by platforms and instead considers vertical concerns (e.g., consumer data is an input used in producing advertising services). See, e.g., Daniel P. O’Brien, *The Antitrust Treatment of Vertical Restraints: Beyond the Possibility Theorems*, in SWEDISH COMPETITION AUTHORITY (KONKURRENSVERKET), THE PROS AND CONS OF VERTICAL RESTRAINTS 40–101 (2008).

price in excess of marginal cost does not indicate that consumers would benefit from intervention.

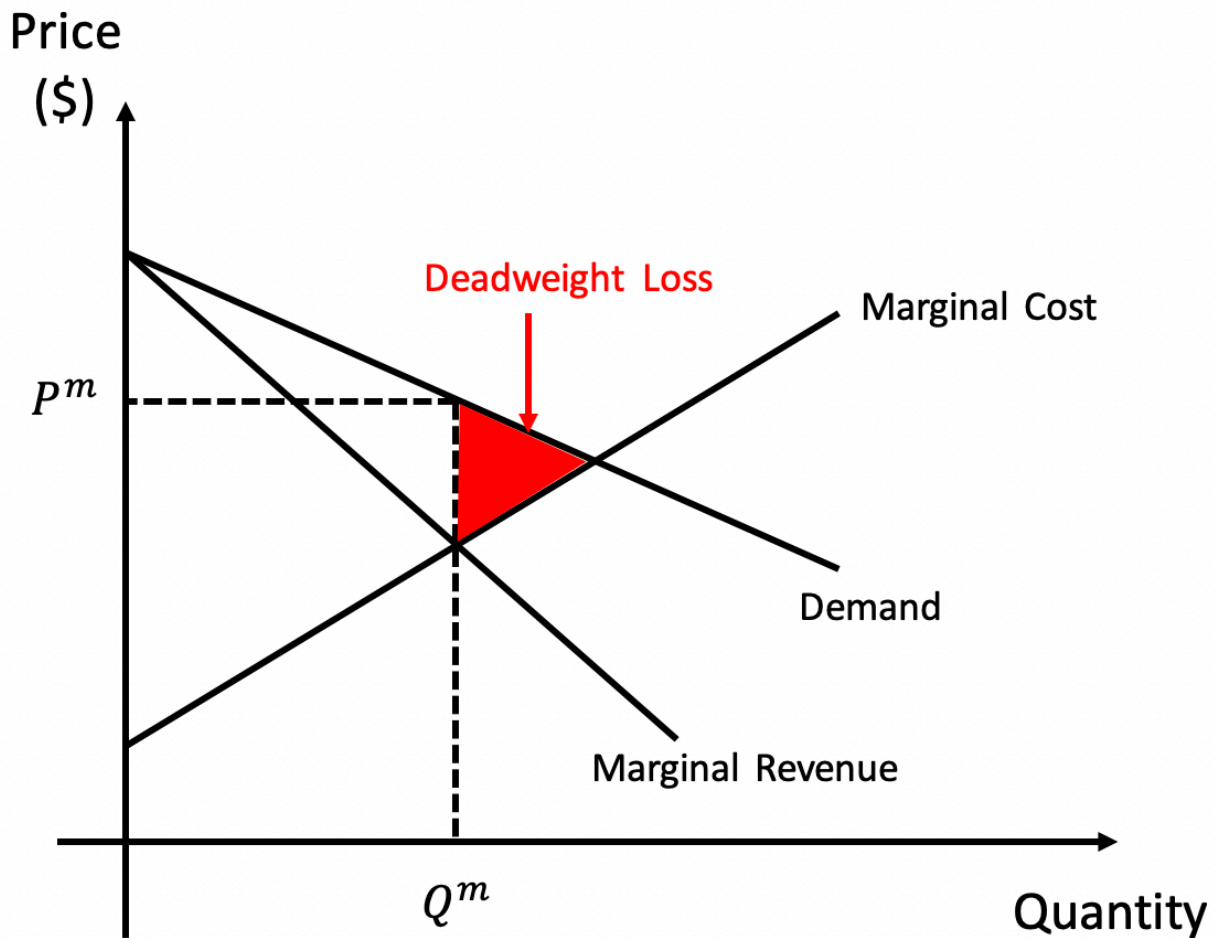


Figure 20

Some platforms (e.g., Google and Facebook) provide some services to consumers free of charge. One might imagine that the marginal cost to Google (or Facebook) when a consumer makes an additional internet search (or post) is essentially zero. Based on the *pecuniary prices* that Google and Facebook charge consumers for these services, one might reasonably conclude that there is no evidence of an exercise of market power; the pecuniary prices for these services are socially efficient—despite each firm’s dominance.

However, we note that these platforms operate in two-sided markets that serve not only consumers but also advertisers. It is possible that the pecuniary prices Google

and Facebook charge advertisers on Madison Avenue and elsewhere exceed competitive levels. It is also possible that Google and Facebook are charging consumers *shadow prices* that exceed relevant marginal costs. Again, empirical examination of these possibilities—and whether other forms of advertising discipline the prices these platforms charge advertisers—would be necessary before reaching such conclusions.²⁸

The next section discusses in more detail issues related to shadow prices; we defer a more detailed discussion of two-sided markets to Section III.

2. Examination of Shadow Prices

Non-price elements of competition can also impact consumer welfare. For example, competition can impact a firm’s incentive to protect sensitive data or to ensure that the platform accounts for consumers’ privacy preferences. Likewise, competition can impact Facebook’s incentive to provide the quality of features desired by consumers; it can also impact Google’s incentives to return quality search results. As discussed below, one can use shadow prices to examine how non-price elements of a firms’ decisions impact consumer welfare.²⁹

To illustrate the use of shadow prices in situations where consumers do not pay a pecuniary price, consider the case of Google Maps. Figure 2 illustrates the hypothetical demand by a consumer for using Google Maps—that is, the consumer’s marginal willingness-to-pay for each additional use of the app. Since the pecuniary price of using Google Maps is zero, this hypothetical consumer uses the app an average of six times per week at that price. The shaded area represents the total surplus (\$4) the consumer receives each week from using the software “for free.” Similar to the case of internet

²⁸ See, e.g., Catherine Tucker, *Competition in the Digital Advertising Market*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

²⁹ There is an extensive economics literature concerning estimation of shadow prices. For an early seminal paper, see James Heckman, *Shadow Prices, Market Wages, and Labor Supply*, 42 ECONOMETRICA 679 (1974).

search, Google’s zero pecuniary price is arguably efficient, given that the marginal cost to Google if the consumer uses the app for an additional trip is likely small. However, a zero pecuniary price is not sustainable in light of Google’s fixed costs of providing and maintaining the service. Google must somehow monetize the value it provides consumers in order to sustain this “free” service. One way of doing so is to require users to give up their location data as “payment” for using the app. This, of course, presumes that the data has economic value to, e.g., advertisers.

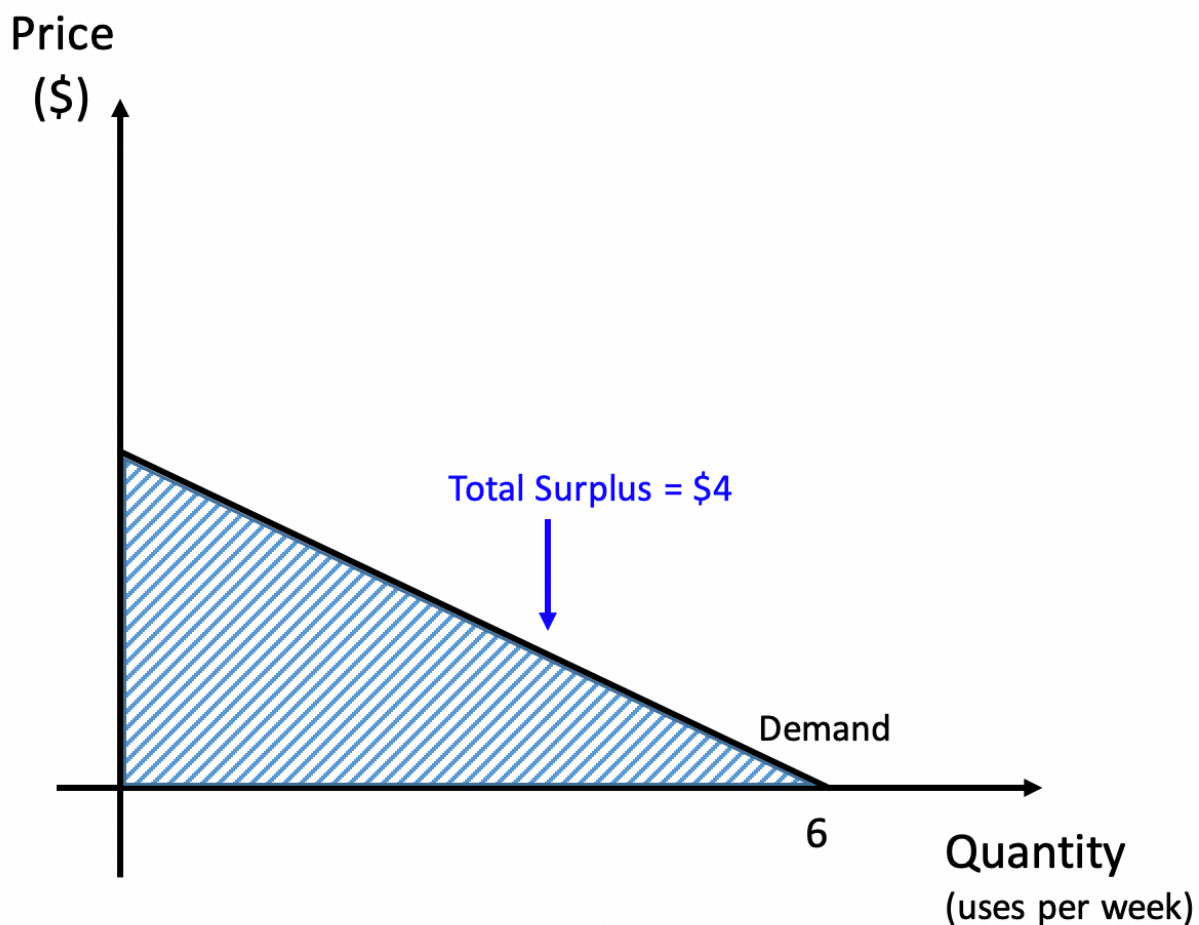


Figure 21

To be concrete, suppose (a) Google requires a user of Google Maps to disclose his or her location data with zero privacy or security protection, and that (b) the consumer’s shadow price of using the app with zero data protection is \$3. In this case, the consumer

will choose to use Google Maps because the total surplus of doing so (\$4) exceeds the shadow price (\$3) of using the app. Notice that the consumer's cost of using Google Maps isn't the zero pecuniary price, but the \$3 shadow price. Nonetheless, despite the absence of any privacy or security protection, this consumer finds it optimal to use Google Maps and is better off as a result of this transaction with Google.³⁰

The fact that this consumer is willing to make the transaction does not mean that the level of privacy or security protection offered by Google is efficient. In this example, starting at zero security, our hypothetical consumer would be willing to pay a shadow price of \$3 to marginally enhance security. Zero security is socially efficient if Google's cost of incrementally enhancing security is \$3 or more; it is socially inefficient if the incremental cost is less than \$3. Thus, an examination of the efficiency of a company's privacy policy requires, *at a minimum*, estimates not only of shadow prices but the costs of providing enhanced security (including potential implicit costs related to quality degradations or inconvenience costs stemming from security enhancements).

In practice, the actual calculus is more complex. We discuss this in more detail later; for now, we simply note that the costs of privacy and data protection typically involve significant fixed costs, and that the benefits of a given investment in data protection typically extend to all consumers. By way of example, if there are 10 million identical consumers, the incremental benefit of privacy or data protection is \$30 million ($= \$3 \times 10 \text{ million}$). If the cost of providing this incremental level of data protection is \$30 million or more (less than \$30 million), the status quo level of protection is efficient (inefficient). As discussed in more detail below, this simple illustration ignores a host of other factors that make the analysis more complex, including heterogeneities in consumer preferences, nuances associated with two-sided markets, demand and/or cost

³⁰ This assumes consumers understand the nature of the bargain—something that may be enforced via consumer protection laws.

complementarities, network effects, and economies of scale or scope, among other things.

We conclude by noting that these considerations are also relevant when the pecuniary price is positive rather than zero. In short, an evaluation of whether a platform is exercising market power by restricting output or quality (thus raising pecuniary or shadow prices) requires an evaluation of pertinent costs and benefits. As a general matter, it may be efficient or inefficient for a platform to engage in behavior that appears to “skimp” on data security or “monetize” consumer data—even though such business practices might seem harmful (e.g., selling consumer data or steering consumers to products or services that the platform can monetize).

II. WHAT’S THE SOURCE OF THE MARKET POWER?

Regardless of whether one’s concern is that a market is highly concentrated or that a firm enjoys significant market power, it is important to understand the economic reasons a firm might enjoy market dominance or market power. Failure to do so may lead to well-intentioned policies having adverse, unintended consequences on consumers and social welfare.

A. Natural Monopoly

Popular wisdom is that a market served by many firms is good and that markets served by monopolies are bad. The theory of natural monopoly identifies situations in which this popular wisdom is wrong, in the sense that (a) breaking up a so-called dominant firm (or blocking mergers that would enhance concentration) results in inefficiencies that harm, rather than benefit, consumers, and/or (b) the presence of a monopoly or dominant firm may be a natural outcome of fair competition. Expressed differently, evidence that a platform’s pecuniary or shadow prices are substantially above marginal cost—or that a platform has a dominant position in one or more putative relevant markets—does not always imply that consumers would be better off by regulating or breaking up the dominant firm.

In the discussion below, we use the term *natural monopoly* to denote a situation where a single dominant platform arises “naturally,” as a result of market fundamentals rather than anticompetitive behavior by the firm. As we discuss later in this chapter, factors contributing to natural monopolies are important to consider when evaluating the potential benefits and costs of regulatory actions that are targeted at dominant firms.

1. Cost/Technology-Based Factors

We first discuss cost and technology-based factors that are important to consider in markets dominated by large firms. We begin by examining economies of scale, economies of scope, and cost complementarities.³¹

a. Economies of Scale

A firm enjoys economies of scale when its long-run average costs decline as it expands output.³² Formally, if $C(q)$ denotes a firm’s cost of producing q units of a product or service, economies of scale are present when $AC(q) = C(q)/q$ is decreasing in q . Among other things, this implies that a single firm can produce any given level of output at lower costs than firms that share the market. Expressed differently, monopoly is the cost-minimizing market structure when there are economies of scale.

To illustrate, consider Figure 3. Notice that the average cost curve is downward sloping, which indicates that the firm’s cost per unit sold decreases as the firm produces more output. For example, if the firm produces ten units of output, its average cost is \$2. If the firm reduces its output to five units, its average cost increases to \$5. In order to stay in business in the long run, the firm must cover its average cost of production; thus, to sustain an output of ten units, the firm must sustain a price of at least \$2. Suppose that instead of a single firm producing ten units of output, a regulator divided the firm into

³¹ We note that economies of scale, scope, and cost complementarities played an important role in *U.S. v. AT&T*. See, e.g., WILLIAM W. SHARKEY, *THE THEORY OF NATURAL MONOPOLY* (1982).

³² BAYE & PRINCE, *supra* note 20, at 161.

two separate firms that each produce five units of output. In this case, each firm would have to sustain a price of at least \$5 in order to stay in business. This illustrates that efforts to reduce concentration may have the effect of increasing costs, and ultimately sustainable prices. Ultimately, the impact on consumer welfare depends on whether the reduction in market power associated with enhanced competition is sufficiently large to offset the lost economies of scale.³³

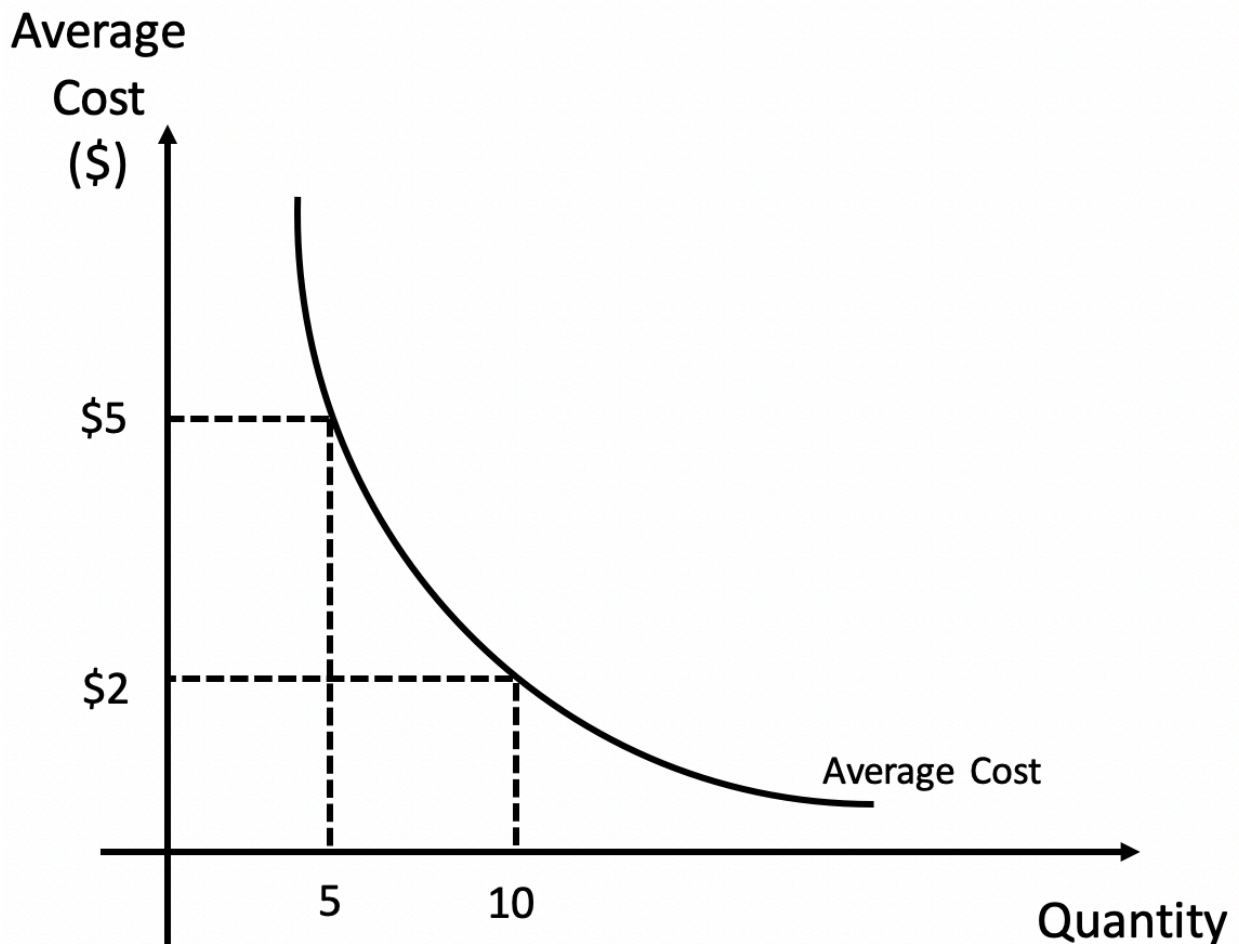


Figure 22

³³ For an early seminal paper on estimating economies of scale, see Laurits Christensen & William Greene, *Economies of Scale in U.S. Electric Power Generation*, 84 J. POL. ECON. 655 (1976).

b. Economies of Scope

Many digital platforms sell multiple products and/or services. For instance, Google offers consumers the use of its search engine (Google search), navigation services (Google Maps), video services (YouTube), as well as smart devices (Google Home). Likewise, it offers businesses multiple advertising services (e.g., Google Ads, YouTube Ads, etc.). A firm like Google enjoys economies of scope when its total cost of producing two or more products and/or services is lower than the total cost when multiple firms produce the product lines separately.³⁴

Economies of scope may be thought of as a generalization of economies of scale.³⁵ By way of example, suppose the total cost to a monopolist of producing five units of one product and six units of another product is \$100. Suppose a regulator requires the monopolist to divest one line of its business, such that two independent firms produce the two products. Suppose the costs to one of the resulting firms of producing five units of product one is \$60 and the costs to the other firm of producing six units of the other product is \$70. Then, total costs after divestiture are \$130—that is, \$30 higher than if the products were produced by a monopolist. This illustrates that efforts to require a monopolist to divest certain business lines again may have the effect of increasing costs, and ultimately sustainable prices. Ultimately, the impact on consumer welfare depends on whether the reduction in market power associated with enhanced competition is sufficiently large to offset the lost economies of scope.

³⁴ John C. Panzar & Robert D. Willig, *Economies of Scope*, 71 AM. ECON. REV. 268 (1981). Formally, a multiproduct cost function exhibits economies of scope if $C(Q) + C(Q') \geq C(Q + Q')$ whenever Q and Q' consist of disjoint bundles of outputs such that (a) if for any j , $q_j > 0$, then $q_j' = 0$, and (b) if $q_i' > 0$, then $q_i = 0$.

³⁵ For an example of empirical estimation of economies of scope, see Lawrence Pulley & Yale Braunstein, *A Composite Cost Function for Multiproduct Firms with an Application to Economies of Scope in Banking*, 74 REV. ECON. & STAT. 221 (1992).

c. Cost Complementarities

Consider a digital platform that sells multiple products and/or services. The firm is said to enjoy cost complementarities if its marginal cost of producing one product or service declines as it increases its production of another product or service.³⁶

By way of example, consider a digital platform that produces two products. The first product is sold in a monopolistically competitive market in which many firms compete by selling differentiated products. The firm is the sole producer of the second product, and thus enjoys monopoly power in its sale. A policy that targets the firm's monopoly power and reduces the firm's share of the monopolized market (through divestiture or subsidies to competitors, say) will reduce the firm's output in the monopolized market. If there are cost complementarities, this output reduction increases the firm's marginal costs of producing the product it sells in the other market, thereby harming consumers in that market because of the higher prices charged as a result of higher marginal costs.

d. Large (Sunk) Entry Costs

Entry costs drive a wedge between the profits from entering a market and the profits from staying out.³⁷ By way of example, suppose an existing monopolist charges its 100 customers \$10 each for a product that costs the monopolist \$8 to produce. Suppose an entrant has a superior technology that allows it to produce the same product for only \$7. In principle, this firm could enter the market and price at the monopolist's cost to corner the market and sell to, say, 150 customers at this lower price. Notice that by entering the firm would earn \$1 on each unit sold (\$8 - \$7), or \$150. If the cost of entry

³⁶ See SHARKEY, *supra* note 31, at 67-73. Formally, if $C(Q)$ is a multi-product cost function, cost complementarities exist whenever $\partial^2 C / \partial q_i \partial q_j < 0$.

³⁷ For an example of empirical estimation of entry costs, see Sanghamitra Das, Mark Roberts & James Tybout, *Market Entry Costs, Producer Heterogeneity, and Export Dynamics*, 75 *ECONOMETRICA* 837 (2007).

exceeds \$150, would the entrant find it profitable to enter? It turns out that the answer depends on how much of the entry cost is sunk, that is non-recoverable.

Alternatively, suppose customers are only willing to pay \$7 for the entrant's product, owing to the large investments the incumbent has made toward promoting its brand. In this case, entry requires a substantial investment in branding to induce consumers to be willing to pay \$8 for the entrant's product. Depending on how much of these branding costs are sunk, the entrant may not find it profitable to enter.

e. Superior Technology

Technology can also result in market power or dominance. For example, a firm with a superior technology may be able to produce a given product or service at lower cost than rival firms. Or, for the same cost, the firm with superior technology can provide a higher quality product or service than its rivals.

f. Data as a Barrier to Entry

We conclude this subsection by noting that "Big Data" may itself be a barrier to entry.³⁸ There may be economies of scale, scope, or cost complementarities with respect to maintaining large databases. Likewise, if a firm has a superior technology for storing, accessing, or utilizing Big Data, it may ultimately be the sole firm that maintains that database. In this instance, the firm controlling these Big Data may exercise market power in a putative "data market" through the prices it charges to store, access, or utilize the data. This highlights examples of tradeoffs requiring empirical analysis to determine whether the beneficial effects of cost savings are sufficient to offset the exercise of market power.

Big Data may also give a firm market power in other (non-data) markets.

³⁸ For a more detailed discussion of these and other issues related to Big Data, see John M. Yun, *Antitrust After Big Data*, 4 CRITERION J. INNOVATION 407 (2019).

Specifically, if a single firm controls data that is necessary for entering another market (e.g., map applications, or targeted ads), such data may serve as a natural barrier to entry. More broadly, data may also be a barrier to entry when significant sunk costs must be incurred to acquire data necessary to viably compete.³⁹ By way of example, it may be difficult for other search engines to attract Google’s customers if Big Data are necessary for returning relevant search results.

2. Demand-Based Factors

a. Consumer Preferences for Potential Substitutes

Implicit in our discussion of cost-based factors is the assumption that there are no close substitutes for the product or service provided by the platform. Whether this assumption holds is an empirical question and depends upon consumer preferences.⁴⁰ By way of example, the fact that Sirius/XM is the sole provider of satellite radio services and enjoys economies of scale and scope, potential entry barriers, and potentially even patent protection need not imply market dominance if consumers have good alternatives. On the other hand, if empirical evidence indicates that (based on consumer preferences) terrestrial radio, music downloads, and/or streaming services are *poor* substitutes for satellite radio services, the aforementioned factors may naturally give rise to market

³⁹ See, e.g., AUSTL. COMPETITION & CONSUMER COMM’N, DIGITAL PLATFORMS INQUIRY FINAL REPORT 11 (2019), <https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf> [hereinafter ACCC REPORT].

(“The breadth and depth of user data collected by the incumbent digital platforms provides them with a strong competitive advantage, creating barriers to rivals entering and expanding in relevant markets, and allowing the incumbent digital platforms to expand into adjacent markets.”); STIGLER CTR., STIGLER COMM. ON DIGITAL PLATFORMS, FINAL REPORT 40 (2019), <https://research.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf> [hereinafter STIGLER REPORT] (“Barriers to equivalent data resources, a side effect of not having the history, scale, or scope of the incumbent, can inhibit entry, expansion, and innovation.”).

⁴⁰ For a seminal paper illustrating empirical estimation of consumer preferences and closeness of substitutes, see Steven Berry, James Levinsohn & Ariel Pakes, *Automobile Prices in Market Equilibrium*, 63 *ECONOMETRICA* 841 (1995).

power and/or dominance. In short, cost-based factors cannot be examined in a vacuum; consumer preferences and demand are also relevant.

When consumer preferences result in a relatively modest market demand for a product or service, even modest economies of scale or scope may result in only a single firm being able to serve the market. In contrast, when market demand is large, a market may support multiple firms in the presence of cost-based factors that, on the surface, may lead one to presume market dominance.

These observations are relevant not only for defining putative relevant product markets, but also for assessing potential competitive effects. The absence of substitutes is not the only demand-side factor that may contribute to market dominance. As discussed next, demand-side complementarities may also be relevant.

b. Demand Complementarities

Two distinct products (services) exhibit demand complementarities when a reduction in the price of one product (service) increases the demand for the other product (service).⁴¹ When demand complementarities are sufficiently strong, market structure may naturally evolve to a single firm selling both products.⁴² Conceptually, the pricing decisions of a single firm will internalize the impact of pricing one product on the demand for the other product.⁴³ Among other things, this gives a multi-product firm a natural advantage over two individual firms each selling distinct but complementary products. Turning this on its head, breaking up a dominant firm selling complementary products into two or more firms selling individual products, will—other things equal—result in higher prices.

⁴¹ See, e.g., BAYE & PRINCE, *supra* note 20, at 34-35.

⁴² For an example of empirical estimation of demand complementarities, see Matthew Gentzkow, *Valuing New Goods in a Model with Complementarity: Online Newspapers*, 97 AM. ECON. REV. 713 (2007).

⁴³ See, e.g., Nicholas Economides & Steven C. Salop, *Competition and Integration Among Complements, and Network Market Structure*, 40 J. INDUS. ECON. 105 (1992).

c. Search Costs and/or Switching Costs

Search costs—that is, consumers’ costs of identifying favorable substitutes—may enhance the market power of a platform.⁴⁴ While one might speculate that search costs are *de minimis* on the internet, academic research indicates that even small search frictions can materially impact the behavior of consumers and firms, and therefore prices.⁴⁵

Switching costs are the explicit and implicit costs a customer must incur to move its business from one firm to another. Switching costs drive a wedge between the value a consumer gets from using the status quo platform and the value enjoyed by using a superior alternative.⁴⁶ In extreme cases, this may enable an inferior platform to remain dominant because the switching costs limit consumers’ willingness to switch to a competing platform.

For example, a variety of different switching costs might prevent some iPhone users from switching to Android devices. Such costs might include transferring contacts and photos, learning new user interfaces, the need to purchase/download new apps, and so on. The presence of large switching costs may exacerbate lock-in and therefore contribute to market power and/or dominance.⁴⁷

⁴⁴ For an example of empirical estimation of search costs, see Han Hong & Matthew Shum, *Using Price Distributions to Estimate Search Costs*, 37 RAND J. ECON. 257 (2006).

⁴⁵ For a survey of this literature, see Michael R. Baye, John Morgan & Patrick Scholten, *Information, Search, and Price Dispersion*, in HANDBOOK IN ECONOMICS AND INFORMATION SYSTEMS 323–71 (Terrence Hendershott ed., 2006).

⁴⁶ For an example of empirical estimation of switching costs, see Yuri Park & Yoonmo Koo, *An Empirical Analysis of Switching Cost in the Smartphone Market in South Korea*, 40 TELECOMM. POL’Y 307 (2016).

⁴⁷ See, e.g., STIGLER REPORT, *supra* note 39, at 62–63 (“Platforms may seek to reduce interoperability and awareness of outside options. For example, platforms may exclude certain services or increase friction in accessing third parties’ services. High search and switching costs are used to ‘lock-in’ users and reduce the ability of competitors to access those users. Platforms may adopt strategies to reduce multi-homing to obtain more market power over their users.”).

3. Network Effects and Two-Sided Markets

Network effects can also contribute to market dominance. Broadly, network effects are a form of externalities in which the value one entity obtains from a product or service depends on the number of other entities using that product or service. Network effects can be direct or indirect. Facebook and Twitter are classic examples of platforms exhibiting direct network effects; the value of using either platform increases as additional users are attracted to the platform, since a given post or tweet connects to a wider audience. Apple's iPhone is an example of an ecosystem where indirect network effects are present.⁴⁸ As the number of iPhone users increases, users *indirectly* benefit because the larger user base induces developers to create more (and/or higher-quality) iPhone apps.⁴⁹

When network effects are sufficiently large, a platform may achieve a critical mass of users, such that the pool of remaining potential users naturally shun other platforms and flock to that platform. This situation is sometimes called market tipping and may result in a single dominant platform. It is important to note that network effects do not necessarily result in markets tipping to the most efficient platform. Furthermore, entry by a superior platform may be hindered by lock-in, even if the cost to an individual user of switching is negligible.⁵⁰ Intuitively, the benefit to an individual switching to the superior platform may be dwarfed by the lost network effects if other users do not also switch.

⁴⁸ For an example of empirical estimation of network effects, see Marc Rysman, *Competition Between Networks: A Study of the Market for Yellow Pages*, 71 REV. ECON. STUD. 483 (2004).

⁴⁹ We note that two-sided markets and network effects are not unique to digital platforms, and are present in many traditional markets, such as newspapers, credit cards, and real estate. See, e.g., Dan Spulber, *The Economics of Markets and Platforms*, 28 J. ECON. & MGMT. STRATEGY 159 (2019).

⁵⁰ This theoretical possibility was first pointed out in Section VII of Michael R. Baye and John Morgan, *Information Gatekeepers on the Internet and the Competitiveness of Homogeneous Product Markets*, 91 AM. ECON. REV. 454 (2001).

Network effects are especially complex for platforms that serve two-sided markets.⁵¹ Additionally, for some two-sided platforms, competition and efficiency depends on whether customers on a given side of the platform engage in *single homing* or *multi-homing*.⁵² By way of example, *English* is a language platform that serves a two-sided market (those wishing to transmit and receive information). We (the authors) engage in single-homing—we exclusively use English as our language platform. But some individuals single-home on another language platform (e.g., Spanish) or engage in multi-homing (e.g., use both Spanish and English to communicate).

As a result of these and other complexities in two-sided markets, the emergence of (or evolution towards) a single, large dominant platform may—as a matter of economic theory—benefit or harm consumers. Ultimately, distinguishing these possibilities is a data-intensive exercise and depends on the environment (including demand, costs, the type and extent of network externalities, and the nature of competition).⁵³

B. Potentially Harmful Business Practices

Not all factors that result in dominance and/or market power are natural; a platform may engage in actions designed to weaken, eliminate, or stifle competition. We discuss these possibilities next. Then, we discuss strategies designed to extend market

⁵¹ Baye and Morgan were the first to recognize that complex network effects arise in settings where an internet platform is a strategic actor (that is, a profit-maximizing “gatekeeper”) that charges fees to both consumers and firms wishing to utilize its platform to acquire and transmit information. *Id.* at 470. The complexity of networks effects is further documented in Jean-Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets*, 1 J. EUR. ECON. ASSOC. 990 (2003). These latter authors popularized the term “two-sided markets.” See Bernard Caillaud & Bruno Jullien, *Chicken & Egg: Competition Among Intermediation Service Providers*, 34 RAND J. ECON. 309 (2003); Mark Armstrong, *Competition in Two-Sided Markets*, 37 RAND J. ECON. 668 (2006); Andrei Hagiu, *Two-Sided Platforms: Product Variety and Pricing Structures*, 18 J. ECON. & MGMT. STRATEGY 1011 (2009).

⁵² See, e.g., Caillaud & Jullien, *supra* note 51.

⁵³ For more on network effects and platforms see John M. Yun, *Overview of Network Effects & Platforms in Digital Markets*, and Christopher Yoo, *Network Effects in Action*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

power into markets for other products or services.

1. Strategies to Eliminate or Weaken Competition

While search and/or switching costs are often natural, a firm may intentionally create such costs in an attempt to make it costly for consumers to seek out, or switch to, substitutes. Such business practices may heighten a firm's market power by eliminating actual or potential competitors.

Another business strategy a dominant platform might use to weaken or eliminate competition is to acquire competitive threats—a practice that is sometimes called “killer” acquisitions.⁵⁴ Related, a not-yet dominant firm may merge with formidable competitors in an attempt to become dominant. Our view is that the FTC, DOJ, merging parties (and if necessary, courts) are in a better position to gather the information needed to determine whether a merger is likely to harm consumers than those voicing opinions on traditional and/or social media.⁵⁵

A dominant firm may also use prices as a tool for eliminating competitors. For example, a firm may engage in predatory pricing—that is, charge a price below its relevant unit costs of production in order to drive competitors out of the market.⁵⁶ For

⁵⁴ Our use of the term “killer acquisition” is not limited to the situation where an incumbent firm acquires “innovative targets solely to discontinue the target’s innovation projects and preempt future competition,” as in Colleen Cunningham, Florian Ederer, & Song Ma, *Killer Acquisitions* (2019), ssrn.com/abstract=3241707. Other Reports on the Digital Economy have raised concerns about these killer acquisitions. See, e.g., ACCC REPORT, *supra* note 39, at 10; STIGLER REPORT, *supra* note 39, at 111; DIRECTORATE-GENERAL FOR COMPETITION, EUR. COMM’N, COMPETITION POLICY FOR THE DIGITAL ERA 111 (2019), <https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf> [hereinafter EC REPORT]; DIGITAL COMPETITION EXPERT PANEL, UNLOCKING DIGITAL COMPETITION (2019), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf.

⁵⁵ See John M. Yun, *Potential Competition, Nascent Competitors, and Killer Acquisitions*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁵⁶ See Timothy Muris & Joseph Coniglio, *What Brooke Group Joined Let None Put Asunder: The Need for the Price-Cost and Recoupment Prongs in Analyzing Digital Predation*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

such a strategy to be profitable, the firm must ultimately be able to recoup the losses incurred by charging higher post-exit prices. A dominant firm may also prevent competitors from entering its market by limit pricing—charging a sufficiently low price that entry is unprofitable.⁵⁷

A multi-product firm may engage in cross-subsidization to eliminate competition in one of its markets. For example, a firm might price one of its products at marginal cost, but below its average total cost, to prevent a would-be competitor from selling this product. The firm subsidizes these losses with profits earned from other product lines for which it enjoys market power.⁵⁸ In considering this possibility, it is important to consider that cross-subsidization may be necessary to sustain a platform in a two-sided market. For example, it is not sustainable for Google to provide Google Maps to consumers for free, unless it can somehow subsidize this free service by monetizing consumer data through the sale of another product (e.g., targeted ads). In this case, cross-subsidization may benefit or harm consumers; the efficiency of such a strategy depends not only on shadow prices but also on the costs associated with protecting certain types of user data.

Predatory pricing may be difficult to distinguish from pro-competitive pricing strategies such as cross-subsidization and penetration pricing.⁵⁹ Penetration pricing is the practice of charging an initial low price (potentially below marginal and/or average total cost) in an attempt to induce consumers to buy a new product. Penetration pricing is therefore a strategy that may permit firms to overcome lock-in and/or switching costs.

⁵⁷ For a discussion of possibility theorems related to predatory pricing and limit pricing, see Michael R. Baye & Jeffrey T. Prince, *Advanced Topics in Business Strategy*, in *MANAGERIAL ECONOMICS AND BUSINESS STRATEGY* 406–27 (9th ed. 2017).

⁵⁸ For example, the CEO of Sonos described the prices that Amazon and Google charge for their Echo and Home devices as “predatory pricing.” Jason Del Rey, *6 Reasons Smaller Companies Want To Break up Big Tech*, *VOX* (Jan. 22, 2020), <https://www.vox.com/recode/2020/1/22/21070898/big-tech-antitrust-amazon-apple-google-facebook-house-hearing-congress-break-up>.

⁵⁹ For a discussion of possibility theorems related to cross-subsidization and penetration pricing, see Baye & Prince, *supra* note 57.

While this strategy involves “recoupment” (via higher subsequent prices), it is not designed to drive competitors out of the market but to penetrate a potentially dominated market.

Finally, a platform may take actions that soften competition. One example is strategies designed to raise rivals’ costs.⁶⁰ Raising rivals’ costs lessens competitors’ ability to compete in price or quality, and thereby can contribute to a firm’s market power and/or dominance. Another example is softening price competition via collusive strategies embedded inside complex algorithms.

2. Strategies to Extend Market Power

Tying and foreclosure are classic examples of strategies whereby a firm that enjoys market power in one market (e.g., a computer operating system) attempts to extend its market power into another market (e.g., software).⁶¹ The classic example is embedded in *U.S. v. Microsoft*.⁶² At the time (late 1990s), Microsoft’s operating system was a platform that served users, software developers, and original equipment manufacturers (OEMs). In fact, the Microsoft Windows platform was the dominant operating system at the time, and it attempted to leverage this market power into the market for a specific software market (web browsers) by tying the sale of its operating system to OEMs loading its Internet Explorer.

As another example, suppose Google engages in a business practice whereby its search results favor links to products or services monetized or owned by Google. As a matter of theory, it is possible that such “self-preferencing” restricts consumers’ information about the availability of choices, thus harming them either by (a) reducing expected match quality, (b) raising consumers’ search costs and permitting Google to

⁶⁰ Steven C. Salop & David T. Scheffman, *Raising Rivals’ Costs*, 73 AM. ECON. REV. 267 (1983).

⁶¹ See, e.g., Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 AM. ECON. REV. 837 (1990).

⁶² *United States v. Microsoft Corp.*, 84 F. Supp. 2d 9 (D.D.C. 1999).

raise prices for these products, or in extreme cases, (c) foreclosing a related market by driving competitors out of business or preventing entry.⁶³

III. ASSESSMENT OF ALTERNATIVE REGULATORY POLICIES

We now look at potential regulatory tools to remedy potential harm from the business practices discussed above. In looking at these tools, it is important to recognize that different tools and prescriptions require different information in order to implement them and may entail different costs. Examples of tools include blocking mergers, dismantling monopolies, price regulation, privacy protection, and mandated data sharing.

A. Economic Merits of Potential Remedies

1. Divestiture/Break-up/Moratoria on Mergers

One tool that might be used to protect consumers from a dominant firm's market power is to break the large firm into smaller firms (as was the case in the famous Standard Oil and AT&T cases⁶⁴), or more commonly since the Hart-Scott-Rodino Antitrust Improvements Act of 1976, to require divestitures when evidence indicates that a merger is likely to elevate prices, reduce product and/or service quality, or otherwise harm consumers.

The economic rationale for such break-ups or moratoria on mergers is that, other things equal, consumers benefit from enhanced competition.⁶⁵ In many market environments, enhanced competition makes the demand for any given firm's product

⁶³ For more on self-preferencing, see Michael Salinger, *Self-Preferencing*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020). Additionally, other Reports have raised issues related to self-preferencing. For example, see EC REPORT, *supra* note 54, at 65-69; and ACCC REPORT, *supra* note 39, at 136.

⁶⁴ Standard Oil Company of New Jersey v. U.S., 221 U.S. 1 (1911); United States v. AT&T, 552 F. Supp. 131 (D.D.C. 1982).

⁶⁵ We recognize there are environments where enhanced competition may reduce welfare; see, e.g., N. Gregory Mankiw & Michael D. Whinston, *Free Entry and Social Inefficiency*, 17 RAND J. ECON. 48 (1986).

more elastic, thus inducing firms to lower prices. However, competition also results in firms splitting market demand, and therefore reducing the scale of their operations. As discussed earlier, when there are economies of scale, scope, or cost complementarities, this can result in higher costs that tend to elevate prices. Whether consumers ultimately benefit depends on whether the reduction in market power is sufficiently large to offset such cost inefficiencies. Because large platforms are likely to enjoy economies of scale, scope, and cost complementarities, careful empirical analysis is necessary to ensure that breaking up a large platform into smaller pieces—or preventing a firm from getting larger through acquisition—will result in sustainably lower prices.

Additionally, it is important to recognize that if the sources of monopoly power or dominance are natural, the market structure may evolve to monopoly following a break-up. This may arise as a result of network effects and tipping, or cost considerations. For example, if consumers engage in single homing on a dominant two-sided platform, the market may evolve back to monopoly after a break-up. As discussed earlier, there is no guarantee that the market will evolve (or tip) to the best platform. On the other hand, if consumers multi-home and market fundamentals can sustain two platforms, a break-up may result in platform competition and superior choices for consumers.

Regardless of whether a dominant platform serves a traditional or two-sided market, under some conditions it may be impossible to sustain multiple firms without subsidizing market participants. For example, this may be the case if total demand is small relative to the firm's costs or there are large economies of scale or scope.

It is also important to note that forcing a large firm to divest vertical or complementary assets will externalize beneficial demand complementarities, potentially elevating prices. For example, the divestiture of vertical assets may raise prices as a result of double marginalization.⁶⁶ Likewise, the divestiture of complementary assets may raise

⁶⁶ The seminal reference is Joseph J. Spengler, *Vertical Integration and Antitrust Policy*, 58 J. POL. ECON. 347

prices; as discussed earlier, a monopolist will charge lower prices for complementary products than two independent firms because it internalizes the beneficial effects of lowering the price of one product through higher demand for complementary products.

In the absence of large sunk entry costs, breaking up a dominant firm may be unnecessary. In this case, if an incumbent platform is charging super-competitive prices for some products or services, existing or *de novo* platforms may readily enter the product or service space to compete. In these instances, competition and/or potential competition may discipline behavior.

It is also possible that breaking up a dominant firm adversely affects technology and/or quality. While the economics literature identifies theoretical conditions under which a monopoly will innovate more or less than competitive firms,⁶⁷ breaking up a dominant digital platform could result in a separation of property rights over complementary technologies. This can result in inefficiencies and/or other challenges, including (a) lost economies of scale, scope, or cost complementarities in innovation, and (b) thorny issues related to standard setting and FRAND pricing.⁶⁸

(1950). For a discussion of these and other theoretical possibilities, see James C. Cooper, Luke M. Froeb, Dan O'Brien & Michael G. Vita, *Vertical Antitrust Policy as a Problem of Inference*, 23 INT'L J. INDUS. ORG. 639 (2005). For a discussion of the empirical evidence, see James C. Cooper, Luke M. Froeb, Dan O'Brien & Michael G. Vita, *Vertical Restrictions and Antitrust Policy: What About the Evidence*, 1 COMPETITION POL'Y INT'L 5 (2005); see also Tad Lipsky, Joshua D. Wright, Douglas H. Ginsburg & John M. Yun, The Federal Trade Commission's Hearings on Competition and Consumer Protection in the 21st Century, Vertical Mergers, Comment of the Global Antitrust Institute, Antonin Scalia Law School, George Mason University (Sept. 6, 2018), <https://gai.gmu.edu/wp-content/uploads/sites/27/2018/09/GAI-Comment-on-Vertical-Mergers.pdf>.

⁶⁷ For surveys of this literature, see, e.g., Morton I. Kamien & Nancy L. Schwartz, *Market Structure and Innovation: a Survey*, 13 J. ECON. LITERATURE 1 (1975); Rajiv D. Banker, Inder Khosla & Kingshuk K. Sinha, *Quality and Competition*, 44 MGMT. SCI. 1179 (1998).

⁶⁸ For a discussion for some of these thorny issues, see, e.g., Mathias Dewatripont & Patrick Legros, *Essential Patents, FRAND Royalties and Technological Standards*, 61 J. INDUS. ECON. 913 (2013); David J. Teece, *The Tragedy of the Anticommons Fallacy: A Law and Economics Analysis of Patent Thickets and FRAND Licensing*, 32 BERKELEY TECH. L.J. 1489 (2017).

2. Price Regulation

Regardless of whether the market structure is consistent with natural monopoly, market power generally results in socially inefficient prices. Consequently, even if some of the efficiencies discussed above are present, it is theoretically possible that allowing the dominant firm to persist but regulating price will improve welfare.

Figure 4 illustrates the potential improvement in welfare arising from price regulation. An unconstrained monopolist will charge the monopoly price, P^M , which exceeds the marginal cost of production. In this figure, it is theoretically possible to improve social welfare by regulating the monopolist's price at P^R ; consumers get more output at a lower price.

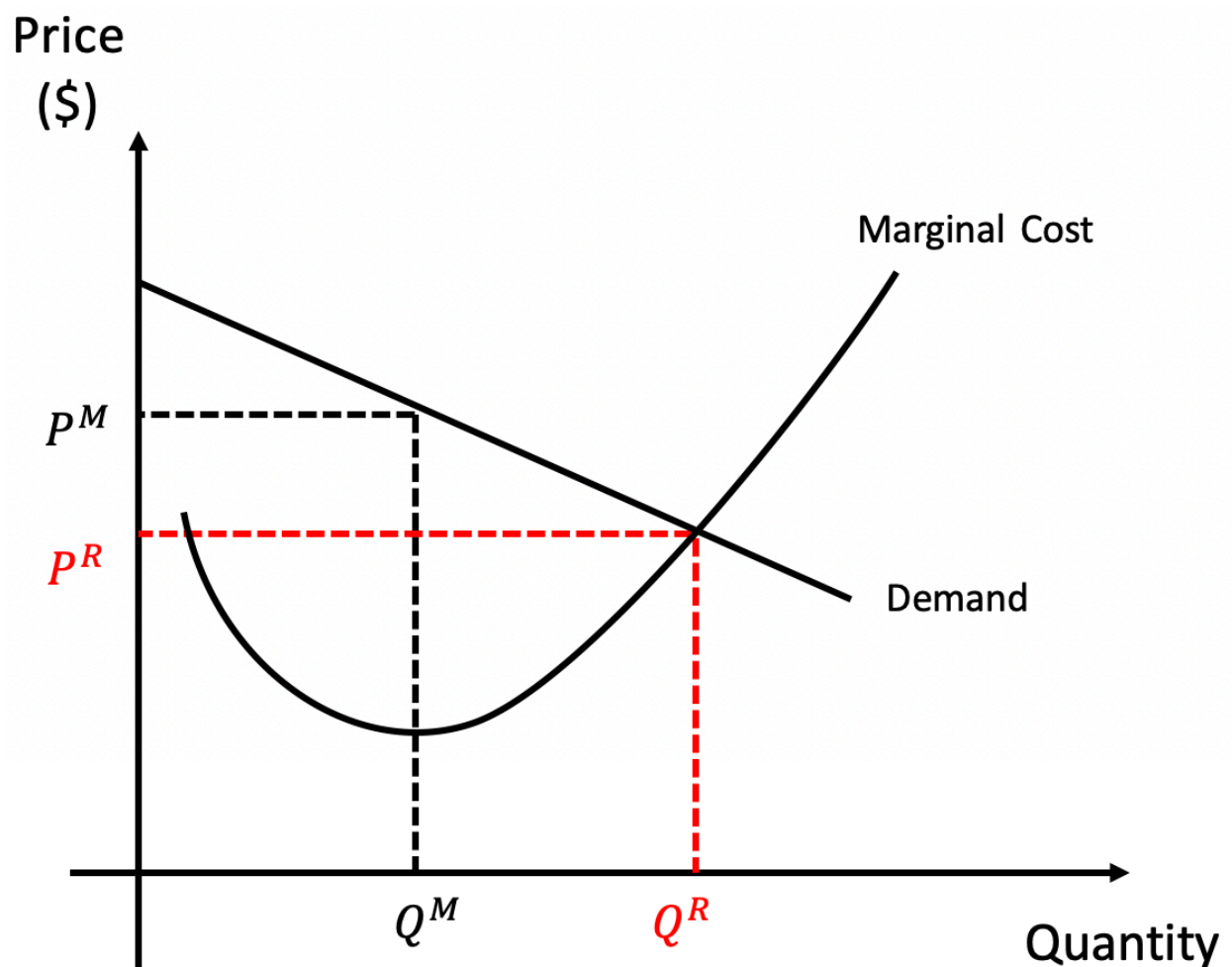


Figure 23

While it is a simple matter to identify the socially efficient price in Figure 4, this is a difficult task in practice. For virtually any market, efficient prices are a function of complex and dispersed information about consumer preferences, firm costs, technology, etc. As evidenced by the failure of the former Soviet Union's command economy, bureaucrats may be unable to centrally aggregate and process the necessary information and expertise required to set prices efficiently.⁶⁹ In addition, the regulatory bureaucracy may be slow to adapt in response to changes in the demand and cost conditions displayed in Figure 4. Consequently, even if a regulator has the requisite information about demand and costs to initially regulate prices efficiently, there is no guarantee that regulated prices will be dynamically efficient over time.

The complexities highlighted in Figure 4 may be exacerbated for digital platforms. The determination of welfare-improving regulated prices is even more complex for such platforms, owing to (a) difficulties in determining welfare-improving regulated prices for multi-product platforms with demand and/or cost complementarities, (b) challenges in efficiently regulating multiple prices for two-sided markets with network effects, and (c) the dynamic nature of technology markets.

Finally, there is no guarantee that socially efficient prices are sustainable. As shown in Figure 5, regulating the price at P^R (where price is set at marginal cost) would ultimately drive the monopolist out of business. A regulator may attempt to overcome such problems by imposing second-best (Ramsey) prices, which requires additional information about the firm's long-run average costs.⁷⁰ Or, as discussed below, the regulator may choose to force the firm to price at marginal cost but subsidize the firm.

⁶⁹ For a discussion of problems associated with price controls, see, e.g. Fiona M. Scott Morton, *The Problems of Price Controls*, 24 REGULATION 50 (2001).

⁷⁰ The classic reference is William J. Baumol & David F. Bradford, *Optimal Departures from Marginal Cost Pricing*, 60 AM. ECON. REV. 265 (1970).

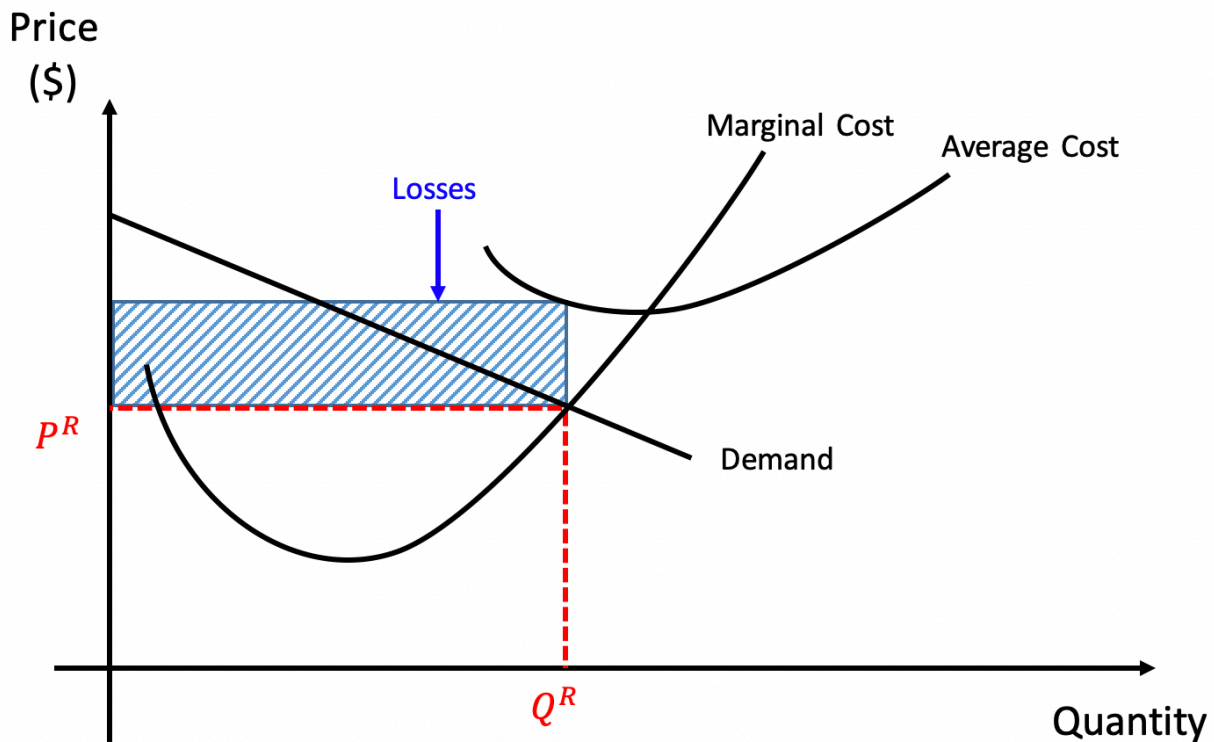


Figure 24

3. Subsidies

In many digital markets, efficient (first-best) price regulation may require subsidies owing to the fact that marginal or incremental costs are zero or small relative to average costs. Conceptually, Figure 5 shows that a monopolist would require a subsidy of the shaded area in order to cover all of its costs at the first-best price. As discussed earlier, the information required to identify the required the subsidy that sustains first-best prices may be difficult to attain for Big Tech markets, owing to complexities arising from economies of scope, cost and demand complementarities, and network effects arising in two-sided markets.

4. Non-Price Regulation

To the extent that a dominant platform exploits its market power by skimping on product or service attributes valued by consumers, it is theoretically possible for a

regulator to impose socially efficient levels of these attributes. For example, a regulator armed with sufficient knowledge and data about the platform's business might attempt to impose welfare-improving privacy regulations (as attempted by the EU in its *General Data Protection Regulation* and by the state of California in its *California Consumer Privacy Act*), restrictions on self-preferencing, or information censorship (e.g., political-balance mandates).

In practice, however, regulators may lack the specific information required to dictate socially optimal levels. Likewise, as discussed concerning price regulation, regulators' information is often static; even if the regulator can impose regulations that improve current welfare, there is no guarantee that regulation will be dynamically efficient. If the regulator gets it wrong (e.g., imposing too much or too little quality), the outcome of the regulation may be worse than the market solution. For example, if the regulator imposes significant data protection costs, well in excess of shadow prices, some consumers may be harmed as a result of hassle costs or higher prices owing to compliance costs that the platform passes on to consumers. Owing to complexities in Big Tech markets and consumer heterogeneity regarding what are ideal search results or privacy protections, this can be a difficult task.

Another form of non-price regulation is regulating the content provided by a dominant platform. For example, one might be concerned that a dominant firm is attempting to use its market power to skew customers toward its own products or services (e.g., self-preferencing by Google or Amazon in displaying search results). The economic issues here are similar to those discussed earlier regarding tying, so we now consider the skewing of news, videos, or other content.

To be concrete, imagine that the majority of consumers viewing YouTube videos have distaste for videos featuring people wearing blue suits. As discussed above, a profit-maximizing platform has an incentive to internalize externalities on both sides of the two-sided market it serves, and thus may find it profitable to exclude content that features

people in blue suits. While such a policy maximizes platform profits and the welfare of the majority of its consumers, such censorship harms some content providers and consumers—namely, those wishing to create and consume content featuring folks in blue suits. In such circumstances, regulation that forces the platform to display videos of people in blue suits may or may not improve overall welfare. But one can also imagine situations where a monopoly platform censors content for reasons that are not motivated by profits (e.g., political preferences). Clearly in these instances, it is theoretically possible that the regulator might improve social welfare by regulating the platform’s content.

In some instances, it may be feasible for another platform to emerge to provide the disadvantaged parties with a blue-suit venue (e.g., both Fox and CNBC can coexist). In instances where it is not feasible for a new platform to emerge that serves these neglected consumers and content creators,⁷¹ regulatory oversight regarding the content that is and is not allowed on the platform could conceivably improve welfare.

An alternative type of non-price regulation involves property rights, where a regulator attempts to improve welfare by eliminating a platform’s property rights over certain elements of its business. By way of example, Big Data are an important feature of many large platforms’ business models. As a matter of economic theory, it is possible to improve consumer welfare by forcing a dominant platform to share its data with competitors. For instance, if Big Data is essential for providing relevant search results and relevant ads to consumers, one could mandate that Google and/or Amazon share its data with competitors. To the extent this enhances competition, consumers may benefit from better search results and advertisers benefit from lower advertising fees.

On the other hand, owing to the complexity of digital and two-sided platforms, it is also possible that such a mandate harms consumers. For example, eliminating the platform’s property rights over data could adversely affect its incentives to collect and

⁷¹ See, for example, our earlier discussion of natural monopoly.

protect the data in the first place. Furthermore, forcing the platform to share data with competitors could result in the platform having to charge consumers for services that would otherwise be free (e.g., internet search, Google Maps, YouTube videos). As discussed earlier, cross-subsidization is a common feature of two-sided markets.

5. Maintain the Status Quo

We conclude by noting that in some instances, consumers and competition may be better served by a laissez-faire approach rather than attempting regulatory intervention. As discussed below, one potential advantage of a laissez-faire approach is that it allows for competition and the incentives of potentially better-informed market participants rather than bureaucrats to guide decisions, and the evolution of markets to discipline or supplant the products and services of firms that may be exercising market power. Our discussion includes the dynamic nature of technology markets, incentives of platforms in two-sided markets, incentives of regulators, the complexity of digital platforms, and unintended consequences of regulations.

Dynamic Considerations. It is well-established that technology markets are highly dynamic (e.g., Moore’s Law⁷²). While it may be tempting to intervene in an attempt to remedy an immediate concern, history suggests that competition often permits new and superior technologies to supplant entrenched ones. We recognize that policymakers often operate on two, four, or six-year time horizons, but the long-run disciplining forces of dynamic competition may well be superior to regulatory intervention.⁷³

By way of example, consider the putative monopoly power of an internet service provider (ISP). There are numerous “possibility theorems” regarding how an unrestrained monopoly ISP might harm consumers or competition. For instance, there are scenarios in which (a) the monopolist can profitably tie its ISP services with online

⁷² See, e.g., Robert R. Schaller, *Moore’s Law: Past, Present and Future*, 34 IEEE SPECTRUM 52 (1997).

⁷³ Later in this chapter we discuss some potential challenges associated with such intervention.

content to weaken or foreclose competition with content providers such as Netflix,⁷⁴ (b) the monopolist can profitably bundle its ISP services with content to extract additional surplus by forcing consumers to make “all-or-none” decisions,⁷⁵ or (c) the monopolist is unable to profitably use these or any other strategies to harm consumers or competition.⁷⁶

Concerns such as these are not new; twenty years ago, an important policy question was whether ISPs could leverage their market power to harm consumers. A retrospective look at the ISP industry in the U.S. demonstrates that the dynamic nature of technology markets largely protected consumers and competition from harmful possibilities such as (a) and (b) above—regardless of whether industry conditions satisfied the assumptions of a particular possibility theorem at some static point in time. At the dawn of the 21st Century, the vast majority of U.S. households connected to the internet using a dial-up connection. According to the FTC, at the time America Online (AOL) was “. . . the leading provider of narrowband internet access, with a share of approximately 50 percent of narrowband subscribers [and was] positioned and likely to become the leading provider of broadband internet access as well.”⁷⁷ Despite its significant first mover advantage—and the huge arsenal of content it acquired through its merger with Time Warner in 2001 (including motion picture production capabilities, television programming, home video distribution, traditional and online magazines, and book publishing)—AOL-Time Warner was a non-player by 2003 when it announced the largest corporate loss in U.S. history for the year ended December 31st, 2002.⁷⁸

⁷⁴ See, e.g., Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 AM. ECON. REV. 837 (1990).

⁷⁵ See, e.g., M. L. Burstein, *The Economics of Tie-In Sales*, 42 REV. ECON. & STAT. 68 (1960).

⁷⁶ For a discussion of the so-called “one monopoly rent theorem” and other possibility theorems related to the incentives of platforms, see Benjamin E. Hermalin & Michael L. Katz, *Product Differentiation Through Exclusivity: Is there a One-Market-Power-Rent Theorem?*, 22 J. ECON. & MGMT. STRATEGY 1 (2013).

⁷⁷ Complaint, *In re America Online, Inc. and Time Warner Inc.*, No. C-3989 (2000).

⁷⁸ See Michael R. Baye & Jeffrey T. Prince, *Challenges at Time Warner*, in *MANAGERIAL ECONOMICS AND BUSINESS STRATEGY* 562-597 (8th ed. 2013).

This does not imply that prospectively, it is foolish to worry about possibilities of harm. This episode is simply a reminder that the competitive landscape can turn on a dime, especially in Big Tech. The evolution in the ISP market continues; today households in most locales have numerous options for internet connectivity, including cable, DSL, satellite, and mobile. Any of these options offers vastly superior reliability and bandwidth compared to AOL's "dominant" position in dial-up (narrow band) internet. Additionally, the identities of the dominant players have also changed over the past twenty years. Over the next decade, additional technological advances are likely to lead to new and better options for consumers—and potentially new competitors. Complementary enhancements in compression technologies are likely to further narrow the gap users experience associated with using various methods of connecting. While many consumers have only one option for a top-end internet connection (e.g., Gigabit fiber cable), it is an *empirical* question whether—now and in the future as technology continues to evolve—consumers could defeat price increases imposed by a Gigabit service provider by substituting toward alternative (non-fiber) connections. Even in the future, empirical evidence will be necessary to determine whether novel lower-priced, lower-quality (compared to Gigabit fiber optic) connection technologies (e.g., 5G, low-orbit satellite) are close substitutes for existing home internet technologies. It is important that such empirical evidence is based on data reflecting currently available options and not technologies that have been, or are being, supplanted.⁷⁹

Finally, it is well-established that there are economic limits on the ability of any organization to grow without bound.⁸⁰ It is therefore prudent to account for the impact of organizational costs on a firm's incentive to grow when estimating the future size of a

⁷⁹ As an example of a study of substitution patterns for a dynamic technology based on historical data, see Andre Boik, *Intermediaries in Two-Sided Markets: An Empirical Analysis of the US Cable Television Industry*, 8 AM. ECON. J.: MICROECONOMICS 256 (2016).

⁸⁰ This idea dates back to the seminal paper: Ronald Coase, *The Nature of the Firm*, 4 ECONOMICA 386 (1937).

digital platform, and not simply to assume linear or exponential growth.⁸¹

Platform Incentives. As we have already noted, the welfare effects arising from a platform's relative or absolute size depend on industry fundamentals and the nature of its conduct, so one must be leery of generalizations and recognize that platforms often serve two or more sides of putative markets. Sound public policy accounts for the welfare of all platform participants—not just those on one side.

To illustrate, consider the Baye-Morgan model of a two-sided market.⁸² Initially, consumers are domiciled in geographically separate towns served by local monopolists. Transportation costs prevent consumers from purchasing from stores in other locations, so they have no option but to pay monopoly prices. An entrepreneur invests a sizeable sum to create an online shopping platform that expands the options of consumers and merchants. Each local merchant can now pay the platform a fee to advertise its product on the platform and potentially gain access to consumers in distant towns. Likewise, consumers can pay to access the platform's website. This provides them with an option to purchase a product from a merchant in a distant town if it offers a better price than their local monopolist. If the platform is free to charge customers on each side of its two-sided market whatever fees it wishes, what fees will it set and how does this impact the welfare of its customers (e.g., consumers and merchants)?

Baye and Morgan show that the platform maximizes its profits by attracting consumers via low (potentially zero or even negative) access fees. This creates a virtuous circle, whereby merchants are willing to pay the platform for the privilege of advertising their prices in an attempt to attract consumers located far from their physical stores. The

⁸¹ By way of analogy, many doomsayers (dating back to the book published by Thomas Malthus in 1798) used exponential trend assumptions to make dire predictions concerning famine and (in the 20th century) depletion of fossil fuels. THOMAS MALTHUS, *AN ESSAY ON THE PRINCIPLES OF POPULATION* (1798).

⁸² Michael R. Baye & John Morgan, *Information Gatekeepers on the Internet and the Competitiveness of Homogeneous Product Markets*, 91 AM. ECON. REV. 454 (2001).

platform's pricing strategy induces more and more consumers to shop on its platform, providing firms stronger and stronger incentives to advertise on the platform to reach these consumers. Even though this strategy may ultimately (and naturally) result in a single or dominant online shopping platform, consumers are the unambiguous beneficiaries: They pay lower average prices and enjoy greater consumer surplus. Merchants, on the other hand, are unambiguously worse off; absent the platform, each merchant could charge monopoly prices to their local customers.

The Baye-Morgan model highlights that a platform's business decisions can have quite different effects on the welfare of customers on different sides of the market it serves: The creation of the platform benefits consumers and harms merchants. It follows that intervention policies can also have disparate effects in two-sided markets. For instance, banning the platform would benefit merchants but harm consumers. Expressed differently, policies enacted to protect businesses from the tactics of a dominant platform may harm consumers.

In contrast to policymakers who may solely focus on the welfare of customers on a single side of a two-sided market, platforms make business decisions that take into account the preferences and incentives of all its customers. In fact, in some instances, platform incentives are aligned with the total surplus of all platform participants, not merely a particular type of customer. To illustrate, consider the Baye-Sappington model of an online shopping platform.⁸³ The platform may choose to keep data on consumer transactions (e.g., their willingness to pay for a product) private, or not. Sophisticated consumers recognize that, absent privacy, a merchant might use prior transactions data to infer their reservation price. Unsophisticated consumers are naïve and do not take this into account. Baye and Sappington examine the unique perfect Bayesian equilibrium

⁸³ Michael R. Baye & David E. M. Sappington, *Revealing Transactions Data to Third Parties: Implications of Privacy Regimes for Welfare in Online Markets*, 29 J. ECON. & MGMT. STRAT. 260 (2020).

pricing strategies that arise in signaling equilibria with and without privacy. They conclude that “. . . total welfare, platform profits, and the welfare of sophisticated consumers are maximized when the platform provides transactions data to third parties. Consequently, under a laissez-faire policy that permits the platform to implement its preferred privacy policy, the platform will adopt the privacy policy that maximizes the welfare of sophisticated consumers. This privacy policy is not ideal for unsophisticated consumers, however. It is also not the best policy for all merchants.”

This illustrates that a dominant platform’s incentives may be more closely aligned with total welfare than the welfare of a particular individual or a group of participants (who may engage in rent-seeking or rent-protecting activities to influence policy). This is because two-sided platforms internalize externalities on the other side of the market.

Regulatory Incentives. In instances where platform incentives are not aligned with social welfare, one could in principle supplant platform incentives with regulation. It is important to recognize, however, that regulators are themselves economic actors and have preferences that may not perfectly align with social welfare. This raises the question “*Quis custodiet ipsos custodes?*” or “Who regulates the regulator?” Consider our example where a regulator imposes rules regarding the ability of a platform to display videos featuring people in blue suits. If the regulator dislikes content featuring people in red suits, what prevents her from censoring that content? Or, if the regulator is driven by other motivations—such as political success or campaign contributions—this could drive her to cater policies to the preferences of her median voter or median contributor rather than the preferences of all market participants.

Complexity. It goes without saying that the data, algorithms, and computer programs that underlie Big Tech markets are highly complex. This may make it difficult for elected officials and regulators with laudable intentions to: (a) identify and implement feasible remedies or regulations, (b) to identify problems worthy of scarce regulatory resources, and (c) to ensure that harm from unintended consequences does not outweigh

potential benefits of regulation.

By way of example, Section 1 of the Sherman Act states that “[e]very contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal.”⁸⁴ As a matter of economics, any useful contract necessarily constrains behavior in one way or another, thus rendering all of them illegal with a literal interpretation of the Sherman Act. It has taken years for courts to attempt to remedy this through various interpretations. As another example, it is well documented that airline regulation (stemming from concerns regarding the dominance of large carriers and their cost advantages over potential entrants) provided incumbents with incentives to compete in non-price attributes (free drinks, playing cards) that consumers did not value as much as lower fares.⁸⁵ Similarly, rate regulation of public utilities resulted in well documented distortions in their incentives to invest in capital equipment.⁸⁶

B. Other Regulatory Considerations

1. Heterogeneous Impact

While it is often convenient to couch policy in terms of “consumer welfare” or harm to competition, it is important to recognize that policies may have a heterogeneous impact on different market participants. Regulatory policy, therefore, often makes normative judgments regarding which consumers benefit and which are harmed by regulation. We conclude this section with two examples.

⁸⁴ Sherman Antitrust Act of 1890, 15 U.S.C. §§ 1–7.

⁸⁵ For a discussion of airline deregulation, see ELIZABETH E. BAILEY, DAVID R. GRAHAM & DANIEL P. KAPLAN, *DEREGULATING THE AIRLINES* (1986); JOHN R. MEYER & CLINTON V. OSTER, JR., *DEREGULATION AND THE FUTURE OF INTERCITY TRAVEL* (1987).

⁸⁶ For theoretical analyses, see Harvey Averch & Leland L. Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052 (1962); for empirical evidence, see Robert M. Spann, *Rate of Return Regulation and Efficiency in Production: An Empirical Test of the Averch-Johnson Thesis*, 5 BELL J. ECON. & MGMT. SCI. 38 (1974).

Consider first privacy regulation. As discussed earlier, the Baye-Sappington model predicts that a privacy policy that precludes a platform from sharing (or selling) transactions data to third parties harms sophisticated consumers while benefiting unsophisticated consumers. A laissez-faire policy results in the platform maximizing its profits by selling transactions data to third parties, and in-so-doing maximizes social welfare. Sophisticated consumers prefer this policy to intervention, while unsophisticated consumers fare better under regulation. While this result is specific to transactions privacy, it illustrates that some consumers may win while others lose as a result of a well-intentioned privacy policy. Likewise, their results imply that privacy policies may benefit some merchants at the expense of other merchants.

As another example, consider horizontal mergers. An et al. (2017) estimate a structural model of price competition on a platform and provide empirical evidence that competition differentially impacts different types of consumers.⁸⁷ Their results imply, among other things, that blocking mergers short of monopoly may benefit some consumers, but at the expense of others.

As discussed below, these and other aspects of regulatory decisions may result in policies that benefit some market participants, at the expense of other market participants and social welfare as a whole.

2. Rent Seeking and Regulatory Capture

Heterogeneous impact of regulatory policies provides incentives for individuals who benefit or are harmed by business or regulatory decisions to engage in lobbying and/or rent-seeking to enhance their own welfare at the expense of others. For example, the Baye-Sappington model is an example of an environment where certain merchants and/or consumers have an incentive to lobby or otherwise engage in rent seeking

⁸⁷ Yonghong An, Michael R. Baye, Yingyao Hu, John Morgan & Matt Shum, *Identification and Estimation of Online Price Competition with an Unknown Number of Firms*, 32 J. APPLIED ECONOMETRICS 80 (2017).

activities to promote privacy regulation prohibiting a platform from selling transactions data to third parties. Even ignoring the fact that expenditures on such efforts are socially inefficient, in their model such a policy not only reduces social welfare but harms other merchants and consumers.

In addition to rent seeking, regulatory capture is also potentially a concern. That is, regulators may themselves become dominated or reflect preferences of certain market participants rather than the “public interest.” While it is common to view regulatory capture as an industry “capturing” regulatory power, this need not be the case. Regulatory capture could occur regardless of whether one appoints the CEO of Arch Coal or the executive director of Greenpeace as the administrator of the EPA if their regulatory decisions reflect their own preferences rather than the public interest.

Regulatory capture may result in incumbents advocating for regulation to protect themselves from competition. For example, an incumbent with an inferior technology and/or data may advocate for technology- or data-sharing policies to protect their rents rather than to protect consumers. Or, an incumbent with superior data and/or technology may advocate for regulation to protect itself from competition by an innovator.⁸⁸ It is not always obvious that a regulator’s behavior is designed to protect only a subset of market participants; because regulatory compliance is costly, policies that appear to protect consumers may actually be designed to disadvantage rivals. For example, to the extent that it is more difficult for small firms to comply with privacy regulations, seemingly desirable regulations may merely be a guise to protect large incumbents by preventing entry or driving smaller firms out of the market.⁸⁹

⁸⁸ See, e.g., Justin Sherman, *Oh Sure, Big Tech Wants Regulation – on Its Own Terms*, WIRED (Jan. 28, 2020), <https://www.wired.com/story/opinion-oh-sure-big-tech-wants-regulationon-its-own-terms/>; Josh Constine, *Facebook Asks for a Moat of Regulations It Already Meets*, TECHCRUNCH (Feb. 17, 2020), <https://techcrunch.com/2020/02/17/regulate-facebook/>.

⁸⁹ James Campbell, Avi Goldfarb & Catherine Tucker, *Privacy Regulation and Market Structure*, 24 J. ECON. & MGMT. STRAT. 47 (2015). For a more detailed discussion of rent seeking and regulatory capture in the digital

3. Opportunism and Other Effects

Regulation can also result in distortions that stem from firms' incentives to exploit information asymmetries. For example, price regulation may be socially efficient when economies of scale or scope result in a single efficient producer, but subsidies may be required to induce efficient levels of output. Efficient price regulation and subsidies require information about firm costs, which, owing to the complexities discussed earlier that arise in Big Tech markets, may be difficult to obtain. Additionally, price regulated firms may reduce quality or distort costs in an attempt to enhance their profits or to increase subsidies. Economic theory predicts these distortions may arise because of moral hazard stemming from asymmetric information regarding actual demand and costs.⁹⁰

Distortions stemming from asymmetric information can also impact innovation. Because the regulator—not the firm—captures profits associated with innovation (either cost-saving or quality-enhancing), regulation may distort a firm's innovation incentives.

IV. MAKE AN EVIDENCE-BASED DECISION

This chapter has highlighted a plethora of factors which, as a matter of economic theory, may rationalize regulatory intervention or laissez-faire policies in Big Tech markets. It would be a mistake to simply cherry-pick theoretical possibilities supporting a particular approach. The issues underlying Big Tech industries are highly complex. Qualitatively, some factors (e.g., cost complementarities and economies of scope) may support a more hands-off approach, while others (e.g., naked attempts to enhance market power) may support intervention. Ultimately, it is necessary to quantify these qualitative factors to determine whether a specific type of intervention is likely to benefit or harm

economy, see Thom Lambert, *Rent-Seeking and Public Choice in Digital Markets*, in THE GAI REPORT ON THE DIGITAL ECONOMY (2020).

⁹⁰ For challenges associated with preventing a regulated monopolist from misrepresenting its costs, see, e.g., David P. Baron & Roger B. Myerson, *Regulating a Monopolist with Unknown Costs*, 50 ECONOMETRICA 911 (1982).

consumers and competition.⁹¹ It is also important to recognize that—owing to the complex nature of network effects in two-sided markets—quantifying all of these effects may be difficult. By way of example, if a qualitative problem on one side of a two-sided market is quantified, the associated remedy (e.g., divestiture or price regulation) may adversely impact participants on the other side of the market and/or unrelated markets served by the platform. Failure to include these effects in the quantitative calculus may result in unintended harm.

Likewise, it is important to recognize that intervention need not be a binary decision. By way of example, owing to economies of scale and scope, as well as complex network effects in two-sided markets, quantitative evidence may suggest that breaking up a large platform would ultimately harm rather than help consumers after aggregating across all products and services provided by the platform. Quantitative evidence might also inform whether regulators are likely to have the information required to engage in efficient price regulation. In these instances, quantitative evidence might indicate that a softer form of intervention (possibly requiring the platform to provide certain data to competitors at certain prices) would improve consumer welfare. Or, the quantitative evidence might indicate that it would not. Ultimately, protecting consumers and competition requires evidence-based decisions rather than decisions based on possibility theorems.

⁹¹ See, e.g., Joshua Wright, *Evidence-Based Antitrust Enforcement in the Technology Sector*, 3 ANTITRUST CHRON. (2013).

What *Brooke Group* Joined Let None Put Asunder: The Need for the Price-Cost and Recoupment Prongs in Analyzing Digital Predation

Timothy J. Muris* & Joseph V. Coniglio**

INTRODUCTION

Predation was once among the paradigmatic violations of §2 of the Sherman Act¹ and one of the most controversial parts of antitrust law.² In the 1970s, as the consumer welfare revolution in antitrust began to overthrow an old order of competition policy seeking intellectual cover in flawed legal and economic theories—an allegation that perhaps not unsurprisingly is now projected on the revolution itself³—reformulating a predation doctrine gone badly awry was necessary to protect consumers.⁴ With predatory pricing, a rule that once protected even dominant local firms from the “financial pinch” of competition,⁵ and condemned successful retail giants like A&P precisely because of their efficiency,⁶ gave way to the sensible economic analysis of a broad spectrum of

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¹ See, e.g., *Standard Oil Co. of New Jersey v. United States*, 221 U.S. 1 (1911); *United States v. Aluminum Co. of America*, 148 F.2d 416 (2d. Cir. 1945).

² See Terry Calvani & James M. Lynch, *Predatory Pricing Under The Robinson-Patman and Sherman Acts: An Introduction*, 51 ANTITRUST L.J. 375 (1982) (“Perhaps the most controversial antitrust issue today in both the literature and case law is that of ‘predatory pricing.’”).

³ See, e.g., Barry C. Lynn, *No Free Parking for Monopoly Players: Time to Revive Anti-Trust Law*, THE NATION (June 8, 2011) (“A generation ago, when a small crew within the Reagan administration set out to clear the way for a radical reconcentration of power, they did so not by openly assailing our anti-monopoly laws but by altering the intellectual frames that guide how we enforce them. . . .”).

⁴ See generally Bruce H. Kobayashi & Timothy J. Muris, *Chicago, Post-Chicago, and Beyond: Time To Let Go Of the 20th Century*, 78 ANTITRUST L.J. 147 (2012) (discussing the importance of predatory pricing to the Chicago School and other reformers).

⁵ *Utah Pie Co. v. Continental Baking Co.*, 386 U.S. 685, 700 (1967).

⁶ See Timothy J. Muris & Jonathan E. Nuechterlein, *Antitrust in the Internet Era: The Legacy of United States*

scholars and judges.⁷ Among the many reformers, none were more influential than Professors Donald Turner and Phillip Areeda, whose landmark 1975 article articulated what remains the defining statement on predatory pricing law.⁸ Their reformation exposed the then existing predation dogmas and would become the foundation for the new order embodied by the Supreme Court in *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*,⁹ which remains a bedrock of Sherman §2 jurisprudence.

This modern view of antitrust has been under attack, as the spirit of antitrust counter-reformation grows in the academy,¹⁰ progressive think tanks,¹¹ and Congress.¹²

v. A&P, 54 REV. IND. ORGAN. 651, 662 (2019) (“Ultimately, the government’s case had nothing to do with any genuine theory of *consumer* harm and everything to do with protecting companies at all levels of the grocery business from A&P’s disruptive efficiency—no matter what the ensuing cost to consumers.”).

⁷ See *id.* at 671-72; see also William Kovacic, *The Intellectual DNA of Modern U.S. Competition Law for Dominant Firm Conduct: The Chicago/Harvard Double Helix*, 2007 COLUM. BUS. L. REV. 1, 42-50 (highlighting the role of both Chicago and Harvard scholars in reforming predation doctrine).

⁸ Phillip Areeda & Donald F. Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 HARV. L. REV. 697 (1975); see Kovacic, *supra* note 7, at 6-7 (“[T]wo Harvard School scholars, Phillip Areeda and Donald Turner, spurred the rethinking of modern predatory pricing doctrine with their proposal in 1975 that a dominant firm can ordinarily be presumed to be acting legally under the U.S. antitrust laws when it sets its prices at or above its average variable costs. . . . Areeda and Turner, more than any other commentators, catalyzed the retrenchment of liability standards and motivated a more general and fundamental reassessment of U.S. doctrine governing dominant firms.”) (footnote omitted).

⁹ 509 U.S. 209 (1993).

¹⁰ See, e.g., MAURICE E. STUCKE & ARIEL EZRACHI, *COMPETITION OVERDOSE: HOW FREE MARKET MYTHOLOGY TRANSFORMED US FROM CITIZEN KINGS TO MARKET SERVANTS* (2020); Ganesh Sitaraman, *How to Regulate Tech Platforms*, THE AMERICAN PROSPECT (Nov. 8, 2018); TIM WU, *THE CURSE OF BIGNESS: ANTITRUST IN THE NEW GILDED AGE* (2018); Mark Glick, *The Unsound Theory Behind the Consumer (and Total) Welfare Goal in Antitrust*, 63 ANTITRUST BULL. 455 (2018).

¹¹ See, e.g., Fiona Scott Morton, Washington Center for Equitable Growth, *Reforming U.S. Antitrust Enforcement and Competition Policy* (2020); THE NEW CENTER, *TAKE ON BIG TECH: PROMOTING COMPETITION* (2019); OPEN MARKETS INSTITUTE, *AMERICA’S CONCENTRATION CRISIS: AN OPEN MARKETS INSTITUTE REPORT* (2018); MARSHALL STEINBAUM, ERIC HARRIS BERNSTEIN & JOHN STRUM, ROOSEVELT INST., *POWERLESS: HOW LAX ANTITRUST AND CONCENTRATED MARKET POWER RIG THE ECONOMY AGAINST AMERICAN WORKERS, CONSUMERS, AND COMMUNITIES* (2018); MARC JARSULIC, ET AL., CENTER FOR AMERICAN PROGRESS, *REVIVING ANTITRUST: WHY OUR ECONOMY NEEDS A PROGRESSIVE COMPETITION POLICY* (2016).

¹² Congressional interest has included a series of well-publicized hearings on antitrust issues associated with tech platforms. See *Online Platforms and Market Power, Part 1: The Free and Diverse Press: Before the H. Comm. on the Judiciary* (June 11, 2019); *Hearings: Online Platforms and Market Power, Part 2: Innovation and Entrepreneurship, Before the H. Comm. on the Judiciary* (July 16, 2019); *Hearings: Online Platforms and Market*

While the new economic framework of the consumer welfare revolution has always hosted a robust internal debate aimed at properly calibrating particular legal rules with the best and ever-evolving economic learning,¹³ the counter-revolutionaries find a *casus belli* in the rise of large technology companies like Alphabet, Amazon, Apple, and Facebook that, notwithstanding their great benefits in improving life in America and around the world, are said to represent the failure of antitrust law in the digital age.¹⁴ Commensurate with its importance to the success of the economic revolution in antitrust, the modern doctrine of predatory pricing embodied in both Areeda & Turner’s seminal article and the Supreme Court’s *Brooke Group* decision is now a central object of opprobrium.¹⁵

Power, Part 3: The Role of Data and Privacy in Competition, Before the H. Comm. on the Judiciary (Sept. 12, 2019); *Hearings: Online Platforms and Market Power, Part 4: Perspectives of the Antitrust Agencies, Before the H. Comm. on the Judiciary* (Nov. 13, 2019); *Hearings: Online Platforms and Market Power, Part 5: Competitors in the Digital Economy, Before the H. Comm. on the Judiciary* (Jan. 17, 2020); *Hearings: Online Platforms and Market Power, Part 6: Examining the Dominance of Amazon, Apple, Facebook, and Google, Before the H. Comm. on the Judiciary* (July 29, 2020). The hearings and surrounding investigation culminated in a recently released report with recommendations for congressional action, which is an exemplar of the neo-Brandeisian line of critique discussed below. See STAFF OF H. COMM. ON THE JUDICIARY, 116TH CONG., INVESTIGATION OF COMPETITION OF DIGITAL MARKETS: MAJORITY STAFF REPORT AND RECOMMENDATIONS (Comm. Print 2020) [hereinafter HOUSE REPORT].

¹³ See generally Kobayashi & Muris, *supra* note 4, at 159-166 (highlighting internal debates between Chicagoan scholars and their anticipation of many “post-Chicago” critiques).

¹⁴ See, e.g., Lina M. Khan, *Amazon’s Antitrust Paradox*, 126 YALE L.J. 710, 737 (2017) (“The current framework in antitrust fails to register certain forms of anticompetitive harm and therefore is unequipped to promote real competition—a shortcoming that is illuminated and amplified in the context of online platforms and data-driven markets.”).

¹⁵ See *id.* at 803 (“In order to capture these anticompetitive concerns, we should replace the consumer welfare framework with an approach oriented around preserving a competitive process and market structure. . . . More specifically, restoring traditional antitrust principles to create a presumption of predation . . . by dominant platforms could help maintain competition in these markets.”); see also Clara Hendrickson & William A. Galston, *Big Technology Firms Challenge Traditional Assumptions About Antitrust Enforcement*, BROOKINGS (Dec. 6, 2017) (writing that “it is time to abandon the Chicago school dictum that predatory pricing is ‘rarely tried’ and ‘rarely successful’”). Of course, not all reform-minded commentators agree that predation doctrine is outdated. See, e.g., Robert Litan, *A Scalpel, Not an Axe: Updated Antitrust and Data Laws to Spur Competition and Innovation*, at 5, PROGRESSIVE POL’Y INST. (Sept. 2018) (arguing that “[s]everal of the more ‘populist’ antitrust reform proposals—going backward in time to interpret the antitrust laws as protecting competitors rather than the competitive process, reworking merger law to

There are two main camps of antitrust reactionaries.¹⁶ The first, associated with what has come to be known as the “New Brandeis Movement,”¹⁷ seeks to replace the consumer welfare standard wholesale and return to the old order of “protect[ing] the ‘opportunity’ of the citizen producer.”¹⁸ For predatory pricing, commentators associated with this school suggest eliminating *Brooke Group*’s requirement that the “predating” firm have a reasonable likelihood of recouping profits lost from below cost pricing.¹⁹ The other cadre of counterrevolutionaries, while retaining the consumer welfare standard, promise to reinvigorate antitrust analysis through the incorporation of “new” economic theories of harm and the recognition of supposedly unique characteristics of digital markets.²⁰ To address predation, these revisionists suggest softening *Brooke Group*’s requirement of

achieve other objectives for which it is ill suited, changing the law on predatory pricing, or regulating the tech giants as public utilities—are either unnecessary or potentially counter-productive”).

¹⁶ See, e.g., A. Douglas Melamed & Nicholas Petit, *The Misguided Assault on the Consumer Welfare Standard in the Age of Platform Markets*, 54 REV. INDUS. ORGAN. 741, 744-45 (2019) (distinguishing between the “New Brandeis” line of criticism that rejects the consumer welfare standard and a “progressive” critique that would maintain the broader consumer welfare framework).

¹⁷ For a manifesto, see, e.g., Lina M. Khan, *The New Brandeis Movement: America’s Antimonopoly Debate*, 9 J. OF EURO. COMP. LAW & PRACTICE 131 (2018).

¹⁸ Lynn, *supra* note 3. For Lynn’s extended treatment of the issue, see BARRY C. LYNN, *LIBERTY FROM ALL MASTERS: THE NEW AMERICAN AUTOCRACY VS. THE WILL OF THE PEOPLE* (2020).

¹⁹ See HOUSE REPORT, at 396 (“The Subcommittee recommends clarifying that proof of recoupment is not necessary to prove predatory pricing or buying, overriding the Supreme Court’s decisions in *Matsushita v. Zenith Ratio Corp.*, *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, and *Weyerhaeuser Company v. Ross-Simmons Hardwood Lumber Company.*”); Khan, *supra* note 14, at 791; see also Open Markets Institute, Letter from Open Markets Institute to House Antitrust Subcommittee, at 20, <https://static1.squarespace.com/static/5e449c8c3ef68d752f3e70dc/t/5ebde3dd0a67ce269cbc7b04/1589502948280/OMI-House-Letter-4.17.20.pdf> (urging legislative repeal of *Brooke Group*).

²⁰ See, e.g., GEORGE J. STIGLER CENTER FOR THE STUDY OF THE ECONOMY AND THE STATE, STIGLER COMMITTEE ON DIGITAL PLATFORMS FINAL REPORT (2019) [hereinafter STIGLER REPORT]. These commentators’ comfort with incorporating behavioral economics into antitrust analysis, see, e.g., *id.* at 67 (“Given the prevalence of behavioral effects in the digital economy, the measurement of consumer welfare must be carried out very carefully.”), would represent a notable departure from the Chicago and post-Chicago frameworks. See Joshua D. Wright & Judd E. Stone II, *Misbehavioral Economics: The Case Against Behavioral Antitrust*, 33 CARDOZO L. REV. 1517, 1537 (2012) (noting that “the assumption of firm rationality underlying price theory and game theory is, in turn, at the core of the Chicago School, Post-Chicago School, and the Harvard School approaches to antitrust”).

proving that a firm has priced below cost, which is said to be ill-suited to the so-called digital “platform” markets where the technology giants and many others compete.²¹

Having overcome the sirens’ song of 1960s’ structuralism by tying itself to the *Brooke Group* mast, predatory pricing law must now steer clear of the Scylla and Charybdis of the neo-Brandeisians and the progressive economists. Indeed, rather than reflect novel approaches to a complex area of antitrust law, these ideas mostly repeat the legal and economic thinking of earlier generations that the economic revolution in antitrust eclipsed both in theory and in practice.²² Specifically, in digital markets, the recoupment requirement that the neo-Brandeisians would eschew is essential to evaluate predatory pricing and protect consumers.²³ Furthermore, while the progressive economists who question the use of a price-cost test in digital markets raise important issues that may on occasion require nuanced application of the principles already articulated in *Brooke Group* and Areeda and Turner’s article, the legal and prudential necessities of a strict separation between antitrust law and price regulation—including the need for rules that generalist judges can administer in a system dominated by cases private litigants file—militate against holding firms liable for prices above an appropriate measure of costs.²⁴

This chapter proceeds in five parts. The first provides a brief history of the law and economics of predatory pricing doctrine in the United States, and how a revolution in

²¹ STIGLER REPORT, *supra* note 20, at 97.

²² As Lord Keynes famously said, “[p]ractical men who believe themselves to be quite exempt from any intellectual influence, are usually slaves of some defunct economist.” JOHN MAYNARD KEYNES, *THE GENERAL THEORY OF EMPLOYMENT INTEREST AND MONEY* 383 (1936).

²³ See Herbert Hovenkamp, *Is Antitrust’s Consumer Welfare Principle Imperiled?* 45 J. CORP. L. 101, 130 (2019).

²⁴ In the words of the leading Areeda-Hovenkamp treatise, “[o]nce we cross the threshold and permit prices above cost to be condemned as predatory, we throw the doors open to speculation about the pricing strategies of large firms. . . . Antitrust begins with the premise that all firms, even dominant firms, are permitted to compete aggressively and that hard competition is a desideratum rather than evil.” 3A PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 735 (4th ed. 2015).

economic and legal thinking spurred by Areeda and Turner's seminal work led to *Brooke Group* and replaced the regime typified by the Supreme Court's troubled decision in *Utah Pie Co. v. Continental Baking Co.*²⁵ The second surveys the basic objections to the current consensus on predatory pricing that the two groups of reactionaries have articulated, while the following two parts defend both the recoupment and price-cost prongs as requirements to win predatory pricing claims against digital firms. At bottom, efforts to divorce one prong from the other fail to overcome the powerful and lasting insights not just of Areeda and Turner, but of the very nature of antitrust as a legal regime "passed for the 'protection of competition, not competitors.'"²⁶ The last part contains concluding remarks.

I. THE LAW AND ECONOMICS OF PREDATORY PRICING

Predatory pricing was a defining antitrust offense when Sherman §2 came of age in *Standard Oil Co. v. United States*, in which amidst a backdrop of popular outcry²⁷ the Supreme Court found that John D. Rockefeller's oil trust had engaged in "local price cutting at the points necessary to suppress competition."²⁸ It has also been a consistent concern for those wary of antitrust overreaching.²⁹ Beginning with *United States v. Aluminum Co. of America*,³⁰ which involved predatory overbuying, antitrust policy on predation took a highly interventionist bent, as typified by subsequent decisions against

²⁵ 386 U.S. 685 (1967).

²⁶ *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 224 (1993) (citation omitted).

²⁷ See, e.g., IDA M. TARBELL, *THE HISTORY OF THE STANDARD OIL COMPANY* 156 (1904) ("[Rockefeller] applied underselling for destroying his rival's markets with the same deliberation and persistency that characterized all of his efforts, and in the long run he always won.").

²⁸ 221 U.S. 1, 43 (1911).

²⁹ See, e.g., John S. McGee, *Predatory Price Cutting: The Standard Oil Case*, 1 J. L. & ECON. 137 (1958). For a discussion of McGee's analysis and the predation claims in *Standard Oil*, see Kobayashi & Muris, *supra* note 4, at 157-61.

³⁰ 148 F.2d 416 (2d Cir. 1945) (Hand, J.).

the Great Atlantic and Pacific Tea Company (“A&P”)³¹ and in *Utah Pie Co. v. Continental Baking Co.*³² This old order, under which liability for above cost pricing could in effect be found without any likelihood that the conduct would increase market power or harm consumer welfare,³³ faced critical commentary from all corners of the law and economics communities,³⁴ but nowhere with greater influence than in Donald Turner and Phillip Areeda’s landmark article “Predatory Pricing And Related Practices Under Section 2 of the Sherman Act,”³⁵ now the modern standard for predatory pricing law.³⁶

A. Antitrust’s Old Order

Before Alphabet, Amazon, Apple, and Facebook were even a dream, there was A&P—a once great giant in the American economy.³⁷ As recounted by one commentator,

By 1929, when it became the first retailer to ever sell \$1 billion of merchandise in a single year, A&P owned nearly 16,000 grocery stores, 70 factories, and more than 100 warehouses. It was the country’s largest coffee importer, the largest butter buyer, and the second-largest baker. Its sales were more than twice those of any other retailer.³⁸

Like today’s high-tech giants, A&P’s pioneering business model leveraging scale,

³¹ *United States v. N.Y. Great Atl. And Pac. Tea Co.*, 67 F. Supp. 626 (E.D. Ill. 1946), *aff’d*, 173 F.2d 79 (7th Cir. 1949).

³² 386 U.S. 685 (1967); *see also* *United States v. Grinnell Corp.*, 384 U.S. 563, 576 (1966).

³³ *See Brooke Group*, 509 U.S. at 221 (noting the interpretation of *Utah Pie* as requiring only “a mere showing that the defendant intended to harm competition or produced a declining price structure”).

³⁴ *See infra* Part I.A.

³⁵ Areeda & Turner, *supra* note 8.

³⁶ *See* Herbert J. Hovenkamp, *The Areeda-Turner Test for Exclusionary Pricing: A Critical Journal*, 46 REV. INDUS. ORG. 209 (2015) (“Few works of legal scholarship have had the impact enjoyed by Areeda and Turner’s 1975 article on predatory and strategic pricing. Every federal circuit court except the Eleventh has embraced some variation of the test that Areeda and Turner proposed. The Supreme Court has come very close to adopting it as well.”) (citations omitted).

³⁷ A&P was such an important part of America during its heyday that the young John Updike made it both the setting and the title of his best-known short story. *See* John Updike, *A&P*, THE NEW YORKER, at 22 (July 22, 1961). When Updike died in 2009, one journalist remarked: “I remember reading his short story ‘A&P’ in high school. Of course, everybody remembers reading ‘A&P’ in high school. It is perhaps Updike’s most widely anthologized work, this brief, bright jewel of a story about a young grocery clerk and his pointless act of gallantry.” Julia Keller, *John Updike at the A&P*, CHI. TRIB. (Feb. 1, 2009).

³⁸ Marc Levinson, *Monopoly in Chains: Antitrust and The Great A&P*, 12 CPI ANTITRUST CHRON. 2, 4 (2011).

vertical integration, and data-based innovation enabled then unprecedented consumer benefits, including lower prices, widespread availability and choice, and improved nutrition.³⁹ These good deeds would not go unpunished, as the A&P received a maelstrom of public criticism and government scrutiny commensurate with the degree of its creative disruption of the *status quo*.

To curb the success of chain stores like A&P, Congress passed the Robinson–Patman Act of 1936 (RPA), originally named “the Wholesale Grocer’s Protection Act.”⁴⁰ The Act prohibits selling “commodities of like grade and quality” at different prices to different buyers, with exceptions; for example, a seller may defend such differential pricing to buyers on the ground that it makes “due allowance for differences in the cost of manufacture, sale, or delivery” or is necessary to “meet” competition.⁴¹ The main effect of the Act on A&P and other chain stores was to make it harder for them to obtain goods at lower wholesale prices than their smaller competitors.⁴²

Unsatisfied with the RPA, in 1944 the DOJ sued A&P and its key executives for *criminal* violations of the Sherman Act, including predatory pricing. Notwithstanding the immense value it created for consumers, the company was now lampooned as a “gigantic blood sucker” in part because it “sells food cheaply in its own stores.”⁴³ Instead of a robust case on the merits, the government vaguely accused A&P of engaging since 1925 in a pricing policy whereby “in meeting competition in certain sections [A&P] has so lowered prices as to result in stores in those sections being operated at a loss” so as “to undersell retail competitors and to off-set losses incurred in selected areas at a profit rate below cost

³⁹ Muris & Nuechterlein, *supra* note 6, at 655.

⁴⁰ See Hugh Hansen, *Robinson-Patman Law: A Review and Analysis*, 51 FORDHAM L. REV. 1113, 1123 (1983).

⁴¹ 15 U.S.C. § 13(a), (b).

⁴² See MARC LEVINSON, *THE GREAT A&P AND THE STRUGGLE FOR SMALL BUSINESS IN AMERICA* 165 (2011).

⁴³ *Id.* at 229.

of operation.”⁴⁴ After the court of appeals affirmed, the government then sought to dismantle A&P, eventually settling when A&P agreed to close down the Atlantic Commission Company, an affiliate which operated as A&P’s purchasing agent for fresh produce and sold its surplus to third-party grocery stores.⁴⁵ A&P began its long decline almost immediately thereafter. Once America’s largest retailer for forty years, today A&P no longer exists.

A few contemporary scholars recognized the antitrust crusade against A&P as the bad law and even worse economics it in fact was. Regarding the predatory pricing claims, MIT economist Morris Adelman explained that “[n]o reasonable and prudent A&P management would have incurred losses to drive out competition because it would have been impossible to claim the pay-off,” because “[e]ntry into the food trade was so cheap and easy that any attempt to raise prices would immediately have resurrected competition.”⁴⁶ The government’s allegations regarding A&P’s supposed below-cost pricing were equally specious. As Adelman further highlighted, such findings rested more on accounting tricks than economic realities.⁴⁷ Related allegations of predatory buying by A&P, whereby A&P was alleged to have forced suppliers to give it deep discounts so that they raised prices to other competing stores with the effect of having the latter “pay part of the low cost of A&P’s operations,” were also faulty.⁴⁸ As Marc Levinson concluded, such a theory nonsensically “implies that manufacturers met their profit targets by raising prices to other stores to compensate for their price breaks to A&P.

⁴⁴ *United States v. N.Y. Great Atl. & Pac. Tea Co.*, 67 F. Supp. 626, 630-31 (E.D. Ill. 1946).

⁴⁵ Muris & Nuechterlein, *supra* note 6, at 663.

⁴⁶ MORRIS ADELMAN, A&P: A STUDY IN PRICE-COST BEHAVIOR AND PUBLIC POLICY 14 (1959). For Adelman’s initial analysis of the case, see Morris Adelman, *The A&P Case: A Study In Applied Economic Theory*, 63 Q.J. ECON. 238 (1949). Donald Turner likewise criticized the A&P decision. See Note, *Trouble Begins in the “New” Sherman Act: The Perplexing Story of the A&P Case*, 58 YALE L.J. 969 (1949).

⁴⁷ ADELMAN, *supra* note 46, at 15.

⁴⁸ LEVINSON, *supra* note 42, at 231.

But why would manufacturers have charged other retailers less if only A&P had paid more?”⁴⁹

Notwithstanding being “so sadly illiterate in economic facts and economic analysis,”⁵⁰ the Supreme Court would in effect codify this analysis two decades later in *Utah Pie Co. v. Continental Baking Co.*⁵¹ The defendants there were several national frozen pie companies that had selectively lowered their prices in Salt Lake City to compete more effectively against plaintiff Utah Pie, a local company that controlled nearly two-thirds of the Salt Lake City pie market.⁵² None of these defendants plausibly hoped to gain more than a minority share of the relevant market; still less could any of them expect to drive all other competitors from that market and then raise their own prices to monopoly levels, as Utah Pie retained more than 45 percent of that market despite years of competition from national corporations.⁵³ The Supreme Court nonetheless upheld jury verdicts against the national pie companies because it was troubled that they had lowered prices in Utah and not elsewhere.⁵⁴ That tactic, the Court believed, was unduly hard on the local incumbent, which was family operated and had “only 18 employees.”⁵⁵ The Court held that antitrust should protect such small companies, even those with high local market shares, from “the financial pinch” they feel when selective price-cutting by larger

⁴⁹ *Id.*

⁵⁰ ADELMAN, *supra* note 46, at 16.

⁵¹ 386 U.S. 685 (1967); *see also* Ward S. Bowman, *Restraint of Trade by the Supreme Court: The Utah Pie Case*, 77 YALE L.J. 70, 74 (1967) (characterizing *Utah Pie* as holding that “with no evidence of any effect except an increase in competition, and with no showing of intent or of persistent sales below cost, non-uniform price cuts alone must create the violation”).

⁵² *Utah Pie Co. v. Continental Baking Co.*, 386 U.S. 685, 702 (1967).

⁵³ *Id.* at 689.

⁵⁴ *Id.* at 694-701.

⁵⁵ *Id.* at 689.

competitors forces them to “reduce [their] price[s] to a new all-time low in a market of declining prices.”⁵⁶

Like *A&P*, the Supreme Court’s decision in *Utah Pie* immediately received strong criticism from across the antitrust and industrial organization communities. Milton Handler, no Chicago Scholar, aptly remarked:

Isn’t the ultimate goal of antitrust a competitive economy with lower consumer prices? Of course, if a seller lowers prices and then raises them to higher levels after driving his competitors out of business, a classic antitrust violation has occurred. The [*Utah Pie*] opinion’s implication that discrimination leading to a general price decline may, alone, suffice to spell illegality is troublesome.⁵⁷

Indeed, while Justice Potter Stewart was also no Chicagoan, he made much the same point in his *Utah Pie* dissent:

[T]he Court has fallen into the error of . . . protecting competitors, instead of competition. . . . [The] cases [on which defendants relied] are said [by the majority] to be inapposite because they involved “no general decline in price structure,” and no “lasting impact upon prices.” But lower prices are the hallmark of intensified competition.⁵⁸

Rather than just rubberstamping the faulty reasoning of *A&P*, *Utah Pie* and other Warren Court antitrust decisions reflected a unilateral conduct enforcement norm whereby each firm’s “independence and right to be treated as other firms are treated have become values to be protected as ends in themselves.”⁵⁹

Following *Utah Pie*, the FTC filed three major cases involving predatory pricing claims, perhaps most notoriously against General Foods (“GF”) for allegedly trying to

⁵⁶ *Id.* at 700; see also Hovenkamp, *supra* note 23, at 91 (“Effectively, *Utah Pie* collected antitrust damages because it was forced to be a competitor rather than a monopolist.”).

⁵⁷ Milton Handler, *The Twentieth Annual Antitrust Review—1967*, 53 VA. L. REV. 1667, 1697 (1967).

⁵⁸ *Utah Pie*, 386 U.S. at 705-06 (Stewart, J., dissenting).

⁵⁹ See Thomas E. Kauper, *The “Warren Court” and the Antitrust Laws: Of Economics, Populism, and Cynicism*, 67 MICH. L. REV. 325, 333 (1968). This invocation of the “golden rule” in antitrust jurisprudence not only typifies the era’s program of positive economic freedom, but is similar to the program of ordoliberal law and economics scholars in Europe that was also popular in the post-World War II era given perceptions about the relation between concentration and totalitarianism. See generally Joseph V. Coniglio, *Economizing the Totalitarian Temptation: A Risk-Averse Liberal Realism for Political Economy and Competition Policy in a Post-Neoliberal Society*, 59 SANTA CLARA L. REV. 703, 713-16 (2020).

drive Proctor & Gamble (“P&G”) from various eastern U.S. coffee markets.⁶⁰ P&G had purchased a strong regional brand, Folgers, which it sought to expand nationwide, and a pro-consumer price war erupted when it entered the heartland of the strongest eastern firm, GF’s Maxwell House. Nonetheless, the FTC sued GF for *responding* to P&G’s price cutting, and the staff originally proposed the truly extraordinary remedy of mandatory trademark licensing—ignoring the adverse implications on GF’s property rights.⁶¹ The Commission rejected that remedy but filed the case in 1976 after an internal staff struggle requiring four formal Commission meetings.⁶²

B. The Legal and Economic Revolution

Few articles played a more formative role in the legal and economic revolution that would define modern antitrust law than Phillip Areeda and Donald Turner’s classic article on predatory pricing.⁶³ As with the multivolume treatise they would soon begin to publish, Areeda and Turner wished to develop a sensible rule that generalist judges could administer—especially in a system in which the vast majority of cases involved private litigants, not the government.⁶⁴ Criticizing the hitherto vague standards courts used to identify predation, the authors contrasted the rational profit-maximizing firm with the

⁶⁰ See Complaint, International Telephone and Telegraph Corporation, 104 F.T.C. 280 (Nov. 26, 1974); Complaint, General Foods Corp., 103 F.T.C. 204 (July 14, 1976); Complaint, E. I. DuPont de Nemours & Co., 96 F.T.C. 653 (April 5, 1978).

⁶¹ See Timothy J. Muris, *Will the FTC’s Successes Continue?*, 26 GEO. MASON L. REV. 1411, 1424 (2019).

⁶² One of us participated in the Commission meetings opposing the case, as discussed in the conclusion below.

⁶³ See William E. Kovacic, *Failed Expectations: The Troubled Past and Uncertain Future of the Sherman Act as a Tool for Deconcentration*, 74 IOWA L. REV. 1105, 1145 (1989); see also Joshua D. Wright, *What Would Predatory Pricing Law Be Without John McGee? A Reply To Professor Leslie*, 85 S. CAL. L. REV. POSTSCRIPT 60 (July 2012) (highlighting the unique importance of Areeda and Turner’s article in shaping predation doctrine).

⁶⁴ In fact, Areeda and Turner’s approach represented a middle ground between Chicagoans Frank Easterbrook, who advocated for a broad rule of per se legality, see Frank H. Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 263 (1981), and Richard Posner, who criticized the Areeda and Turner rules as too permissive and advocated for an equally efficient competitor standard. See Richard A. Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925 (1979).

strategic predator who may not engage in short-run profit-maximizing, as when it prices below its marginal costs.⁶⁵ As Areeda and Turner emphasize, however, marginal costs can be difficult to identify in practice.⁶⁶ While it may differ on occasion from marginal cost, Areeda and Turner proposed average variable cost as a surrogate for determining whether a firm is engaging in profit-maximizing behavior, which can reasonably be determined from actual business records.⁶⁷

By analyzing whether a firm prices below its average variable costs, courts can thus separate legitimate pricing from that which may be anticompetitive. Requiring firms to prove that their pricing falls below their average variable costs thus provides a useful screen for determining when low prices violate the antitrust laws. As Areeda and Turner explain, such a screen functions to protect equally efficient competitors and ensures that firms are not penalized for rational short-run profit maximizing behavior: “[e]xclusion by charging prices equal to average cost is also competition on the merits—only those potential entrants who cannot survive at the efficiency-related price are kept out.”⁶⁸ Furthermore, while predating liability on a requirement that a firm prices below average variable cost creates a risk of false negatives when marginal cost exceeds average variable cost, in this scenario the firm is nearing capacity constraints and predation is unlikely because, as the authors state, “the loss of profits would be most severe and new demand could not be easily absorbed by the predator.”⁶⁹

⁶⁵ Areeda & Tuner, *supra* note 8, at 703-16.

⁶⁶ *Id.* at 716-18.

⁶⁷ *Id.*; see also 3A AREEDA & HOVENKAMP, *supra* note 24, ¶ 741 (concluding that “the marginal-cost and average-cost standards differ very little when properly applied to defendants operating at an output equal to or greater than optimal capacity”); Einer Elhauge, *Why Above-Cost Price Cuts To Drive Out Entrants Are Not Predatory—and the Implications for Defining Costs and Market Power*, 112 YALE L.J. 681, 725 (2003) (affirming the average variable cost measure). A branch of accounting, cost accounting, assesses average variable costs. See generally MICHAEL W. MAHER, CLYDE P. STICKNEY & ROMAN L. WEIL, *MANAGERIAL ACCOUNTING* (8th ed. 2004).

⁶⁸ Areeda & Turner, *supra* note 8, at 706.

⁶⁹ *Id.* at 718.

To be sure, a firm may price above its average variable cost to exclude rivals through what is known as “limit pricing.” In this way, a monopolist in a hard to enter business can rationally maximize its profits in the long-run to prevent entry. Yet, as Areeda and Turner note, like pricing that is short-run profit-maximizing, such a practice lowers prices, as the antitrust laws are meant to encourage.⁷⁰ More fundamentally, Areeda and Turner argue that even if limit pricing were not competition on the merits in theory, determining the profit-maximizing price would result in the unadministrable exercise of trying to determine whether the short-run benefits to consumers outweigh the long-run harm from the reduction in entry.⁷¹ That is, a “rule forbidding reversal of a price reduction would impose on enforcement agencies and the courts administrative burdens that are not justified by the speculative benefits such a rule might bring.”⁷² In the face of such a regime, firms would engage in a “high-price policy in order to be safe” — the exact opposite behavior of what the antitrust laws should encourage.⁷³

The requirement that a firm sacrifice short-run profits by pricing below its average variable or marginal costs was, as Areeda and Turner made clear, only a necessary condition for unlawful predatory pricing. Additionally, predation will only make economic sense if the predator can both drive the rival from the market and successfully recover its losses.⁷⁴ These conditions capture the essence of the recoupment requirement that is central to the modern rule—namely, that a predator be able not only to exclude competitors, but also recover its losses and harm consumers in the process. Rather than constitute an article of faith for Robert Bork and the Chicago School, then Judge Breyer in his leading opinion in *Barry Wright Corp. v. ITT Grinnell Corp.* was one of the first to

⁷⁰ *Id.* at 705.

⁷¹ *Id.* at 708-09.

⁷² *Id.* at 709.

⁷³ *Id.* at 711.

⁷⁴ *Id.* at 698.

agree, and quoted Areeda and Turner directly on the issue.⁷⁵ As we saw above, both Adelman and Handler—again, neither a Chicagoan—in critiquing *A&P* and *Utah Pie* also emphasized the importance of recoupment in proving a predation claim.⁷⁶

While the justification for the average variable cost test sounds primarily in administrability, the wide consensus that existed for also requiring proof of recoupment is rooted in the understanding that antitrust law maximizes consumer welfare while minimizing error costs.⁷⁷ In complex areas like predatory pricing, where judges may struggle to distinguish anticompetitive and procompetitive behavior, they must take great caution not to condemn procompetitive behavior, given that the conduct alleged to be predatory inherently involves one of the main benefits to consumers of a market system: low prices.⁷⁸ In finding that a firm is merely pricing below its costs, courts thus run the risk of condemning conduct that in fact greatly benefits consumers. Through a recoupment requirement, antitrust law avoids “chill[ing] the very conduct the antitrust laws are designed to protect.”⁷⁹

Whereas the risk of false positives—condemning low prices—is acute, predatory pricing was not seen as an area where false negatives—allowing low prices that harm consumers—are likely to arise. As Areeda and Turner made clear, for a predator subsequently to raise prices it must not only drive its rival from the market, but it must also exercise market power to recoup its losses.⁸⁰ And yet, predation is a relatively

⁷⁵ 724 F.2d 227, 231-32 (1st Cir. 1983).

⁷⁶ See *supra* Part I.A.

⁷⁷ See, e.g., Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 26-29 (1984).

⁷⁸ *Grinnell*, 724 F.2d at 232 (“There is also general agreement that the antitrust courts’ major task is to set rules and precedents that can segregate the economically harmful price-cutting goats from the more ordinary price-cutting sheep, in a manner precise enough to avoid discouraging desirable price-cutting activity.”).

⁷⁹ *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 594 (1986).

⁸⁰ *Areeda & Turner*, *supra* note 8, at 698.

“expensive”⁸¹ form of exclusion, in large part because a war of attrition will be more costly for the predator than the prey precisely in view of the fact that, to win the war, it must expand its production.⁸² Furthermore, ease of entry would seem generally to be symmetrical with ease of exit: the easier it is for a firm to drive rivals out, the easier it will be for new rivals to enter the market and prevent the firm from recovering the losses suffered in its war of attrition; by contrast, if entry is difficult due to the necessity of large specific investments, an incumbent may at the same time have a harder time using predation to drive out existing rivals.⁸³ Unsurprisingly, the case law has not borne out claims about predation’s frequency.⁸⁴

While Areeda and Turner did not develop recoupment to the same extent as the price-cost requirement, this was not because they ignored its importance.⁸⁵ Instead, proving recoupment was likely thought to be easier than it is today, consistent with the lingering structuralist bias of the Harvard School at that time—that is, the once popular but since empirically rejected view that increasing concentration to levels today regarded

⁸¹ See Susan A. Creighton, et al., *Cheap Exclusion*, 72 ANTITRUST L.J. 975, 977 (2005).

⁸² ROBERT H. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* 149 (1978).

⁸³ *Id.* at 153; see also 3A AREEDA & HOVENKAMP, *supra* note 24, ¶ 729 (“One factor bearing on the ease of entry is the magnitude and mobility of fixed resources needed in the industry. They affect both the cost of the new entrant’s failure and the likelihood of reentry. If the facilities needed to enter a market are readily shifted to other occupations, the consequences of failure will be smaller than when facilities are both costly and specific to the industry. At the same time, however, industry-specific assets are least likely to be withdrawn quickly from the market and thus lengthen the predation period and therefore the losses that a predator must bear.”).

⁸⁴ See 3A AREEDA & HOVENKAMP, *supra* note 24, ¶ 723 (“Historically, proven cases of predatory pricing have been rare.”).

⁸⁵ As Professor Hovenkamp has explained, given that “[n]early the entire balance of Areeda and Turner’s article was devoted to the proper price-cost test . . . the recoupment requirement is often not considered to be a part of the Areeda-Turner test, although it was clearly there.” Hovenkamp, *supra* note 36, at 211. Indeed, as we have noted, Areeda and Turner are clear that while “a monopolist pricing below marginal cost should be presumed to have engaged in predatory or exclusionary practice,” such a finding is a necessary but not sufficient condition of illegality.

as not problematic was positively correlated with the reductions in economic welfare that the recoupment prong was meant to measure.⁸⁶

It did not take long for the insights of Areeda and Turner and other critics of pre-1980s predation law to influence the Supreme Court. Following its decision in *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, where it noted in *dicta* that “predatory pricing schemes are rarely tried, and even more rarely successful,”⁸⁷ in *Brooke Group v. Brown & Williamson Tobacco Corp.*, the Court considered price discrimination allegations against Brown & Williamson, the third largest cigarette manufacturer by market share, by the plaintiff Liggett—which had been acquired by Brooke Group—whose share had declined from 20% to 2% by 1980.⁸⁸ To regain share, Liggett introduced an economy priced generic segment of cigarettes with a price point below those of the branded cigarettes offered by the larger oligopolists.⁸⁹ In response, Brown & Williamson entered the generic market and offered volume discounts to wholesalers, alleged to be below cost, in an attempt to exclude Liggett and ultimately raise prices to consumers through tacit coordination.⁹⁰

Ruling for Brown & Williamson, the Court articulated a two-pronged test that closely approximated Areeda and Turner’s logic of requiring both short-run profit sacrifice and recoupment to prove predation, effectively overruling *Utah Pie*. For plaintiffs to succeed on a predatory pricing claim, they must prove both that the pricing was “below an appropriate measure of its rival’s costs” and that the competitor had a

⁸⁶ See, e.g., Timothy J. Muris, *Improving the Economic Foundations of Competition Policy*, 12 GEO. MASON L. REV. 1, 4 (2003) (discussing structuralism’s fall from grace); Timothy J. Muris, *Economics and Antitrust*, 5 GEO. MASON L. REV. 303, 306 (1997) (“Although a majority of antitrust economists and legal scholars prior to [the concentration] debate almost certainly believed that concentration was a major problem, that consensus collapsed.”).

⁸⁷ 475 U.S. 574, 589 (1986).

⁸⁸ 509 U.S. 209, 214 (1993).

⁸⁹ *Id.*

⁹⁰ *Id.* at 215.

“dangerous probability [] of recouping its investment in below-cost prices.”⁹¹ In justifying a recoupment requirement, the Court not only reiterated the dicta in *Matsushita* about the rarity of predatory pricing, but highlighted the specific importance of preventing false positives, stating that “the costs of an erroneous finding of liability are high.”⁹²

II. THE ANTITRUST COUNTER-REVOLUTION

Criticisms of the modern predation doctrine are old hat. The Areeda-Turner article sparked many responses, beginning with F. M. Scherer,⁹³ then Director of the FTC’s Bureau of Economics and author of a leading industrial organization textbook, who had supported the General Foods case, including licensing the trademark of GF’s brand.⁹⁴ Judge Easterbrook, author of another major article on the subject,⁹⁵ even quipped that the main cost of predatory pricing was the sacrifice of the many trees used to produce the voluminous literature (a criterion that of course otherwise did not factor in to his error cost framework).⁹⁶ This century has continued to see criticism of the modern approach,⁹⁷ and the leading treatise, which still bears Areeda’s name, now written by Professor Hovenkamp, devotes a full volume, published in 2015, to the technical and legal debate,

⁹¹ *Id.* at 222, 224.

⁹² *Id.* at 226.

⁹³ F.M. Scherer, *Predatory Pricing and the Sherman Act: A Comment*, 89 HARV. L. REV. 869 (1976).

⁹⁴ See F.M. SCHERER & DAVID ROSS, *INDUSTRIAL MARKET STRUCTURE & ECONOMIC PERFORMANCE* 388 (3d ed. 1990).

⁹⁵ Frank H. Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 263 (1981).

⁹⁶ This literature included Oliver E. Williamson, *Predatory Pricing: A Strategic and Welfare Analysis*, 87 YALE L.J. 284 (1977); William J. Baumol, *Quasi-Permanence of Price Reductions: A Policy for Prevention of Predatory Pricing*, 89 YALE L.J. 1 (1979); Paul L. Joskow & Alan K. Klevorick, *A Framework Analyzing Predatory Pricing Policy*, 89 YALE L.J. 213 (1979).

⁹⁷ For some more recent critiques, see, e.g., Christopher R. Leslie, *Predatory Pricing and Recoupment*, 113 COLUM. L. REV. 1695 (2013) (recoupment requirement should be eliminated); Aaron S. Edlin, *Stopping Above-Cost Predatory Pricing*, 111 YALE L.J. 941 (2002) (limit price models); Patrick Bolton, Joseph F. Brodley & Michael H. Riordan, *Predatory Pricing: Strategic Theory and Legal Policy*, 88 GEO. L.J. 2239 (2000) (criticizing modern theory).

mostly in defense of the modern *status quo*.⁹⁸ Today, the debate has returned, with critics increasingly using digital markets to argue that predation law needs to be revised. It is to those critics we now turn.

A. Populism Again

The first group, the neo-Brandeisians, would eschew the recoupment requirement as part of their broader rejection of the consumer welfare standard.⁹⁹ Consider Lina Khan's widely cited *Yale Law Journal* student note in 2017, which argues that the consumer welfare standard, or the economics-based methodology of modern antitrust, has "fail[ed] to capture the architecture of market power in the twenty-first century marketplace."¹⁰⁰ With respect to predation, the introduction of a recoupment requirement to instantiate the consumer welfare criterion "collapsed the rich set of concerns that had animated earlier critics of predation, including an aversion to large firms that exploit their size and a desire to preserve local control."¹⁰¹ By rejecting the consumer welfare standard and the recoupment requirement, the neo-Brandeisians recommend "[r]evising predatory pricing doctrine to reflect the economics of platform markets" vis-à-vis a "presumption of predation for dominant platforms found to be pricing products below cost."¹⁰²

Some of the neo-Brandeisians' concerns with the recoupment requirement are severable from their broader critique of the consumer welfare standard, and focus on

⁹⁸ See 3A AREEDA & HOVENKAMP, *supra* note 24, ¶¶ 720-49. *But see* Herbert J. Hovenkamp & Fiona Scott Morton, *Framing the Chicago School of Antitrust Analysis* at 8 (Faculty Scholarship at Penn Law, 2019) (disagreeing with *Brooke Group's* implication that recoupment is not possible in oligopoly markets).

⁹⁹ In addition to Khan's article, other examples of recent literature critical of the *Brooke Group* standard from a neo-Brandeisian perspective include Marshall Steinbaum & Maurice E. Stucke, *The Effective Competition Standard: A New Standard for Antitrust*, 86 U. CHI. L. REV. 595, 608 (2020); Sandeep Vaheesan, *Reconsidering Brooke Group: Predatory Pricing in Light of the Empirical Learning*, 12 BERKELEY BUS. L. J. 81 (2015).

¹⁰⁰ *Id.* at 716.

¹⁰¹ Khan, *supra* note 14, at 730.

¹⁰² *Id.* at 791.

several large, successful digital companies, some of which have large market shares. For the neo-Brandeisians, the existence of network effects in digital markets creates winner-take-all or winner-take-most environments conducive to a strategy of “predatory growth” whereby firms sacrifice “growth over profits” to “tip” the market in their favor to achieve market dominance.¹⁰³ Such a phenomena, it is suggested, “undercuts a central premise of contemporary predatory pricing doctrine, which assumes that predation is irrational precisely because firms prioritize profits over growth.”¹⁰⁴

For the neo-Brandeisians, these network effects not only raise the specter of dominance in platform contexts, but also constitute high entry barriers that protect the winner.¹⁰⁵ Moreover, in addition to high network barriers to entry—which assure the predator that it can recoup its losses effectively—the neo-Brandeisins identify how digital markets can also have low barriers to exit, and thus incentivize predatory conduct in the first place, making predation in these markets a rational strategy “that Bork, and the courts, failed to consider.”¹⁰⁶ Specifically, for some digital firms, such as those in online retailing, exit is said to be relatively easy given that a firm seeking to buy a distressed rival suffering from predation can easily absorb the rival’s intangibles that Khan suggests comprise much of their value.¹⁰⁷

Consistent with their political aims, a *J’Accuse* is indispensable, and without question Amazon is the neo-Brandeisians’ favorite bogeyman.¹⁰⁸ Several allegations are commonly raised. After declining Amazon’s initial purchase offer, Quidsi, an online

¹⁰³ *Id.* at 786; see also Vaheesan, *supra* note 99, at 107 (“In some cases, network effects may be so strong that the market ‘tips’ to a single platform. Firms with large market shares, however, should not be allowed to induce market tipping through predatory pricing.”).

¹⁰⁴ Khan, *supra* note 14, at 753.

¹⁰⁵ *Id.* at 785 (noting that “network effects act as a form of entry barrier”).

¹⁰⁶ *Id.* at 772.

¹⁰⁷ *Id.*

¹⁰⁸ In addition to Khan’s article, see, e.g., AMERICAN ECONOMIC LIBERTIES PROJECT, UNDERSTANDING AMAZON: MAKING THE 21ST CENTURY GATEKEEPER SAFE FOR DEMOCRACY (July 2020).

retailer of baby products that Amazon ultimately acquired and which owned Diapers.com, is alleged to have faced 30% price cuts from Amazon for its retail baby products, as well as spurred the introduction of Amazon Mom, which provided customers with additional discounts.¹⁰⁹ Weary of the price war, Quidsi finally agreed to sell to Amazon, who then allegedly raised its prices and reduced Amazon Mom.¹¹⁰ For the neo-Brandeisians, the Quidsi example encapsulates the error of requiring proof of recoupment in digital markets: not only do “online retailers like Quidsi face high entry barriers,” but also “relatively low exit costs typical of brick and mortar retailers.”¹¹¹ Rather than representing competition on the merits, Amazon’s conduct is said to have “sent a clear message to potential competitors—namely that, unless upstarts have deep pockets that allow them to bleed money in a head-to-head fight with Amazon, it may not be worth entering the market.”¹¹²

Other reasons for eliminating the recoupment requirement highlight the supposed proclivities of digital firms to “raise prices years after the original predation, or raise prices on unrelated goods, in ways difficult to prove at trial,” as well as “raise prices through personalized pricing or price discrimination, in ways not easily detectable.”¹¹³ Here again, the neo-Brandeisians attack Amazon. Besides its conduct toward Quidsi, Amazon is said to have priced bestselling eBooks below cost, which ultimately led to its domination of the market.¹¹⁴ While Amazon’s practices escaped scrutiny during the DOJ’s lawsuit against Apple, the neo-Brandeisians suggest that Amazon may have obscured subsequent price hikes through both “rapid, constant price fluctuations and personalized

¹⁰⁹ Khan, *supra* note 14, at 769.

¹¹⁰ *Id.* at 769-70.

¹¹¹ *Id.* at 772.

¹¹² *Id.* at 772-73.

¹¹³ *Id.* at 791.

¹¹⁴ *Id.* at 756.

pricing.”¹¹⁵ Moreover, Amazon is said to have recouped its eBook profits in other markets in ways other than raising prices, including by exacting higher fees from book publishers, which is suggested to be beyond the scope of current antitrust doctrine.¹¹⁶

Besides discussing Quidsi and Ebooks, the recently released Report of the Majority Staff in the U.S. House Judiciary’s Subcommittee on Antitrust, Commercial, and Administrative Law’s identifies other instances involving alleged predation by Amazon. The Report claims that Amazon has priced several of its Echo products “below cost in an attempt to corner the market for those devices and adjacent markets,” and appears to find a smoking gun in Amazon’s CEO Jeff Bezos’s statement during the Subcommittee’s hearings that Echo is “often on promotion, and sometimes when its it’s on promotion it may be below cost.”¹¹⁷ Furthermore, promotional bundles or steep discounts for Alexa, Amazon’s voice assistant, are also implicated in “a predatory pricing strategy to increase its sales of smart home devices by pricing its products below cost.”¹¹⁸ The Report further notes, without explanation, that Amazon’s alleged predation of smart home devices creates significant barriers to entry, perhaps as a nod to the game-theoretic literature.¹¹⁹

The two other predation claims raised in the Report more directly implicate Amazon’s broader retail practices. The Report claims that “[t]he most prominent example of Amazon’s use of strategic losses to lock customers into the platform’s ecosystem is its popular membership program, Amazon Prime.”¹²⁰ The Report describes Amazon Prime as a “loss-leader” and references rival complaints that “Amazon is ‘[u]nderpricing Prime

¹¹⁵ *Id.* at 762-63.

¹¹⁶ *Id.* at 765-66.

¹¹⁷ See HOUSE REPORT, at 301.

¹¹⁸ *Id.* at 312.

¹¹⁹ *Id.* See, e.g., Bolton et al., *supra* note 97, at 2265.

¹²⁰ *Id.* at 297.

to consumers to build a huge and highly targetable share of ecommerce demand.”¹²¹ The Report also suggests that Amazon’s “Can’t Realize Any Profit” policy was deployed in a predatory manner, including by allegedly pricing below-cost on products including ABCBabyFormula.¹²²

B. Rejected Economics, Redux

Whereas the neo-Brandeisians primarily criticize the recoupment requirement and the consumer welfare standard that helped produce it, another cadre of counter-revolutionaries, while remaining within a broader consumer welfare framework, appear to instead focus on eliminating *Brooke Group*’s requirement that the predator’s pricing be below an appropriate measure of costs before it is proscribed.¹²³ In a noteworthy report on digital markets from the Stigler Center at the University of Chicago, a group of well-known antitrust commentators find that “[p]redatory pricing law should be modified so that it will be better able to combat anticompetitive pricing by digital platforms and other firms,” lamenting that predation law has “been construed to protect only rivals that are equally efficient at the time of the conduct at issue and thus to disadvantage smaller rivals

¹²¹ *Id.* at 298-99.

¹²² *Id.* at 300-01.

¹²³ There is a current to extend the price-cost test to areas beyond predatory pricing, such as conditional pricing practices, see, e.g., Timothy J. Muris & Vernon L. Smith, *Antitrust and Bundled Discounts: An Experimental Analysis*, 75 ANTITRUST L.J. 399 (2011); Steven C. Salop, *The Raising Rivals’ Cost Foreclosure Paradigm, Conditional Pricing Practices, and the Flawed Incremental Price-Cost Test*, 81 ANTITRUST L.J. 371 (2017). Elimination of the price-cost test for predatory pricing claims (where it is less controversially applied) risks opening a Pandora’s box that would risk condemning widespread business practices beyond low prices that generally benefit consumers. Indeed, courts have favored applying price-costs tests to conditional pricing practices: for the single product case or “loyalty discounts,” see, e.g., *Concord Boat Corporation v. Brunswick Corporation*, 207 F.3d 1039 (8th Cir. 2000); with respect to the multi-product case or “bundled discounts,” see, e.g., *Cascade Health Solutions v. PeaceHealth*, 502 F.3d 895 (9th Cir. 2008). See also Benjamin Klein & Andres V. Lerner, *Price-Cost Tests In Antitrust Analysis Of Single Product Loyalty Contracts*, 80 ANTITRUST L.J. 631, 634 (2016) (finding in the loyalty discount context that the price-cost test is the “essential economic factor that determines the ability of equally efficient rivals to compete” in cases, such as predatory pricing, where price is “the predominant mechanism of exclusion”).

that have not yet reached efficient scale.”¹²⁴ This construction, of course, follows directly from the requirement that a predator’s pricing be below its marginal costs, or a surrogate such as average variable costs, suggesting that these critics would support evaluating predatory pricing under the rule of reason consumer-welfare test found in Section 1 cases.¹²⁵

Some commentators see the economics of platforms as grounds to oppose a price-cost assessment as a necessary condition for finding digital firms liable for predatory pricing. Platforms are typically understood as multi-sided markets that both overcome transaction costs and are characterized by mutual, positive, and indirect network effects—the more buyers that use the platform, the more valuable it is to sellers, and vice versa.¹²⁶ For Jason Furman, an economist in the Obama administration, the complexity of platform pricing suggests that the very administrability issues that motivated Areeda and Turner’s price-cost test counsel against its use in these contexts: “Multi-sided markets have prices which are dependent between sides, meaning they may not closely reflect costs on each side of the market. This could appear to suggest either uncompetitively high margins or below cost predatory pricing when in fact neither is the case.”¹²⁷ Indeed,

¹²⁴ STIGLER REPORT, *supra* note 20, at 97.

¹²⁵ Cf. Bolton et al., *supra* note 97, at 2271 (noting that “[a] cost standard can be faulted as difficult and expensive to prove, and also under-inclusive because prices above cost can be both predatory and injurious to competition”); Steven C. Salop, *Exclusionary Conduct, Effect on Consumers, and the Flawed Profit-Sacrifice Standard*, 73 ANTITRUST L.J. 311 (contrasting the price-cost paradigm used in predatory pricing with the foreclosure paradigm where conduct is evaluated using the rule of reason).

¹²⁶ See, e.g., Jean-Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets*, 1 J. EUR. ECON. ASS’N 990 (2003); see also Timothy J. Muris, *Payment Card Regulation and the (Mis)application of the Economics of Two-Sided Markets*, 2005 COLUM. BUS. L. REV. 515, 519 (2005).

¹²⁷ JASON FURMAN ET AL., UNLOCKING DIGITAL COMPETITION, REPORT OF THE DIGITAL COMPETITION EXPERT PANEL 89 (Mar. 2019). See also David S. Evans & Richard Schmalensee, *Applying the Rule of Reason to Two-Sided Platform Businesses*, 26 U. MIAMI BUS. L. REV. 1, 8-9 (2018).

platforms can even involve negative prices on one side of the platform, which might be viewed as inherently predatory even though they maximize profits across the platform.¹²⁸

Formulating a price-cost test that reflects these market realities can thus be difficult because a platform's profitability depends not only on the net price—namely, the sum of the prices on both sides of the market—but also on the price structure, which is the ratio between the two prices.¹²⁹ Focusing on the net price only, as Michael Katz explains, “ignores the critical lesson of the research literature that, in multi-sided markets, the price structure, as well as the price levels, matter for competition and welfare.”¹³⁰ Furthermore, digital platforms often bifurcate their pricing by charging both “access” and “usage” fees depending on multiple factors, including the difficulty of monitoring usage and the nature and degree of the externalities on the platform.¹³¹ This can exacerbate the difficulties of using a price-cost test to evaluate predation by digital platforms.

The difficulties with using net prices in platform businesses also stem from the fact that “two-sided prices can miss predation by mistaking recoupment for two-sided pricing.”¹³² This concern is similar to one highlighted by the neo-Brandeisians. But whereas the neo-Brandeisians critique the traditional predation model out of a concern that digital predators could recoup in a market other than the one in which the predation occurred—a spatial modification—this issue raises the possibility of “simultaneous recoupment”—a temporal modification to the traditional two-stage predation model, where a firm may predate on one-side of platform while recouping on the other side of the market.¹³³ In measuring whether pricing is below cost by viewing both sides of the

¹²⁸ See Evans & Richard Schmalensee, *supra* note 127, at 8-9; see also Muris, *supra* note 126, at 536 n.59.

¹²⁹ *Id.* at 518-20.

¹³⁰ Michael L. Katz, *Exclusionary Conduct in Multi-Sided Markets*, ORG. ECON. COOPERATION & DEV. 114 (2018).

¹³¹ See, e.g., David Evans & Richard Schmalensee, *The Industrial Organization of Markets with Two-Sided Platforms*, 3 COMPETITION POL'Y INT'L 151, 159-61 (Spring 2007).

¹³² Katz, *supra* note 130, at 114.

¹³³ See Kenneth G. Elzinga & David E. Mills, *Trumping the Areeda-Turner Test: The Recoupment Standard in*

market, the concern is that conduct that would otherwise be predatory may appear lawful precisely because the predator's price includes the exercise of the market power it is recouping, resulting in false negatives.¹³⁴

Notwithstanding these concerns, perhaps the principal issue progressive economists raise with applying a price-cost test to evaluate predation claims against technology platforms concerns a cost structure common in digital markets. It is well known that information goods often involve high fixed costs, with low variable costs of production, given significant economies of scale. While this phenomenon is not new to antitrust analysis, digital goods in some cases are believed to have *de minimis* or no marginal costs (which would be different than other goods that invariably have some physical cost associated with producing them).¹³⁵ For the economists in the Stigler Center Report, the zero marginal cost structure of digital markets thus “makes tests that require prices to be below incremental or variable cost almost impossible for a plaintiff to meet.”¹³⁶ Indeed, consistent with the dynamics of zero-pricing, these progressive economists also suggest that digital platforms “might be able to copy rivals’ innovations or otherwise increase the value of their services to consumers without pricing below cost.”¹³⁷

III. REPLY TO NEO-BRANDEISIANS

The neo-Brandeisian criticisms of the recoupment requirement are unpersuasive. Abandoning the recoupment requirement, as part of a broader rejection of the consumer

Brooke Group, 62 ANTITRUST L.J. 559, 569-70; 575-76 (1994) (discussing a simultaneous recoupment theory in *Brooke Group*).

¹³⁴ See Salop, *supra* note 125, at 358-59 (noting simultaneous recoupment can result in false negatives when evaluated by profit-sacrifice tests).

¹³⁵ STIGLER REPORT, *supra* note 20, at 34-39.

¹³⁶ *Id.* at 97.

¹³⁷ *Id.* at 90.

welfare standard, does not confront the very fundamental, still unanswered objections that have been raised for decades and that motivated the economic revolution. Moreover, recognizing that network effects may lead to platform dominance and entry barriers is not the same as showing predation to be a rational strategy in a way that justifies elimination of the recoupment requirement. To the contrary, the core justifications for a recoupment requirement are not specific to traditional industries, have long been articulated by scholars and commentators, and are all the more necessary in technology markets given these markets' demonstrable dynamism. Equally important, there is a notable dearth of empirical evidence suggesting anticompetitive predation exists, including the examples offered concerning Amazon.

A. Consumer Welfare and Competition

Each of us have addressed the problems associated with an antitrust policy untethered from a consumer welfare standard.¹³⁸ At its most basic level, the consumer welfare standard ensures that business conduct is condemned only when it harms competition, as opposed to merely competitors, so as to avoid the perverse results of earlier cases.¹³⁹ While business conduct that increases market concentration invariably harms some competitors, more is needed to find that the practice violates the antitrust laws given that harm to competitors is also an inevitable byproduct of competition on the merits, including efficiency enhancing behavior.¹⁴⁰ The consumer welfare standard remains the best way to separate procompetitive from anticompetitive increases in

¹³⁸ See, e.g., Timothy J. Muris & Jonathan E. Nuechterlein, *Chicago and Its Discontents*, 87 U. CHI. L. REV. 495 (2020); Joseph V. Coniglio, *Why The 'New Brandeis Movement' Gets Antitrust Wrong*, LAW360 (Apr. 24, 2018).

¹³⁹ Besides the predation cases discussed above in Section I.A, see, e.g., *United States v. Von's Grocery Co.*, 384 U.S. 270 (1966) (finding a merger between two retail groceries unlawful for having a combined share of less than 8% in a market where the four largest firms had an approximately 25% share).

¹⁴⁰ See, e.g., Harold Demsetz, *Industry Structure, Market Rivalry, and Public Policy*, 16 J. L. & ECON. 1, 1-3 (1973); see also Areeda & Turner, *supra* note 8, at 705 ("Superior products or service, successful innovation, or other effective competition on the merits always tends to exclude rivals.").

market concentration, making it essential to a well-functioning antitrust policy. The alternatives of the neo-Brandeisians and their allies—vague public interest standards that incorporate social and political values into everyday antitrust enforcement¹⁴¹—would require enforcers to make highly subjective judgements about how to apply controversial and value-laden concepts to particular antitrust cases and, in so doing, undermine what has for decades been a rigorous and economically grounded analysis that provided businesses with reasonable certainty and enforcers with the confidence to engage in sound enforcement.

Because predation claims involve low prices, regulatory humility is especially crucial.¹⁴² While the below-cost pricing requirement ensures that the pricing harms competitors, the recoupment requirement ensures that the low prices also harm competition—that is, consumers—and prevents antitrust law from condemning the very conduct it is supposed to encourage.¹⁴³ Divorced from a recoupment requirement, a below-cost pricing test would effectively replace a consumer welfare standard with an equally efficient competitor standard.¹⁴⁴ While it is, to be sure, important that businesses are allowed to compete on the merits, such an approach judges firm conduct based solely on a hypothetical standard—that is, the putative equally efficient competitor—rather than looking at the effects in the actual world, where such a competitor most certainly does not exist—the *raison d’etre* of the consumer welfare approach. Sole reliance on this

¹⁴¹ See, e.g., K. Sabeel Rahman & Lina Khan, *Restoring Competition in the U.S. Economy*, in UNTAMED: HOW TO CHECK CORPORATE, FINANCIAL AND MONOPOLY POWER 23 (2016).

¹⁴² Cf. *Verizon Commc’ns Inc. v. Law of Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 414 (2004) (“Mistaken inferences and the resulting false condemnations ‘are especially costly because they chill the very conduct the antitrust laws are designed to protect.’”) (quoting *Matsushita*, 476 U.S. at 594).

¹⁴³ As Justice (then-Judge) Breyer has explained, “the consequence of a mistake” in this area of law “is not simply to force a firm to forego legitimate business activity it wishes to pursue; rather, it is to penalize a procompetitive price cut, perhaps the most desirable activity (from an antitrust perspective) that can take place in a concentrated industry where prices typically exceed cost.” *Barry Wright Corp. v. ITT Grinnell Corp.*, 724 F.2d 227, 235 (1st Cir. 1983).

¹⁴⁴ See Richard A. Posner, *Exclusionary Practices and the Antitrust Laws*, 41 U. CHI. L. REV. 506, 519 (1974).

cost test, without real world knowledge of the feared effects of predation—likely long-run market power—greatly increases the possibility of judicial mistakes, and deprives consumers of the benefits of low prices.¹⁴⁵

The neo-Brandeisians’ core argument—that network effects drive winner-take-all market outcomes that make predation a more rational strategy in digital markets—fundamentally overstates the winner-take all nature of so-called platform markets. First, there is no settled definition of what constitutes a platform.¹⁴⁶ On the one hand, platforms appear throughout the economy: newspapers, video games, broadband providers, credit cards, and many other industries have all been called “platforms.” On the other hand, many of the firms often thought of as platforms in the academic literature, such as Amazon, have far less in common with other large digital firms like Alphabet than it does with traditional retailers, like Walmart. Simply put, special treatment for platforms, as contemplated by some, would soon struggle to separate the general antitrust rules from these purported exceptions.

Furthermore, many of these claimed platform markets do not in actuality reflect winner-take-all or winner-take-most environments that pose an inherent risk of enduring dominance through exclusionary strategies.¹⁴⁷ Indeed, while commentators have long recognized that other strategies that do not maximize profits in the short-run—such as limit pricing—may occur, they are typically deployed as arguments against a below-cost

¹⁴⁵ See Salop, *supra* note 123, at 386 (writing that “false negatives would be further increased if antitrust protection applied only to hypothetical equally efficient competitors, rather than focusing on whether the entry and competition by actual, real-world competitors would benefit consumers and competition”).

¹⁴⁶ See, e.g., Michael Katz & Jonathan Sallet, *Multisided Platforms and Antitrust Enforcement*, 127 YALE L.J. 2142, 2148 (2018) (finding that “there is a disturbing lack of consensus regarding what constitutes a multisided platform”).

¹⁴⁷ See Herbert Hovenkamp, *Antitrust and Platform Monopoly*, 130 YALE L.J. at 14 (forthcoming 2021) (“Notwithstanding overwhelming evidence to the contrary, digital platforms are often said to be ‘winner-take-all’ markets.”), https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=3194&context=faculty_scholarship.

pricing prong, not a recoupment requirement.¹⁴⁸ More importantly, while network effects may facilitate certain firms achieving and maintaining a dominant position, this is anything but an economic law of nature of the kind neo-Brandeisians have falsely attributed to the Chicago School.¹⁴⁹ Rather, and even more so relative to older platforms, many digital markets are characterized by consumers engaging in multi-homing, whereby they regularly use multiple competing platforms—increasing competition in the market.¹⁵⁰ In fact, regardless of what the neo-Brandeisians might assume, this practice may have been common for some time in multi-sided markets throughout the economy.¹⁵¹

Contrary to the polemics of the neo-Brandeisians, Amazon provides an excellent example of a so-called “platform” that faces intense competition and displays no signs of sliding toward dominance. While for the neo-Brandeisians “Amazon has marched toward monopoly by singing the tune of contemporary antitrust,”¹⁵² in reality Amazon competes in a highly competitive retail market. Even ignoring the numerous local and regional competitors and myriad products involved, there are many large firms nationally. Table 1 presents total sales of the nation’s largest retailers, showing not only how Amazon is still less than half the size of Walmart, but that there are several other retailers selling more than \$100 billion last year in the United States.

¹⁴⁸ See, e.g., Edlin, *supra* note 97 (discussing the possibility of exclusion through limit pricing).

¹⁴⁹ Khan, *supra* note 17, at 132 (2018) (“The Chicago School assumes that market structures emerge in large part through ‘natural forces.’”). But see Coniglio, *supra* note 59, at 712 n.30 (explaining how the neo-Brandeisians fail to distinguish between the views of the “classical liberals, who, like other early moderns, posited objectively true universal laws of nature (of which economics was a part), and the respective pragmatism and anti-realism of neoliberal thinkers like Posner and Friedman.”).

¹⁵⁰ See, e.g., Rochet & Tirole, *supra* note 126, at 991-94; see also Catherine Tucker, *Network Effects and Market Power: What Have We Learned in the Last Decade*, 32 ANTITRUST 72, 75-76 (2018).

¹⁵¹ See DAVID EVANS & RICHARD SCHMALENSEE, *PAYING WITH PLASTIC: THE DIGITAL REVOLUTION IN BUYING AND BORROWING* 146-47 (2d ed. 2005) (“Multi-homing is common in many multisided industries”).

¹⁵² Khan, *supra* note 14, at 716.

Table 1¹⁵³

Top 10 U.S. Retailers	2019 U.S. Retail Sales (in billions U.S. Dollars)
1. Walmart	399.8
2. Amazon.com	193.64
3. The Kroger Co.	122.28
4. Costco	111.75
5. Walgreens Boots Alliance	104.53
6. The Home Depot	102.17
7. CVS Health Corporation	88.51
8. Target	77.13
9. Lowe's Companies	65.51
10. Albertsons Companies	62.41

These companies compete both on and off-line, and their presence is growing in both channels. While they do not compete with each other in all product categories, there is more extensive overlap than many realize: for example, the super drug stores have large product offerings, virtually all of which are also sold by Walmart, Costco, Amazon (except for prescription drugs), and Kroger, and a great many by Target.

Even more to the point, the neo-Brandeisians fundamentally misunderstand the nature of competition in platform markets. At least since Schumpeter, it has been well understood that the competitive process includes not just static competition in deconcentrated industries, but dynamic or leapfrog competition between successive, dominant platforms.¹⁵⁴ As one of us explained twenty years ago:

¹⁵³ See National Retail Federation, *Top 100 Retailers 2020 List*, NRF <https://nrf.com/resources/top-retailers/top-100-retailers/top-100-retailers-2020-list> (last visited Sept. 16, 2020).

¹⁵⁴ See JOSEPH A. SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* 81-86 (1942) (discussing the process

Although the strong network effects theory emphasizes the difficulty that even a superior technology has in replacing a “locked-in” one, evidence of change is everywhere. The 20th century has produced a blizzard of such change, from prominent examples like the automobile replacing the horse and buggy to more simple ones, such as ballpoint replacing fountain pens. More recently, cassettes replaced eight-track tapes, compact discs replaced vinyl records, and video games have witnessed rapid change with Atari, Nintendo, Sony, Sega, and others vying to be *the* standard.¹⁵⁵

To infer, therefore, a lack of competitive entry that can discipline a predator from network driven barriers to entry is unwarranted. Indeed, this is particularly so in the very markets of concern to the neo-Brandeisians given that, relative to traditional manufacturing markets, the technology economy embodies even more disruptive and dynamic forms of competitive entry to discipline firms—a fact that might have surprised even Schumpeter, who was unsure about the ability for the “entrepreneurial spirit” to survive in late capitalism:

The success of Microsoft, Apple, Google, Amazon, and Facebook, to name the most prominent American cases, all involve the sort of entrepreneurial spirit that Schumpeter might have thought lost in late capitalism. Rather than disappear, the entrepreneurship embodied in these and other companies took a radically disruptive form, with many of the most valuable technology companies owing their prowess to either challenging powerful established players in traditional industries—such as Amazon—or the first movers in their then-emerging New Economy markets—such as Facebook.¹⁵⁶

Importantly, in the New Economy, competition among digital firms may not only involve a scrappy startup platform fighting to eclipse an established rival, but also large and highly capitalized rival platforms that are dominant in other markets.¹⁵⁷ For example, Amazon faces competition not only from the incumbent Walmart¹⁵⁸—competition that

of “creative destruction”).

¹⁵⁵ Timothy J. Muris, *The FTC and the Law of Monopolization*, 67 ANTITRUST L.J. 693, 721 (2000); *see also* Timothy J. Muris, *Is Heightened Scrutiny Appropriate for Software Markets?*, in COMPETITION, INNOVATION AND THE MICROSOFT MONOPOLY: ANTITRUST IN THE DIGITAL MARKETPLACE 83 (J. Eisenach & T. Lenard eds., 1999).

¹⁵⁶ Coniglio, *supra* note 59, at 732.

¹⁵⁷ *See, e.g.*, NICOLAS PETIT, *BIG TECH & THE DIGITAL ECONOMY* (2018) (discussing the “moligopoly” phenomenon).

¹⁵⁸ *See* Herbert Hovenkamp, *Antitrust Policy and Inequality of Wealth*, COMPETITION POL’Y INT’L ANTITRUST CHRON. (Oct. 2017) (“[O]ften highly innovative firms are relatively young upstarts facing older money and established technology. For example, one of Amazon.com’s principal targets . . . is Wal-Mart, which is

has only increased in light of the ongoing COVID-19 pandemic¹⁵⁹—but also from platform giants like Alphabet, who offer their own shopping services.¹⁶⁰ The upshot is simple: to engage in a successful predation campaign, digital firms must be prepared to overcome not only existing product market competitors and disruptive Schumpeterian startups, but other large platforms at least as well capitalized as themselves and more than able to survive a long, drawn out war of attrition.

B. The Continued Importance of the Recoupment Requirement

While rapid technological change is an understandable reason for wanting to revisit predation rules, changes should be rooted firmly in economic learnings to avoid harming consumers.¹⁶¹ Nevertheless, there is no firm empirical basis for holding that predation is a rational strategy for digital firms to exclude competitors that would justify elimination of the recoupment requirement.¹⁶² Certainly the allegations against Amazon do not support change. With Quidsi, besides offering no evidence that Amazon priced below its costs, Amazon would have fallen well short of the threshold for monopoly

substantially owned by the wealthiest family in the United States.”).

¹⁵⁹ See Pete Ryan, *Can Amazon Keep Growing Like A Youthful Startup?* THE ECONOMIST (June 18, 2020).

¹⁶⁰ See Daisuke Wakabayashi & Karen Weise, *Attention, Amazon Shoppers: Google Wants Some of Your Spending Money*, N.Y. TIMES (May, 15, 2019); Daniel Sperling-Horowitz, *Google Shopping Actions: A Major New Marketplace*, WEBRETAILER (Apr. 25, 2018).

¹⁶¹ See Timothy J. Muris, *How History Can Inform Practice in Modern U.S. Competition Policy* 4 (George Mason Law & Economics Research Paper No. 04-20, 2004) (“Developments in economic learning and changes in industrial conditions or technology are important guideposts to ensure that competition policy does not veer off into ineffective or harmful backwaters.”); see also Joshua D. Wright, *Abandoning Antitrust’s Chicago Obsession: The Case for Evidence-Based Antitrust*, 78 ANTITRUST L.J. 301, 306-07 (2011) (discussing the economic revolution’s commitment to empiricism).

¹⁶² For a survey of the modern literature, see Bruce H. Kobayashi, *The Law and Economics of Predatory Pricing*, in ANTITRUST LAW AND ECONOMICS 116 (Keith N. Hylton ed., 2010) (discussing empirical studies re-analyzing predation cases that suggest that the evidence is consistent with predatory pricing but noting that, in many of these studies, the evidence is also consistent with pro-competitive price competition). See also Joshua D. Wright & Judd E. Stone II, *Still Rare Like A Unicorn? The Case of Behavioral Predatory Pricing*, 8 J.L. ECON. & POL’Y 859 (2012) (concluding that “despite any number of game-theoretic models generating price predation in equilibrium, it remains as elusive as ever in the wild”).

power, even accepting the highly dubious notion that in this case a relevant online market can be properly defined.¹⁶³ Amazon had only a 43% share in U.S. *online* retailing for baby supplies, and a claim for attempted monopolization would have been a longshot at best given the requirement of specific intent and the growing shares of Walmart (23%) and Target (18%)—both of whom had a greater share than Quidsi. Recoupment was thus clearly unlikely.¹⁶⁴ Furthermore, not only was its acquisition of Quidsi cleared by the Federal Trade Commission during the Obama administration,¹⁶⁵ but as AEI’s Jeffrey Eisenach explains:

Far from demonstrating the shortcomings of current antitrust doctrine, the Diapers.com saga shows why focusing on protecting consumers rather than competitors remains the right approach. Consumers benefited twice: first because they were allowed to reap the benefit of Diapers.com’s entry, including lower prices from Amazon; second because Quidsi’s founders were rewarded for their entrepreneurship by the Amazon buyout, which ultimately enabled them to create the platform that is now driving real competition in the online retailing space: Jet.com, aka Walmart. And yes, they do sell diapers.¹⁶⁶

The neo-Brandeisian allegations regarding eBooks fare little better. As commentators who have studied the issue have concluded, Amazon’s prices for eBooks were not likely below its marginal costs.¹⁶⁷ Rather, just as with A&P decades ago, a

¹⁶³ See Khan, *supra* note 14, at 771 n.312. Such a market, however, is far too narrow, as “online” and “brick-and-mortar” are not distinct markets. Instead, online transactions constitute one channel in a commercial landscape increasingly populated by retailers that sell seamlessly through websites, apps, and brick-and-mortar stores, offering “omnichannel” experiences such as “click-and-collect” or “buy online and return in-store.” Similarly, brands offer goods not only through brick-and-mortar stores and their own websites, but also simultaneously through multiple, competing online stores such as Amazon, Walmart.com, eBay, and Google Shopping.

¹⁶⁴ See Herbert Hovenkamp, *Whatever Did Happen To The Antitrust Movement*, 94 NOTRE DAME L. REV. 583, 589 (2018) (noting that the neo-Brandeisian argument “never explains how a nonmanufacturing retailer such as Amazon could ever recover its investment in below-cost pricing by later raising prices, and even disputes that raising prices to higher levels ever needs to be a part of the strategy, thus indicating that it is confusing predation with investment”) (citations omitted).

¹⁶⁵ See Letter from Donald S. Clark, Sec’y, Fed. Trade Comm’n, to Gary W. Kubek, Debevoise & Plimpton LLP (March 23, 2011), https://www.ftc.gov/sites/default/files/documents/closing_letters/amazon.com-inc./quidsi-inc./110323amazonlubek.pdf.

¹⁶⁶ Jeffrey Eisenach, *Who Should Antitrust Protect? The Case of Diapers.com*, AEI IDEAS (Nov. 5, 2018), <https://www.aei.org/technology-and-innovation/who-should-antitrust-protect-the-case-of-diapers-com/>.

¹⁶⁷ See CHRIS SAGERS, U.S. V. APPLE: COMPETITION IN AMERICA 230-33 (2019) (discussing “several reasons to

predatory pricing violation against Amazon would penalize its dynamic and low-cost business model that challenged old-economy publishers—exactly the kind of business initiative that competition policy should encourage. In fact, the *eBooks* saga presents an excellent example of competitive dynamics in high-tech markets: namely, how an innovative and high-tech powerhouse like Amazon may face competition from another high-tech juggernaut like Apple to counter what is seen to be predatory behavior—even if, in that case, the courts did not see Apple’s competition as being on the merits.¹⁶⁸

These two Amazon examples highlight the mutually reinforcing nature that the below-cost and recoupment prongs play within the broader antitrust framework of protecting the competitive process and consumers in a way that generalist judges can administer. In some cases, while the ability to recoup may be questionable, it is evident that the firm is pricing above costs and thus competing on the merits and benefiting from an innovative business model, as in the Amazon e-Books example. In other cases, it may be harder to discern whether a firm is pricing below its costs, but abundantly clear that other competitors make it highly unlikely that recoupment will occur, as in the Quidsi example. However, this does not mean, as some commentators suggest,¹⁶⁹ that the inquiries are logically dependent: that a firm priced below its costs and failed to compete on the merits may say something about its specific intent, but not the ultimate consumer

expect that Amazon’s overall eBooks program was profitable, or would be in the longer term, without any anticompetitive conduct” as well as noting that “eBooks seem to be a market in which the impossibility of recoupment would make simple predation infeasible”); *see also* Benjamin Klein, *The Apple E-Books Case: When Is a Vertical Contract a Hub-And-Spoke Conspiracy*, 13 J. COMP. L & ECON. 423, 470 n.153 (2017) (writing that predation “is not a tactic Amazon has generally used in the past” and that an eBooks claim would fail “because Amazon was not pricing most e-books below cost”).

¹⁶⁸ U.S. v. Apple, 791 F.3d 290 (2d Cir. 2015) (finding Apple’s contracts with eBook publishers to have constituted a *per se* unlawful hub and spoke conspiracy).

¹⁶⁹ C. Scott Hemphill & Philip J. Weiser, *Beyond Brooke Group: Bringing Reality to the Law of Predatory Pricing*, 127 YALE L.J. 2048, 2055-56 (2018) (writing that the price-cost and recoupment prongs “should be viewed as factors informing a single overall analysis, rather than as sharply distinct inquiries” and that “the *Brooke Group* decision would be less problematic if it explicitly allowed recoupment evidence to inform the price-cost inquiry, and vice versa”).

welfare effects; and that a firm stands to gain a monopoly does not tell us about whether it is doing so through anticompetitive means or through competition on the merits.

The summary nature of the other spurious predatory pricing allegations against Amazon raised in the House Report justifies dismissal in a commensurate fashion. First, with respect to Prime and “Can’t Realize Any Profit,” as we note above, Amazon, with half the sales of Walmart, lacks the retail market power necessary to support either a likelihood of recoupment or dangerous probability of monopoly power. Second, with respect to Amazon devices and Alexa, the House Report admits that Amazon does indeed face competition from firms including Apple and Google—who are not going to be intimidated by the prospect of a war of attrition. Moreover, even in the unlikely event that the anecdotal allegations of below-cost pricing the Report attempts to sketch could be corroborated by a preponderance of actual evidence, there is no basis in precedent, policy, or practice to hold such promotional pricing as predatory for which businesses should be held liable.¹⁷⁰

As noted above, the neo-Brandeisians have offered three additional reasons for eliminating the recoupment requirement. The first is that because “firms may raise prices years after the original predation, or raise prices on unrelated goods, in ways difficult to prove at trial,” the plaintiff’s burden should be eased.¹⁷¹ Yet, tough proof is exactly what a rational predation rule should require given the benefits to consumers of low prices and the lack of empirical support that predatory pricing is a rational strategy for firms, including large digital ones, to pursue. Nevertheless, even were this not the case, there is nothing unique about this concern when evaluating allegations of predation by digital

¹⁷⁰ See, e.g., *International Telephone and Telegraph Corporation*, 104 F.T.C. 280 (1984); *General Foods Corp.*, 103 F.T.C. 204 (1984); *Buffalo Courier-Express v. Buffalo Evening News*, 601 F.2d 48 (2d Cir. 1979); *Borden Co. v. Fed. Trade Comm’n*, 339 F.2d 953 (7th Cir. 1964); see also AREEDA & HOVENKAMP, *supra* note 24, ¶ 746 (“Unless continued over a long period of time . . . promotional pricing by new entrants or established firms who lack power in the promoted product or service are no threat to competition.”)

¹⁷¹ Khan, *supra* note 14, at 791.

firms; it is already well recognized by neo-Brandeisians themselves that recoupment makes predation claims difficult regardless of the industry at issue.¹⁷²

Their second argument, that “firms may raise prices through personalized pricing or price discrimination, in ways not easily detectable” suffers from similar problems.¹⁷³ It is, of course, no doubt true that the large data many firms possess allows them to engage in numerous efficient business practices, including price discrimination.¹⁷⁴ Nevertheless, to the extent such efficiencies occur—it has been admitted that “[t]here is no public evidence that Amazon is currently engaging in personalized pricing”¹⁷⁵—it is also hardly unique to digital firms. The information technology revolution that occurred concomitant with the economic revolution in antitrust and public policy has extended throughout the economy, with the distinction between digital platforms and other businesses now almost entirely irrelevant with respect to the ability to use consumer data efficiently and charge different prices. Indeed, in its day, A&P was accused of the same.¹⁷⁶

Finally, the neo-Brandeisians contend that “predation can lead to a host of market harms *even if* the firm does not raise consumer prices,” with the assumption that such harms are not cognizable under the recoupment requirement.¹⁷⁷ And yet, properly applied, the consumer welfare standard is a broad concept that analyzes a range of competitive dimensionalities, such as quality vis-à-vis quality-adjusted pricing metrics.¹⁷⁸ The consumer welfare standard also accounts for “variety” and “innovation,” with the

¹⁷² See Vaheesan, *supra* note 99, at 96.

¹⁷³ Khan, *supra* note 14, at 791.

¹⁷⁴ The potential efficiency of price discrimination is well recognized in standard economics textbooks. See, e.g., DENNIS W. CARLTON & JEFFERY M. PERLOFF, *MODERN INDUSTRIAL ORGANIZATION* 306 (4th ed. 2005).

¹⁷⁵ Khan, *supra* note 14, at 763.

¹⁷⁶ Muris & Nuechterlein, *supra* note 6, at 657-58.

¹⁷⁷ Khan, *supra* note 14, at 791.

¹⁷⁸ For a discussion, see Joshua D. Wright & Douglas H. Ginsburg, *The Goals of Antitrust: Welfare Trumps Choice*, 81 *FORDHAM L. REV.* 2405, 2410 nn. 29-31 (2013).

2010 *Horizontal Merger Guidelines* featuring an entire subsection entitled “Innovation and Product Variety,”¹⁷⁹ and the government has long brought monopolization cases alleging harm to innovation or potential competition.¹⁸⁰ And despite criticisms based on a literalistic misunderstanding of the term, the “consumer welfare standard” prevents inefficient allocation of resources by shielding suppliers against anticompetitive buyer actions that inefficiently suppress output of the kind incorrectly leveled against Amazon.¹⁸¹ Moreover, while it is true that the consumer welfare standard does not directly consider “lower income and wages for employees, lower rates of new business creation, lower rates of local ownership, and outsized political and economic control in the hands of a few,”¹⁸² this is for better, not worse: as noted above, asking enforcers subjectively to balance and effectively apply such a wide range of goals would erode sound antitrust enforcement, not facilitate it.¹⁸³

IV. REPLY TO PROGRESSIVE ECONOMISTS

Notwithstanding the important concerns raised about price-cost tests when analyzing predation claims against digital firms, requiring that a firm sacrificed profits by evaluating whether it priced below an “appropriate measure of costs” remains necessary to assess predatory pricing claims by large digital firms. Although applying a price-cost test to these companies may present additional—albeit surmountable—

¹⁷⁹ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES § 6.4 (2010) [hereinafter *Merger Guidelines*].

¹⁸⁰ See, e.g., *Xerox Corp.*, 86 F.T.C. 364 (1975); *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001); *United States v. Visa U.S.A., Inc.*, 344 F.3d 229 (2003); *Intel Corp.*, FTC Docket No. 9341 (July 28, 2010).

¹⁸¹ See Melamed & Petit, *supra* note 16, at 753 (“If [consumer welfare] is understood as total welfare or trading partner welfare, it encompasses buy-side or monopsony issues to the same extent as sell-side or monopoly issues.”).

¹⁸² Khan, *supra* note 14, at 791.

¹⁸³ See Muris & Nuechterlein, *supra* note 6, at 654; see also Joseph V. Coniglio, *Rejecting the Ordoliberal Standard of Consumer Choice and Making Consumer Welfare the Hallmark of an Antitrust Atlanticism*, COMPETITION POL’Y INT’L ANTITRUST CHRON. (Aug. 2017) (discussing the possible incommensurability of consumer welfare with non-economic goals like consumer choice).

analytical issues for courts and enforcers, abandoning this test entirely could lead antitrust law to devolve into *de facto* price regulation that dampens innovation and threatens the recognized right of a firm to price above its costs without fear of liability, as would an exploitative excessive pricing offense. In fact, the justifications for a rule of *per se* legality for above-cost pricing may even be more compelling when evaluating the behavior of technology companies relative to that of firms in traditional industries.

A. Administrability and Minimizing Legal Error

The fundamental concern with the price-cost test to evaluate predation claims in digital markets attempts to turn Areeda and Turner’s administrability argument on its head: namely that, in these markets, price-cost tests will result in both false negatives—such as effective *per se* legality given the low variable costs of high tech firms—and even false positives—such as by confusing a low price on one side of the platform with an overall predatory platform price.¹⁸⁴ While possible in theory, as discussed above there remains as a threshold matter little evidence that harmful digital predation actually exists, thus providing no justification for modifying the current standard to avoid false negatives.¹⁸⁵ Furthermore, some commentators have even suggested that courts can adequately deal with predation in platform market cases without having to engage in complex two-sided arithmetic, as evidenced by Judge Easterbrook’s decision in *Wallace v. IBM*.¹⁸⁶

¹⁸⁴ See *supra* Part II.B.

¹⁸⁵ See *supra* Part III.B; see also Muris and Kobayashi, *supra* note 4, at 166 (noting both “case studies of alleged predatory pricing episodes provide examples of type I and type II errors but do not allow strong inferences regarding overall error rates” and the difficulty of making “strong inferences regarding the nature and frequency of anticompetitive predatory pricing episodes,” and concluding that “[g]iven the state of empirical knowledge, broad policy questions necessarily rely upon imprecisely estimated factors”).

¹⁸⁶ 467 F.3d 1104 (7th Cir. 2006). See Erik Hovenkamp, *Platform Antitrust*, 44 J. CORP. L. 713, 749 (2019) (“What about the aforementioned concern that, absent a two-sided market definition, courts might erroneously diagnose a skewed price distribution as predatory pricing? In fact, we have a good case study. In *Wallace*, Judge Easterbrook had little difficulty concluding that the lower court had correctly thrown out the plaintiff’s claim of predation by a free open-source operating system—a claim Easterbrook amusingly

Not all judges are as sophisticated economically as Frank Easterbrook, and it is thus important to ensure that courts have the incentive and ability to evaluate both sides of the platform to determine whether a price is predatory to avoid error. In fact, the Supreme Court's *Ohio v. American Express Co.* decision requires courts to consider both sides of the platform when evaluating whether conduct is anticompetitive,¹⁸⁷ and therefore, by implication, when applying a price-cost test.¹⁸⁸ Indeed, among the many scholars who have addressed related issues of market definition in two-sided markets, Behringer and Filistrucchi outline a model to apply the Areeda-Turner test to account for the economics of platforms—specifically, the relative price structure between both sides of the market—through weighted price levels and average variable costs.¹⁸⁹ Simply put, there is nothing inherently problematic about expecting courts and enforcers to account for the multi-sided nature of platform markets when considering predatory pricing claims to avoid legal error.

Of course, while two-sided arithmetic may test generalist judges—but, importantly, much less so the economists at the antitrust agencies or those employed in

likened to a proposal that ‘free forever’ might be the ultimate deterrent to competition.”).

¹⁸⁷ 138 S. Ct. 2274 (2018).

¹⁸⁸ See Douglas H. Ginsburg & Koren W. Wong-Ervin, *AmEx: Beyond Transaction Platforms and Section 1*, COMP. POL’Y INT’L N. AM. COLUMN (May 2020) (“In any event, limiting the two-sided market framework of *AmEx* to Section 1 cases would make no sense given that the economic underpinnings of the case apply to all two-sided transaction platforms (as well as non-transaction platforms that exhibit meaningful indirect network effects), particularly when the conduct at issue is itself two sided. For example, in a predatory pricing case, a platform’s decision to price in a way that subsidizes the more elastic side is two-sided conduct given the interdependent demand.”)

¹⁸⁹ Stefan Behringer & Lapo Filistrucchi, *Areeda-Turner in Two-Sided Markets*, 46 REV. INDUS. ORGAN. 287 (2015). Cost accounting, with its focus on variable costs, can avoid many, although not all, of the most difficult issues of a cost standard that arises with fixed costs, especially with joint and common costs, the allocation of which across products can be arbitrary. For example, a firm’s research and development costs would not generally need to be allocated as a variable, and with digital firms most costs are fixed. Two other points are worth noting. First, because the underlying offense involves low prices, it is not surprising that the legal standard for the offense uses a price-based standard. Nevertheless, and second, consistent with the difficulties in applying that standard and with its incomplete nature in assessing the economic consequences on consumers, analysis of price is only part of the legal test.

private practice and used as experts—applying the price-cost test in two sided-markets in principle imposes no burden on antitrust law greater than that which already exists elsewhere. Consider the Horizontal Merger Guidelines’ hypothetical monopolist test which, like Areeda and Turner’s price-cost test, at bottom can require a quantitative comparison of prices with a competitive benchmark as a precondition to analyzing welfare effects.¹⁹⁰ While mechanically applying the test to two-sided markets can cause mistakes, this does not make the market definition exercise either unnecessary or hopelessly complex as a practical matter. Generally speaking, to define the relevant market courts and enforcers may look to adopt either modified versions of the test that have been set out by commentators,¹⁹¹ or more qualitative factors.¹⁹²

Similarly, *Brooke Group*’s exhortation that “a jury may not infer competitive injury from price and output data absent some evidence that tends to prove that output was restricted above a competitive level” is no bar to considering properly complex issues like simultaneous recoupment.¹⁹³ Market definition is again a useful analogy: concerns that market power may obfuscate competitive price levels are not only as old as the “cellophane fallacy” in *U.S. v. E.I. du Pont de Nemours*,¹⁹⁴ but ubiquitous in the real world of imperfect competition. As such, in the presumably rare case where there is reason to

¹⁹⁰ *Merger Guidelines*, *supra* note 179, § 4.1.

¹⁹¹ See, e.g., Lapo Filistrucchi et al., *Market Definition In Two-Sided Markets: Theory And Practice*, 10 J. COMP. L. & ECON. 293 (2014). Indeed, applying a price-cost test is conceptually a more simple analytical endeavor than the market definition exercise given that in the latter case courts must make a judgement about *hypothetical* competitive equilibrium, while with predation an individual firm’s actual cost data is available.

¹⁹² This touches another common misunderstanding of the economic revolution in antitrust. While the consumer welfare standard is indispensable, showing “actual proof of anticompetitive effects—namely, the ability to raise price and restrict output” does not as an evidentiary matter require the mechanical application of price theory and other sophisticated economic tools of formalized antitrust reasoning, even if the *weight* of this type of evidence is, when available, greater. See Timothy J. Muris, *The FTC and the Law of Monopolization*, 67 ANTITRUST L.J. 693, 696 (2000).

¹⁹³ *Brooke Group*, 509 U.S. at 237.

¹⁹⁴ 351 U.S. 377 (1956).

believe simultaneous recoupment is occurring, just as courts have long been required to account for pre-existing market power in determining a competitive price level for the purpose of market definition, so too must a court determine an individual firm's price while also accounting for the exercise of market power it may be simultaneously recouping.

The final, perhaps most compelling, argument for eliminating use of the Areeda-Turner average variable cost test in digital markets, concerns the low, if not zero, marginal costs some digital platforms enjoy. *Brooke Group*, however, contains no requirement that enforcers woodenly analyze short-run average variable costs—but only an “appropriate measure of its rivals’ costs.”¹⁹⁵ That is, consistent with the general nature of antitrust law as a common law statute adaptable to diverse economic environments, courts may consider alternative measures of costs in applying the price cost test.¹⁹⁶ And, while average total costs—although not precluded by law—face what are probably prohibitive policy concerns, long run measures of incremental cost may be a viable substitute when evaluating predatory pricing claims in markets that embody high fixed and low marginal costs, such as digital platforms.¹⁹⁷

Rather than represent a merely aspirational approach, this is exactly what courts have done when confronted with predation claims in network industries. Here, the telecommunications industry is instructive. In *MCI Commc'ns Corp. v. AT&T*, the Seventh Circuit considered whether AT&T engaged in predatory pricing for its local service, subsidized by raising the price of its long-distance service.¹⁹⁸ Recognizing the difficulties with average variable cost, and after considering and rejecting both the older intent-based

¹⁹⁵ *Brooke Group*, 509 U.S. at 222.

¹⁹⁶ See C. Scott Hemphill & Philip J. Weiser, *Beyond Brooke Group: Bringing Reality to the Law of Predatory Pricing*, 127 YALE L.J. 2048, 2068 (2018) (“In making the price-cost comparison, *Brooke Group* also invites a flexible approach to the measurement of cost.”).

¹⁹⁷ See 3A AREEDA & HOVENKAMP, *supra* note 24, ¶ 741.

¹⁹⁸ 708 F.2d 1081 (7th Cir. 1983), *cert denied*, 464 U.S. 891 (1983).

standards and the brave new world of determining whether AT&T's price was welfare-maximizing, the court employed a long-run incremental cost measure and made clear that its choice was "not an economist's quibble or a theoretical musing," but rather "a principled analysis and practical reality in the market place."¹⁹⁹ Indeed, the court was explicit that "[h]ow practically to compute LRIC . . . is a matter which we believe to be quite manageable and capable of development on an ongoing basis."²⁰⁰ In other words, it rightly came to exactly the opposite conclusion of today's progressive economists and affirmed the wisdom of Areeda and Turner: administrability concerns favor modifying the price-cost test, rather than abandoning it.

B. The Continued Importance of the Price-Cost Test

Rather than make the price-cost test a relic of a bygone age, the legal and policy arguments in favor of the test continue to apply with equal, if not more, force in digital platform markets. Of these, no policy is more important than preventing antitrust law, which governs the competitive process by maximizing consumer welfare, from engaging in rate regulation, particularly in light of the innovation competition that characterizes rivalry in so much of the digital economy.²⁰¹ By eliminating a price-cost test, a quasi-regulatory regime is exactly what antitrust law could become—empowering agencies and courts to determine what level of pricing maximizes consumer welfare or the public

¹⁹⁹ *Id.* at 1123.

²⁰⁰ *Id.* at n.58.

²⁰¹ See 3A AREEDA & HOVENKAMP, *supra* note 24, at ¶ 720 (writing that "price regulation is not only difficult and inaccurate, but inevitably it distorts the incentive to reduce costs or engage in further innovation"); Areeda & Turner, *supra* note 8, at 707; see also David S. Evans & A. Jorge Padilla, *Excessive Prices: Using Economics to Define Administrable Legal Rules*, 1 J. COMP. L. & ECON. 97, 100 (2005) ("We find that, in general, consumers are best served with a policy that leaves firms, including dominant firms, free to charge prices above cost and earn positive, and possibly high, profits. This is especially the case in industries where innovation and investment plays a central role.").

interest rather than protect the competitive process, which would bring huge uncertainty and unnecessary risk to the business community.²⁰²

And the Supreme Court has of course so cautioned. As the Court made clear in *Verizon Communications v. Law Offices of Curtis V. Trinko, LLP*, a Section 2 case, above-cost pricing by itself is *per se* lawful regardless of any exclusionary effects:

The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system. The opportunity to charge monopoly prices—at least for a short period—is what attracts “business acumen” in the first place; it induces risk taking that produces innovation and economic growth.²⁰³

Predatory strategies involving limit pricing as a means of exclusion—rather than price hikes or exploitation—are of course no exception to antitrust law’s general aversion to price regulation. On the contrary, the same problems abound with formulating a rule to proscribe limit pricing strategies:

First, what price should be ordered? Should the firm be ordered to charge its short-run profit-maximizing price, even though a lower price might incur new entry? A price merely high enough to permit the plaintiff (or one particular firm) to enter? Might there be others than the plaintiff who could enter at lower prices? Must the order continue even after the plaintiff becomes established? Would cost changes justifying subsequent price changes have to be continually reviewed by the tribunal? In sum, such an order would place the courts in the ironic and indefensible position not only of having to order firms to charge monopoly prices, but also to regulate—undoubtedly on an ongoing basis—the price that is charged. They would effectively turn the limit pricer into a kind of public utility and force it to charge a high price in order to induce entry.²⁰⁴

Indeed, even if these administrability problems could begin to be resolved, a fundamental problem identified by Areeda and Turner of a rule against limit pricing—

²⁰² See William Baumol, *Predation and the Logic of the Average Variable Cost Test*, 39 J. L. & ECON. 49, 51 (1996) (“In a world in which vigorous competition is all too easily mistaken for predation, and in which firms can unintentionally overstep the line, it is important to provide managers with guidelines as unambiguous as the issue permits, to enable them to tailor their decisions in a way that ensures compliance with the law and minimizes vulnerability to anticompetitive lawsuits intended to handicap vigorous competition.”).

²⁰³ 540 U.S. 398, 407 (2004); see also *Kartell v. Blue Shield (Mass.)*, 749 F.2d 922 (1st Cir. 1984), *cert denied*, 471 U.S. 1029 (1985); *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263 (2d Cir. 1979), *cert denied*, 444 U.S. 1093 (1980).

²⁰⁴ 3A AREEDA & HOVENKAMP, *supra* note 24, ¶ 736.

sacrificing definite short-term consumer benefits for speculative long-run benefits—is plainly more acute in technology platform markets, given their inherent dynamism relative to more traditional old economy markets, and thus exacerbates the difficulties of the already dynamic analysis captured by the recoupment requirement.²⁰⁵ Simply put, the anticompetitive effects of limit pricing on entry are not only harder to predict in digital platforms, but also can be less likely. Moreover, as commentators have noted, there may not be any general reason that protecting less efficient entrants from possibly exclusionary above-cost pricing will necessarily produce long-run gains through entry.²⁰⁶

The reasons to permit above-cost pricing are even stronger the more one steps outside of the technocratic and welfare maximizing framework common to both modern antitrust and the ideal world of the progressive economists. On a Hayekian perspective, for example, above cost pricing is itself part of the competitive discovery process whereby information is communicated and optimal outcomes are achieved through spontaneous order.²⁰⁷ Moreover, for enforcers to act in the way that the progressive economists suggest—that is, determining the pricing level that maximizes welfare—they must confront Hayek’s famous knowledge problem, whereby regulators face an inherent difficulty in aggregating the diverse and dynamic information needed to make such judgments properly.²⁰⁸ For Hayek, attempts like those of the progressive economists “to control prices . . . deprives competition of its power of bringing about an effective co-

²⁰⁵ See Douglas H. Ginsburg & Joshua D. Wright, *Dynamic Analysis and the Limits of Antitrust Institutions*, 78 ANTITRUST L.J. 1, 7 (2012) (noting that, with respect to the recoupment requirement, “[t]his analysis is inherently dynamic in the sense that it requires a prediction about competitive outcomes” such that “[t]he question of recoupment requires an fact-intensive analysis of whether the firm’s pricing strategy and other market conditions are conducive to the future exit of rivals and the ability of the firm to sustain above-cost prices”).

²⁰⁶ See Elhauge, *supra* note 67, at 803 (noting how proposals to restrict above-cost pricing “confer no long-term post-entry gain and can inflict long-term costs, and while they may sometimes confer a short-term post-entry gain, on other—and more frequent—occasions they inflict a short-term post-entry cost”).

²⁰⁷ Friedrich A. Hayek, *The Meaning of Competition*, in INDIVIDUALISM AND ECONOMIC ORDER 94 (1948).

²⁰⁸ Friedrich A. Hayek, *The Use of Knowledge in Society*, 35 AM. ECON. REV. 519 (1945).

ordination of individual efforts, because price changes then cease to register all the relevant changes in circumstances and no longer provide a reliable guide for the individual's actions."²⁰⁹

Recent experience confirms that attempts to police pricing in innovative and networked industries are bad policy. Among the many industries stifled by regulation,²¹⁰ the telecommunications industry is again perhaps most enlightening for our purposes. Not only was the rate regulation of the 1934 Telecommunications Act widely criticized, but the interconnection provisions in the reform-minded 1996 Telecommunications Act that enabled competitive local exchange carriers to interconnect with incumbent local exchange carriers for reasonable intercarrier compensation implicate the same concern of policing pricing conduct to prevent exclusionary conduct as does predatory pricing. As our colleague Jon Nuechterlein and Phil Weiser have argued, the law determining proper intercarrier fees remains unclear,²¹¹ with the relevant determinations well beyond the comfort of the same generalist judges who apply antitrust law.²¹² If antitrust law is to

²⁰⁹ FRIEDRICH A. HAYEK, *THE ROAD TO SERFDOM* 27 (1944). Interestingly, some of the neo-Brandeisians see Hayek's theories as supportive of their structuralist antitrust policy. See BARRY LYNN, *CORNERED: THE NEW MONOPOLY CAPITALISM AND THE ECONOMICS OF DESTRUCTION* 249-50 (2008) (arguing that "Hayek's vision provides us with perhaps the single most eloquent and concise depiction of how to structure a political economy" distinct from "some central planning authority, public or private . . ."). That view, however, is mistaken upon closer analysis of Hayek's work, including his conception of the rule of law. See Joseph V. Coniglio, *Hayek as a New Brandeisian? The Need to Distinguish Theory from Practice in Hayekian Competition Policy*, *COMP. POL'Y N. AM. COLUMN* (Oct. 3, 2018).

²¹⁰ See Christine S. Wilson, Commissioner, Fed. Trade Comm'n, Address at the British Institute of International and Comparative Law, Remembering Regulatory Misadventures: Taking a Page from Edmund Burke to Inform Our Approach to Big Tech (June 28, 2019) (discussing railroad and airline regulation as cautionary tales for regulatory proposals against large technology firms).

²¹¹ JONATHAN E. NUECHTERLEIN & PHILLIP J. WEISER, *DIGITAL CROSSROADS: TELECOMMUNICATIONS LAW AND POLICY IN THE INTERNET AGE* 365-66 (2015) (Concluding that the 1996 Act's "new rules for interconnection, intercarrier compensation, and universal service spawned massive FCC regulatory initiatives and fundamental legal disputes that courts are still sorting out seventeen years later.").

²¹² Jonathan E. Nuechterlein & Philip J. Wesier, *First Principles for an Effective Rewrite of the Telecommunications Act of 1996*, at 28 (AEI-Brookings Joint Center For Regulatory Studies, Working Paper 05-03, Mar. 2005) (noting how "generalist judges lack both the resources and the technical proficiency to resolve the thousands of day-to-day disputes, on pricing and other issues, that must be decided under any

heed Santayana’s adage that those who forget history may be condemned to repeat it, calls to prohibit above-cost pricing as a way to tame digital platforms should be rejected.²¹³

CONCLUSION

When Areeda and Turner wrote, antitrust law—and especially predatory pricing—was at its anti-consumer nadir. Areeda and Turner’s views were transformative, first adopted by then Judge Breyer in 1983 in *Barry Wright Corp.*, and then by the Supreme Court in *Matsushita* and *Brooke Group* within the next ten years. They remain today the law of the land. From the start, critics attacked their article as simplistic and under inclusive, among a plethora of other sins.

A new generation has renewed these criticisms, with the neo-Brandeisians, as part of their condemnation of the consumer welfare standard, wanting to abandon the recoupment requirement to satisfy concerns like fairness or preserving democracy, which they find pressing in light of the new successful digital giants.²¹⁴ This program leads to the pre-Areeda and Turner anti-consumer policies of Robinson-Patman, *Utah Pie*, and the jihad against the A&P—all lessons to large firms that they should be wary of price cutting, even when there was no realistic chance of achieving monopoly power. The neo-Brandeisian war on low prices is anti-consumer, as Professor Hovenkamp, successor to Areeda in the leading antitrust treatise, admirably concludes:

The neo-Brandeisian attack on low prices as a central antitrust goal is going to hurt consumers, but it is going to hurt vulnerable consumers the most. . . . As a result, to the extent that it is communicated in advance, it could spell political suicide. Setting aside economic markets, a neo-Brandeis approach whose goals were honestly communicated could never win in an

local competition regime that involves even minimal leasing and interconnection rights”).

²¹³ GEORGE SANTAYANA, *THE LIFE OF REASON* 284 (1905).

²¹⁴ Khan, *supra* note 14, at 740 (discussing the importance of the “general vision” of antitrust to promote democracy).

electoral market, just as it has never won in traditional markets.²¹⁵

Moreover, technocratic critics today appear comfortable with abandoning current price-cost tests for a more far-reaching inquiry into whether above-cost pricing causes long-run consumer harm. For decades, economists' models have posited similar theories, and although these modern commentators raise important questions about the application of the price-cost test in digital markets, abandonment of the price-cost test in its entirety would be wrongheaded. Transposing a consumer-welfare balancing framework into predatory pricing doctrine could easily put generalist judges in the position of *de facto* price regulators, a role antitrust has long and rightly eschewed, and which in digital contexts would often entail an even more complicated analysis than required in less complex industries.

Although the two groups of critics primarily take issue with different prongs of Areeda and Turner's test, one can imagine circumstances where they join forces, again with the effect of resurrecting a regime like that which reigned pre-Areeda and Turner. In fact, it would not be the first time that populists and progressive economists have found common cause. In the 1970s, those who opposed concentration out of a concern for protecting small businesses joined forces with the economists who favored the then dominant simple concentration doctrine, which raised concerns about increases in concentration levels that today would be regarded as unproblematic.²¹⁶ This coalition supported aggressive enforcement not only involving mergers but, as we have seen, even predatory pricing.

²¹⁵ Hovenkamp, *supra* note 23, at 130.

²¹⁶ See Muris & Nuechterlein, *supra* note 138, at 500 ("Economists, enforcement agencies, and many in Congress had all invoked the [simple market concentration] doctrine to support aggressive forms of antitrust intervention, such as suits to block mergers in reasonably unconcentrated markets and emerging initiatives to hold companies liable under novel § 2 theories of 'no-fault' monopoly and 'shared monopoly.'").

The result was substantial regulatory hubris. Consider again the General Foods case— support for the case by those concerned with competitor protection was easy to understand, as the titanic struggle between General Foods and Proctor & Gamble in fact harmed smaller competitors. While at first glance the support of the economists might seem unlikely given the large benefits to consumers of the price war, their devotion to deconcentration explained their support—they also believed that consumer goods markets were overly concentrated, in significant part from “excessive” advertising. For this transgression, they proposed allowing new entrants to use General Foods’ Maxwell House trademark, ignoring that multiple owners of a single brand would have decreased incentives to maintain quality. In the first of the four meetings over two years, after the FTC Commissioners unanimously and quickly rejected the trademark license remedy, the economists remained in support of the case, apparently as a way to tell leading firms not to cut prices in the face of such entry.

In antitrust, the but-for world is crucial. Suppose that the critics had their way, and Areeda and Turner’s article was but a minor footnote in the history of antitrust law and economics.²¹⁷ What impact would the old predatory pricing regime have had on the economy had it continued in the decades that followed? Would it be that when newcomers, such as Amazon or any of the other large digital firms, had grown beyond a certain size, their lawyers would have urged them to be cautious about low prices, lest they face antitrust liability for disadvantaging less-efficient rivals? The role of sound antitrust principles, including the import of Areeda-Turner, in enabling American companies to emerge as the global leaders in innovation should neither be overlooked, nor forgotten.

The lesson is simple. The consumer welfare standard has already proven many times

²¹⁷ For a related discussion, compare Christopher R. Leslie, *Revisiting the Revisionist History of Standard Oil*, 85 S. CAL. L. REV. 573 (2012), with Wright, *supra* note 63.

that technology giants are not above modern antitrust law, with two of the largest and most significant of such companies—AT&T and Microsoft—being found to have run afoul of Section 2 under that standard.²¹⁸ As we write, the antitrust agencies are using the consumer welfare standard to assess their conduct, with the DOJ having filed a long-anticipated lawsuit against Google and expectations that another may soon find itself in court.²¹⁹ Most importantly, the modern antitrust regime has supported unprecedented gains in economic growth and technological progress, including the emergence of digital firms that remain the envy of the world.²²⁰ Sound antitrust law has served us well for decades, including application of the then revolutionary Areeda-Turner test. For the sake of American consumers, may such rules continue.

²¹⁸ *United States v. Microsoft*, 253 F.3d 34 (D.C. Cir. 2001) (en banc); *United States v. AT&T Co.*, 552 F. Supp. 131 (D.D.C. 1982), *aff'd sub nom. Maryland v. United States*, 460 U.S. 1001 (1983). Additionally, the FTC brought two unilateral conduct actions against Intel. *See Intel Corp.*, FTC Docket No. 9341 (Oct. 29, 2010) (Decision and Order); *Intel Corp.*, FTC Docket No. 9288 (Aug. 6, 1999) (Decision and Order).

²¹⁹ *See* Complaint, *United States v. Google*, No. 1:20-cv-03010 (D.D.C. Oct. 10, 2020); Brent Kendall, John D. McKinnon, & Ryan Tracy, *FTC Preparing Possible Antitrust Suit Against Facebook*, WALL ST. J. (Sept. 15, 2020). One of us has criticized the theory that the FTC is considering against Facebook. *See* Timothy J. Muris & Jonathan E. Nuechterlein, *First Principles for Antitrust Review of Long-Consummated Mergers*, 5 CRITERION J. ON INNOVATION 29 (2020).

²²⁰ *See* Muris, *supra* note 61, at 1426 (“Companies like the so-called ‘tech giants’ have been built from the ground up in the United States rather than in Europe or China largely because the U.S. legal environment is stable, predictable, and uniquely hospitable to vigorous, paradigm-shattering competition by all businesses, large and small”); Coniglio, *supra* note 59, at 731-32.