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Abstract

The rise of large digital platforms, accompanied by claims of increasing industrial concentration, have prompted calls for antitrust policy reform. Yet, the observed market trends are consistent with improvements in welfare, as economies of scale often *decentralize* effective choices and *disintermediate* previously dominant structures, unleashing entrepreneurship. Evidence of deleterious impacts from the rise of the leading platforms -- via mergers, predation, vertical foreclosure, and tying practices -- is scant. The difficulty in amassing such evidence is implied in the argument that antitrust enforcement should no longer be focused on estimating consumer welfare impacts using traditional price theory. Recommendations for the creation of an independent Digital Regulator ironically buttress this view. This approach invokes an unwarranted rejection of the advantages of the evidentiary standards imposed by antitrust courts and risks the rent seeking outcomes experienced with industry-specific regulators in past decades.

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The digital revolution that spawned mass market access to the Internet has generated remarkable new services exhibiting strong network effects and garnering virtually universal appeal. The companies offering these services –Amazon, Apple, Facebook, Google, Twitter, and Netflix – did not exist in 1995, save Apple (then a relatively tiny presence, at 0.13 percent of its 2021 year-end valuation⁴). Today, these firms have assumed dominant positions in shopping, search, social media, video entertainment, and digital advertising services, and their equities now account for approximately 14 percent of the entire U.S. stock market.⁵ As these companies consolidated their positions, public advocacy for reining them in through enhanced regulatory restrictions began to grow (Khan 2017, Wu 2018), and antitrust experts considered more aggressive enforcement strategies to counter allegedly increased levels of industrial concentration, particularly in the digital sector of the economy (Baker 2019; Shapiro 2019; Cremer, de Montjoye and Schweizer 2019; Stigler Committee on Digital Platforms 2019 ; and Digital Competition Expert Panel 2019). Subsequently, a Congressional Committee issued a report consistent with this view, recommending major changes in U.S. antitrust law (House Report 2020), and several antitrust reform bills aimed at the major digital platform are now moving through Congress.⁶

In this paper, we review the major criticisms of current antitrust policy, focusing principally on the drive to constrain the dominant “Big Tech” platforms. While these demands for stricter antitrust enforcement extend beyond the digital economy, it is undeniable that the rise of the digital giants has been formative in bringing antitrust to public attention.

We begin, however, with the concerns over rising industrial concentration and the case for stricter antitrust enforcement throughout the economy. We then turn to the role of the large Internet platforms in the current debate about the role of antitrust. Finally, we address how the complexity of using antitrust to police the digital sector has prompted renewed interest in industry-specific regulation, reprising policies implemented from the late 19th century through

⁴ Apple closed at \$0.24 per share on December 31, 1995 (adjusted for splits and dividends). Apple closed at \$177.57 on December 31, 2021. Source: Yahoo!Finance.

⁵ Data available on www.finance.yahoo.com and <https://siblisresearch.com/data/us-stock-market-value/> as of March 31, 2022.. Alternatively, GAFAM (Google, Amazon, Facebook, Apple and Microsoft) accounts for 23% of the S&P500. Andrew Bary, “*Big Five Tech Stocks Now Account for 23% of the S&P500*,” BARRON’S (July 26, 2021).

⁶ See, e.g., Cecilia Kang and David McCabe, [*House Lawmakers Are Considering 6 Bills Aimed at Big Tech*](#), N.Y. TIMES (June 23, 2021);

the 1930s, but which were discredited and then largely abandoned during the last half-century. Is there reason to believe that such regulation would be beneficial today?

I. Is Concentration Increasing in the U.S. Economy?

Renewed interest in antitrust policy may be partly attributed to a report issued by the President's Council of Economic Advisers (CEA 2016), which showed an increase in the average *national* level of concentration across the U.S. economy between 1997 and 2012. This report stimulated further studies of concentration trends and their implications for competition policy (Autor, Katz, Patterson, and Van Reenen 2017, 2020).

Regardless of the overall pattern in market concentration, the relevant question for antitrust policy is whether individual markets exhibit critical changes that are causally associated with anti-competitive outcomes. Changes in national concentration ratios are generally too highly aggregated to offer much direct evidence on the question. Further, even where the relevant markets, accurately delineated, exhibit increases in concentration, one cannot determine their effect on economic performance without understanding the causes of such increases. Are they the result of exclusionary power, or the result of competition from lower-cost firms that reduces the market shares of less efficient rivals? Even when greater concentration is associated with higher firm profits, the distribution of company earnings may reflect an increase in productive efficiency rather than the exploitation of market power. If so, rising concentration and consumer surplus gains are likely to be positively correlated (Demsetz 1973; Carlton and Heyer 2020).

A. The Effect of Increases in Concentration

Shapiro (2018) and Froeb and Werden (2018) explain that increases in U.S. industrial concentration measured at the national level do not necessarily indicate increasing concentration in the *relevant markets* for the analysis of competition, which may be local, regional, or even global. The growth of retail store chains, for example, may lead to greater concentration of national market shares while increasing most consumers' choices and lowering concentration at the local level. This commonly happened a century ago when retail competition from Sears and Roebuck, J.C. Penny, A&P or Safeway gave shoppers competitive options to erstwhile local monopolies. The analogy to the modern emergence of e-commerce, bringing online markets into

direct competition with “bricks and mortar” stores, is clear. On the other hand, measuring concentration at the national level for the aluminum, copper, steel, or automobile industries surely overstates the concentration of revenues or output in the relevant markets, which are global. Competitive forces are properly viewed as containing the opportunity for international rivalry, including imports into domestic markets.

Nevertheless, Shapiro finds a direct relationship between growing market concentration and rising profits, particularly in the financial, health-care, and information sectors. Combined with recent evidence of a slowing in the rate of new-business formation and the recent reduction in productivity growth (Decker, Haltiwanger, Jarmin and Miranda 2016, 2017), the trends are potentially troubling. Other researchers find evidence of purportedly worsening economic performance. For example, Barkai (2020) estimates output shares of labor, required capital, and excess profits for the U.S. non-financial corporate sector for 1984-2014, finding that the returns to both labor and required capital have fallen substantially, resulting in a large increase in excess profits (rents). He then calibrates a general equilibrium model to estimate the effects of increasing mark-ups (price-cost ratios), concluding that a return to the 1984 level of mark-ups would lead to a 10 percent increase in output, a 24 percent increase in labor compensation, and a 10 percent increase in investment.

The empirical issue is unsettled, however. Of primary interest: what is driving concentration changes, efficiency or anti-competitive monopolization? The Structure-Conduct-Performance paradigm of the 1960s asserted that concentration caused output prices to rise and industry profits to expand, as output was restricted from more competitive levels (Bain 1959). This implied that antitrust measures to restrict mergers and firm growth were an unambiguous pro-competitive solution. But what if concentration levels were changing due to the growth of efficient firms? Harold Demsetz (1973, p. 3) argued that “one possible source of monopoly power was superior entrepreneurship.” More efficient firms would logically expand market shares, and in a number of industries this might account for observed (positive) concentration-profits correlation. Were the increases in concentration generating monopoly output restrictions, output prices would rise, generally hurting the industry’s consumers and generally helping *all* firms. Yet, Demsetz’ investigation found that the positive concentration-profits trend was generally associated with larger firms; smaller firms within the same industry did not enjoy

higher prices or profits. The “Demsetz Critique” advanced competitive superiority, not monopolistic restrictions, as the driver of increases in industrial concentration.

Supporting evidence has emerged in contemporary markets. Ganapati (2021) examines the changes in concentration in six-digit NAICS industries (and 4-digit SIC industries prior to 1997) over successive 5-year periods, 1972 to 2012, and estimates their correlation with changes in prices, output, labor productivity, and labor shares. He finds that increases in concentration are directly associated with increases in productivity and output, but not in prices – except for the health-care sector. He also finds an inverse relationship between changes in concentration and labor shares, which he attributes to the sunk investments required to increase productivity (and which can achieve scale economies that tend to increase concentration).

Similar results have been obtained by Bessen (2020) and Peltzman (2018). Each finds a direct relationship of productivity growth and industry concentration, but little or no association of prices with concentration. Bessen shows that the growth in productivity due to the adoption of information technology (IT) in the overall economy has been strongly associated with increasing concentration because the largest firms are more likely to (efficiently) deploy it. He also shows that rising profit margins are largely due to deployment of IT. Peltzman focuses on manufacturing and similarly finds that productivity growth is associated with increasing concentration and rising profit margins, but not with price increases. Other recent work suggesting similar conclusions includes Autor et al (2020); Werden and Froeb (2018); and Muris and Nuechterlien (2019).

Concentration, measured economy-wide, has also been increasing in recent years in European markets, where regulatory policies, including competition policy, are distinctly more interventionist than in the U.S.⁷ Hence, it is questionable that rising concentration on either continent is the result of lax antitrust policies. Recent increases in industry concentration may result from the growth of more efficient firms, as Demsetz (1973) suggested long ago.

Commented [r1]: This phrase is confusing. If antitrust policies are not too lax, do they “lead to an increase...” ?

B. Implications for Antitrust Policy

⁷ A weighted average of country-level industrial concentration, using the Hirschman-Herfindahl Index (HHI), was shown to increase by 43% during the 2009-2016 period. Bighelli, Di Mauro, Melitz and Mertens (2021).

The increases in national market concentration captured in recent studies do not, by themselves, imply a failure of antitrust policy or a need to reform it. In many industries, an increase in concentration may simply reflect the growth of (price-lowering, quality-enhancing) national chains replacing local entities without any reduction of competition. Indeed, this transition would be expected to represent an improvement in shopping choices as customers are driving the transition via their patronage. The increase may also reflect the failure of many firms in markets that have been subject to intensifying global rivalry or the effect of disruptive digital innovators achieving competitive superiority.

Other issues appear to stem from misinterpretation of data. Shapiro (2018) notes that an *Economist* (2016) analysis of changes of national U.S. four-firm concentration ratios between 1997 and 2012 shows that the average concentration across all private, non-farm sectors of the economy rose from 26 percent to 32 percent. These changes suggest to some the failure of antitrust policy, yet such increases are not alarming. As Shapiro observes, a 32 percent market share for the four leading firms reflects an unconcentrated market, given that at least nine more competitors exist, none with more than an 8 percent market share.

A recent study reviews concentration trends in six sectors: Services, Manufacturing, Retailing, Wholesaling, Utilities and Finance, between 1982 and 2012 (Brookings 2018, p. 10). By far, the largest increase is in Retailing, where concentration rose 416%, but retail choices for U.S. customers appear to have clearly improved during the three-decade study period. Thanks to business innovation, “long tail” selections became widely accessible via eCommerce platforms, while myriad new buying options became accessible at low transaction cost via search engines. In considering the evolution of competitiveness, Tyler Cowen writes that the “good news” starts with retailing (Cowen 2019, p. 84). “[M]y options as a book consumer have never been better” (Ibid., pp. 84-5). New scale efficiencies have allowed far more discounters to compete: “Dollar General and Dollar Tree... had 27,465 outlets... more than the total number of CVS, Rite Aid and Walgreens stores combined” (Ibid., p. 86). In short, it is far from clear that the steep increase in measured national retail concentration has raised prices for retail consumers. Indeed, the cause and effect suggested by the Brookings study -- that “concentration is high in markets with large returns to scale and network effects” -- implies that improvements in consumer welfare are likely driving the measured trend in concentration.

If concentration is increasing in relevant markets, this may be due to changes in antitrust enforcement, but there are again contrasting research results. Peltzman (2014) finds that concentration in U.S. manufacturing industries began to rise after U.S. merger policy became much less aggressive with the publication of the 1982 Merger Guidelines. The average concentration rose for twenty years (1982-2002 and then 1987-2007⁸) after being relatively stable for the previous two decades. The increases in concentration are significant even after adjusting for the decline in shipments that affected many industries due to declining demand or rising imports. However, Bessen (2020) finds that mergers and acquisitions are not associated with rising concentration.

In a widely cited study, Kwoka (2015) reviews evidence on the effects of mergers and merger policy on output prices by reviewing 49 horizontal transactions (42 mergers and seven agreements such as joint ventures), occurring from 1976 to 2006, for which retrospective studies exist in the scholarly literature. Kwoka reports that antitrust agencies challenged 36 percent of the mergers in his database, all but three of which occurred after the change in merger policy signaled by the 1982 Merger Guidelines. He calculates that the authorities failed to challenge 62 percent of the mergers that resulted in price increases, concluding that merger enforcement was too lax. Unfortunately, Kwoka's sample captures a tiny fraction of the thousands of horizontal mergers occurring among American firms during the time period he studies,⁹ and it is biased due to errors (Vita and Osinski 2018). When the merger cases are correctly interpreted, the average price increase is substantially reduced. Unfortunately, it is not possible to test whether the estimates are statistically different from zero given the lack of weighted averages (simple means are used) and missing standard errors for reported magnitudes.

Some recent literature suggests that increasing concentration is associated with lower payments to labor.¹⁰ If labor's declining share is due to a rise in monopsony power created by mergers, as Prager and Schmitt (2021) find for recent hospital mergers, altering merger policy might well address the problem. But international evidence suggests some other pattern is at work, as strong "labor-saving" trends associated with the digital economy are observed across

⁸ These two different twenty-year periods result from the shift in the industrial classifications employed by the Census Bureau in 1987, a shift from SIC to NAICS classifications.

⁹ Between 1976 and 2006 there were substantially more than 2,000 mergers reported per year in the U.S.

Martynova and Renneboog (2008).

¹⁰ See Bakai (2020).

countries. The U.S. “wage bill” did fall from 61% of GDP in 1975 to 57% in 2015, but this is in line with the decline observed in many developed countries. Indeed, it is much less of a decline than seen in some peer countries. “Over the same period,” writes World Bank economist Kaushik Basu (Basu 2016, pp. 4-5), “the same ratio in Australia fell from 67% to 54%, in Canada from 61% to 55%, in Japan from 77% to 60%...” Across the EU (15), the wage bill fell from 66% to 57%.

If wages are being impacted by technological change that substitutes capital for labor inputs, rather than by anticompetitive market structures, the implications for policy are distinct. Wage growth in high-income markets (like the U.S.) has slowed in recent decades while wages in developing countries supplying high-technology industries have risen rapidly.¹¹ International trade flows and technological shifts, not domestic levels of market concentration, would appear to be driving such trends.

II. Reforming Antitrust Policy

The saliency of the debate over competition policy derives in part from the changes wrought by the digital economy and a fear of the “curse of bigness” advanced by Justice Brandeis in the early 19th Century. But criticisms of recent U.S. antitrust policy antedate the rise of the currently-dominant digital platforms and apply to the overall economy. An earlier paper by Crandall and Winston (2003) found antitrust to be generally ineffective and suggested that much more research was required to diagnose this failure and remedy it.¹²

More recently, criticisms have been directed at the changes in U.S. antitrust policy driven by the “Chicago School” in the 1970s and 1980s. Lawyers and economists at the University of Chicago, under the leadership of Aaron Director, George Stigler, Richard Posner, Robert Bork, and others, found much to criticize in the antitrust policies of the post-World War II era, particularly successful government challenges brought to block proposed mergers in relatively unconcentrated markets, such as grocery retailing or shoe production. The Chicago School advocated for the use of modern price theory to determine whether mergers or other business

¹¹ The case of China is discussed in Li et al., (2012).

¹² See Baker (2003) for a contrary view.

practices actually resulted in consumer harm. Expert opinion, due in some measure to the influence of the Chicago School, evolved to accept much of this thinking in antitrust policy. As a result, a “consumer welfare” standard became central to analyzing allegedly anticompetitive business practices in antitrust enforcement.¹³ This framework is now under attack.

A. General Reforms

The most debated aspects of antitrust policy involve predatory pricing, vertical restraints, exclusive dealing, refusals to deal, and mergers. In these areas, U.S. Federal courts have increasingly required that the government or private plaintiffs demonstrate that any allegedly anticompetitive practices or mergers are likely to have an adverse effect on consumer welfare. In doing so, critics allege that the enforcement agencies and the courts have overweighted false positives relative to false negatives – more fearful of blocking potential efficiencies than of failing to safeguard against monopoly. Suggested reforms, therefore, often recommend a shift towards a policy that rebalances these tradeoffs.

Consider, for example, predatory pricing, a strategy through which a dominant incumbent seeks to deter entry and/or induce exit so as to raise prices, ultimately harming consumers. The incumbent prices aggressively in an initial period, incurring losses that are more than offset by capturing monopoly prices in future periods when competition has been reduced. However, such price-cutting inarguably embeds a pro-consumer phase in the short run. Furthermore, price-cutting is often undertaken -- without long-run price increases -- when network economies are in play. By growing the customer base, a firm may achieve the scale at which efficient platform development takes place. The creation of a large “installed base,” with “free introductory” offers and other “below cost” marketing inducements, may be profitable when economies of scale yield competitive superiority, even when retail prices fall and stay low (i.e., no monopoly price hikes materialize). Hence, it is not proof of predation to establish that competition between firms struggling to capture share results in the firms “losing money.” These operating losses may be (and frequently are) efficient start-up investments. It is common for large outlays to dominate

¹³ For an analysis of the origins of this framework, see Heyer (2014)

the early stages of evolving market leaders, when entrepreneurs undertake the risks of innovation.¹⁴

Errant predictions of predation are easily made – not just by academics or regulators, but by businesses. The CEO of the then-powerful incumbent Barnes & Noble threatened the upstart Amazon in the late 1990s, signaling that the dominant incumbent would bury the smaller firm if it did not agree to be cheaply acquired.¹⁵ Amazon the upstart survived, to put it mildly, and in fact eventually toppled the dominant Barnes and Noble.¹⁶ Blockbuster, an incumbent video rental provider with such apparent market power that the U.S. Government blocked its acquisition of Hollywood Video in 2005, conducted a “price war” to drive Netflix from the video rental field, circa 2004 (Keating 2013). Netflix survived, integrated into video streaming (and then video production), while Blockbuster declared bankruptcy in 2010.

Khan (2017) accuses Amazon of predation, but also criticizes the firm for charging prices that are too low (and for being so patient to realize profits) – without establishing that monopoly pricing has resulted from Amazon’s actions (Hazlett 2021). Given that the firm has pursued an “everyday low prices”¹⁷ policy for more than two decades, the window for executing a positive present-value strategy for long-run price increases might appear to have closed. Even if the price-cutting drives some players from the market, others may enter or threaten to enter, preventing the would-be predator from raising prices to recoup losses. Ignoring recoupment, as Lina Khan and other antitrust reformers propose, focuses the law entirely on protecting competitors – as it is designed to do. This approach might preserve rivals in some instances, but at the cost of discouraging beneficial price reductions in those cases as well as in others.

Vertical restraints are a set of practices that involve downstream distribution or upstream purchases of inputs required in the firm’s operations. The most important of these for antitrust

¹⁴ A spectacular example is provided by Tesla, which incurred high losses in its first years of operation in order to establish the scale economies it sought to engineer a new sector of the economy. Collins (2018).

¹⁵ In 1996 the Barnes & Noble CEO, Len Riggio, told Amazon CEO Jeff Bezos and Board member Tom Alberg that “they were going to launch a website and crush Amazon.” Undaunted, Amazon resisted entreaties to align with the far larger company. Barnes & Noble did then create a website, which the CEO originally wanted to name, “Book Predator,” but failed spectacularly to foreclose the entrant. Stone 2013, pp. 56-57.

¹⁶ After years of fading sales due to the popularity of Amazon, Barnes and Noble (a public company) was taken private at a value of \$638 million in a deal closing on August 7, 2019. At that time, Amazon’s market capitalization was \$887 billion. Alexandra Alter and Tiffany Hsu, [Barnes & Noble Is Sold to Hedge Fund After a Tumultuous Year](#), N.Y. TIMES (June 7, 2019); [YCharts](#) (Amazon Market Capitalization).

¹⁷ The strategy was borrowed by Amazon from Walmart and Costco (Stone 2013, p. 125).

policy involve contractual restrictions on the prices that a firm's distributors may charge, the size of these distributors' territories, limits on distributors' ability to sell competitors' goods or services, or "tying" arrangements that require buyers to purchase other products only from the firm.¹⁸ Early antitrust policy was more aggressive in targeting these policies, often viewing them as *per se* violations of the antitrust laws.¹⁹ In recent years, courts have moved away from that doctrine, switching to a "rule of reason" analysis, which considers costs and benefits generated by particular practices in the specific circumstances under scrutiny. This requires plaintiffs, including enforcement agencies, to show that the harms to consumers outweigh the gains from concomitant efficiencies.

One result of many of this legal shift regarding vertical restraints may be to facilitate price discrimination, such that buyers with price-inelastic demand pay more of the joint costs of production, while allowing relatively price-sensitive buyers (often of lower income) to pay less -- something closer to marginal costs. Such pricing practices had once been assumed to reflect categorical inefficiency (e.g., Kessel 1958), but it is now seen as potentially output-enhancing and thus pro-consumer (Baumol and Swanson 2003). Vertical restrictions are also commonly used as coordination mechanisms to remedy pricing conflicts, to prevent potential negative externalities (Demsetz 2011), or to encourage complementary sales efforts that might otherwise be under-supplied due to free rider problems (Dillenburg 1989). On the other hand, the use of explicit agreements to limit price competition is problematic when horizontal collusion drives contractual terms (Marvel and McCafferty 1985).

Exclusive dealing and refusals to deal are a broad category of potentially anti-competitive practices that a firm may employ to deny sales of some of its products to its rivals, its suppliers or downstream distribution channels, or its customers. These practices may harm consumers by blocking their access to competitive goods. Yet they may, alternatively, be pro-consumer. For example, a manufacturer's decision to compensate downstream retailers for building facilities to showcase and service a firm's products may be accompanied by a requirement that such facilities offer only the manufacturer's products. This exclusivity may incentivize the investment made by

¹⁸ *United States v. Paramount Pictures, Inc.*, 334 U.S. 131 (1948) was a classic application of antitrust law in this respect. It yielded several divestitures (separating movie studios from theaters) and imposed rules limiting marketing practices such as "block booking." The ruling has been widely criticized. Kenney and Klein (1983); Eckert and De Vany (1989); De Vany and McMillan (2004); Hanssen (2000, 2010); Gil (2015).

¹⁹ *Dr. Miles Medical Co. v. John D. Park & Sons Co.*, 220 U.S. 373 (1911).

the upstream producer, which might otherwise generate traffic for rivals who free ride on its outlays. Modern U.S. antitrust policy requires enforcement agencies or private litigants to provide evidence demonstrating that anti-competitive harms outweigh the benefits in pursuing antitrust claims. Some critics now favor a return to the *per se* illegality of these practices.

B. “Structuralism” versus the Consumer Welfare Standard

Modern antitrust critics allege not only lax enforcement but often reject the use of consumer welfare as the basis for deciding antitrust cases. However, these scholars do not reject consumer-welfare criterion altogether. Rather, in the tradition of Louis Brandeis, they prefer a structural approach, one that condemns bigness, even in its incipency. For example, Khan (2017, p. 738) emphasizes dangers in reliance on the consumer welfare criterion:

This approach is misguided because it is much easier to promote competition at the point when a market risks becoming less competitive than it is at the point when a market is no longer competitive. The antitrust laws reflect this recognition, requiring that enforcers arrest potential restraints to competition ‘in their incipency.’ But the Chicago School’s hostility to false positives—and insistence that market power and high concentration both reflect and generate efficiency—has undermined this incipency standard and enfeebled enforcement as a whole.

These Neo-Brandeisians tend to prefer a “structural” approach that returns to the Warren Court era approach when the Supreme Court upheld the antitrust authorities’ decisions to block mergers involving very small market shares. Brown Shoe was prohibited from acquiring Kinney’s, a combination that would have produced a national retail sales share of 5.2 percent.²⁰ Pabst was blocked from taking over Blatz, which would have given the post-merger firm 4.5 percent of the national beer market.²¹ Von’s and Shopping Bag were nixed from merging to a 7.5 share of the Los Angeles grocery store market.²² The idea of “incipency” was invoked to argue that, despite the lack of evidence of consumer harm in the deals before the court, the antitrust laws should nip emerging market concentration in the bud. Under this view, the risk, however small, of accepting a false negative (allowing an anti-competitive merger to go uncontested) outweighs the costs of pursuing a much larger probability of a false positive (blocking a benign or pro-competitive combination). In this earlier era, the proclivity of the

²⁰ *Brown Shoe Co. v. U.S.* 370 U.S. 294 (1962).

²¹ *U.S. v. Pabst Brewing Co.*, 384 U.S. 546 (1966).

²² *U.S. v. Von’s Grocery Co.*, 384 U.S. 270 (1966).

courts to allow antitrust authorities to block acquisitions was so pronounced that one Supreme Court Justice was led to remark, “The sole consistency that I can find is that in litigation under §7 [of the Clayton Act, regulating mergers], the Government always wins.”²³ While such a policy might place a dent in the contribution of mergers to advancing market concentration, it could block many efficiency-enhancing transactions as well.²⁴

III. Antitrust in the Digital Economy

U.S. antitrust policy is designed to address the exploitation of monopoly power to the detriment of consumers, but much if not most of the public concern about the dangers emanating from today’s large digital platforms does not stem from their predicted economic impact. Rather, it appears to derive from a fear that these companies are – collectively, if not individually – the dominant source of news, opinion, and other types of information in the modern economy; exhibit bias in providing access to such information; or pose a threat to their users’ privacy. These threats do not necessarily arise from firms who have monopoly power or engage in anti-competitive practices. Moreover it is unlikely that these threats can be mitigated or reversed by using the antitrust laws, which are designed to combat monopoly and anti-competitive practices (Shapiro 2018).

A. Competition and Antitrust in the Digital Economy.

There are two related sets of issues involving antitrust in the digital economy: (i) How can antitrust be modified to deal with economic forces that are shaping the new digital economy? and (ii) How can antitrust policies deal specifically with the “market dominance” of the leading platforms, such as, Amazon, Apple, Facebook, and Google, that have already emerged?

The application of U.S. antitrust policy to the rapidly-changing U.S. digital economy is complicated by the fact that many digital services emanate from two-sided platforms. The most common of these platforms give consumers an array of services – social networking, messaging, entertainment, Internet search, shopping, navigation, or photo storage – on one side of their platforms, and then sell access to the personal data collected in this process to businesses, generally to assist advertising and marketing of other products. With one side of the platform

²³ Justice Potter Stewart’s dissent in *U.S. v. Von’s Grocery Co.*, 384 U.S. 270 (1966).

²⁴ Rose and Sallet (2020) questions whether mergers contribute much to economic efficiency.

offering consumers services at a zero price, conventional antitrust analysis that focuses on the effects of monopoly on prices and output is altered. Even two-sided platforms that charge positive prices on both sides can generate substantial controversy in the application of modern antitrust policy.²⁵

1. Network Effects as a Competition Issue

The large digital platforms derive substantial benefits from “network effects” generated by their platforms (Rohlfis 1974; Liebowitz and Margolis 1994). Users find these platforms more attractive as they connect to an increasing array of services, businesses, or individuals. Positive feedback loops often enable such platforms to grow rapidly, scale efficiently, and become extremely valuable. Facebook, while not a first mover in social networking, became more important to subscribers as more of their friends, family members, and favorite organizations joined. The market tilted decisively away from Friendster and MySpace as Facebook surged. According to the Federal Trade Commission’s antitrust suit filed against Facebook (now known as Meta) in 2020, the platform achieved monopoly power by 2011. While end users are not charged a fee to access Facebook, economists have estimated willingness-to-pay (measuring consumer gains for subscribers). For example, experiments have been conducted in which subjects were offered payments to disengage from the service for one week. The revealed median price required by customers to drop Facebook was \$40 per week, or over \$2,000 per year, which yields a total consumer surplus valuation far higher than the market capitalization of the firm (Mosquera et al., 2020). Other studies have estimated similarly impressive consumer-based benefit levels (Corrigan et al., 2018; Herzog 2018; Brynjolfsson et al., 2019).

Google’s value proposition in search also gained as it grew, expanding the number of pages indexed and developing more sophisticated search algorithms, thus creating a substantial quality of service advantage over rivals such as Inktomi, Yahoo, Alta Vista, Overture and HotBot (Sullivan 2003). Today, Google has about six times the number of pages indexed as Microsoft’s Bing, its closest search engine competitor (WorldWideWebSize.com 2021).

²⁵ The decision of the Supreme Court in *Ohio v American Express*, 138 S. Ct. 2274 (2018), is perhaps the best example of such a case.

Amazon's initial success in selling books online led it to offer other products and to increasingly host independent vendors on its platform. By the second quarter of 2021, 56 percent of Amazon e-commerce revenue was generated by these third-party sellers (Chevalier 2021). And in burgeoning mobile services, Apple and Google exploited the network effects generated by the vast subscriber bases of their respective wireless operating systems to offer "app" developers access to customers. Independent software creators responded by designing more than one million distinct applications for download in each ecosystem. These developments were not generally anticipated; as recently as 2004, the mobile space was mocked by technologists as moribund in terms of content selections, who envisioned carriers providing few innovations beyond the sale of ringtones.²⁶

Start-ups must offer services sufficiently attractive to induce subscribers to switch from established platforms or to multi-home across platforms. Once a Facebook or a Google becomes the standard for all online users, with virtually universal reach, potential entrants may have to replicate their vast coverage to compete.²⁷ There has been a fear that network effects could create "winner-take-all" markets where the first movers are difficult to displace. Yet, displacement happens. The VHS standard for video-cassette recordings was an example; Microsoft's operating system for desk-top personal computers was another. (Apple's operating system, once a market share laggard, eventually conquered its handicap.) Qualcomm's CDMA radio technology was yet another victorious upstart, displacing the 2G GSM standard, strongly backed by European governments, in 3G and 4G.

Pre-digital markets imbued with deep network effects often posed more serious competitive constraints due to high customer switching costs. Telephone services, video recording devices, and computer operating systems with complementary software generated

²⁶ In 2004, ringtones were a \$4 billion global business. Today they are essentially free, with a wide variety embedded in smartphones. Nick Fernandez, #TBT The life and death of custom ringtones Here's how ringtones went from a multi-billion-dollar industry to a footnote in history, [Android Authority](#) (Oct. 31, 2019).

²⁷ A new entrant, Tik Tok, appears to be quite successful in challenging Facebook's erstwhile dominant position in social networking. Its Chinese parent, ByteDance, is now 1.5 times the size of Facebook in terms of market capitalization.

first-mover advantages, discouraging entrants because customers would have to replace devices, software, and human capital (knowledge of existing systems) to try a new product.²⁸

Today, with universal access to the Internet, consumer switching costs are often modest. A subscriber can toggle between social networking platforms, search engines, or online shopping sites with a few clicks across a variety of devices. Nevertheless, substantial network effects exist, underscoring the continuing importance of scale economies. Attempts by antitrust authorities to structurally reduce an established platform's subscriber base risk adjustments that will be unattractive to users and, thus, prove futile barring further measures to effectively block the benefits of network effects. Competition is more likely to come from innovative expansions of rival platforms, just as the wireline telephone monopoly of the 20th Century was undercut by mobile and broadband networks.

2. Subscriber Data as an “Essential Facility”?

The major digital platforms accumulate vast quantities of subscriber data. The rules governing such holdings are important not only for the protection of privacy,²⁹ but because these data support advertising services. Those services, in turn, enable large-scale investments in the creation and maintenance of platforms, applications, and networks, delivering (sometimes, extremely large) value “free” to users. The key importance of databases as inputs into evolving ecosystems naturally gives rise to competitive issues, as entrants must overcome the advantages wielded by established platforms.

Yet recent research by Tucker (2019) and others finds little support for the proposition that there are large economies of scale or scope in assembling digital subscriber data for advertising markets. She finds that the more important criterion for success is competitive superiority, specifically the development of algorithms finding and effectively utilizing the valuable information in the data. Besen and Verveer (2021) proceed from the opposite assumption: “Why Asymmetries in Data Holdings May Be Important for Competition.” But they provide no empirical evidence to support this theoretical possibility.

²⁸ Liebowitz and Margolis (1999) explain Microsoft's successful efforts to overcome the first-mover advantages of AOL, Prodigy, and CompuServe in the early days of online services.

²⁹ The “right to privacy” has evolved with the development of technology for hundreds of years (Warren and Brandeis 1890).

Further, the competitive aspects of dynamic processes are often left unexplored, as the asserted advantages of incumbency automatically drive firms to aggressively pursue such positions. This dynamic process delivers benefits to consumers (including, but beyond, zero-priced access for valuable services). Races for scale are widely seen in tech markets. One famous example is AOL's "carpet bombing of America" with sign-up disks for dial-up network access subscriptions in the mid-1990s, establishing the world's largest ISP, a momentous event instrumental in building the mass-market Internet (Swisher 1998). Another is Netflix' prolific rise in streaming video from the late 2000s, achieving industry leadership despite early market positions established in home video content by the (then) far larger Blockbuster, Amazon Prime, Walmart, Google/YouTube and Apple (Keating 2013). Notably, this leadership in video streaming is now being challenged by a number of major media companies.

On the reverse side, it is also instructive that large firms often attempt to enter adjacent markets, yet fail, revealing the limits of scale and scope economies. Microsoft, with its dominant position in the personal computer software market in the early 2000s, was entirely unsuccessful in establishing its products in the cable set-top box market (Farrell 2009). It then, after some early advances in wireless with Windows Mobile, was thoroughly routed by rivals Apple (iOS) and Google (Android), dragging Nokia's formerly formidable smartphone platform down with it (Tung 2019). NewsCorp, identified as one of the five gigantic media conglomerates asserting control over U.S. content markets (Bagdikian 2004), used its scale to buy MySpace in 2005, but to no avail: it was soon buried by an upstart entrant organized in a dorm room (FTC 2020). Google also used its considerable size to leverage into social networking with Google+ and to flop when users rejected the platform.³⁰

3. One Side or Both Sides of the Platform?

In 2018, the Supreme Court ruled against the government in a case alleging that American Express' policy of penalizing merchants for steering customers to credit cards that charge lower merchant fees violated the Sherman Act. The Court ruled that:

The plaintiffs have not carried their burden to show anticompetitive effects. Their argument—that Amex's antisteering provisions increase merchant fees—wrongly focuses on just one side of the market. Evidence of a price increase on one side of

³⁰ According to a Google+ software engineer, "Google Plus didn't fail because Facebook is invulnerable. It failed because of deep flaws embedded in it from the very start" (Talin 2019).

a two-sided transaction platform cannot, by itself, demonstrate an anticompetitive exercise of market power. Instead, plaintiffs must prove that Amex's antisteering provisions increased the cost of credit-card transactions above a competitive level, reduced the number of credit-card transactions, or otherwise stifled competition in the two-sided credit-card market. They failed to do so.³¹

This decision created a controversy among antitrust scholars that still rages.³² Should antitrust scrutinize each side of a platform separately, or must plaintiffs prove that the price of the overall service does not rise? If, say, a search engine engages in practices that impede competition in the zero-price consumer side of its platform but lower prices on the other side of its platform (benefiting, say, advertisers), with the latter gains estimated to be numerically superior to the former, should this practice be condoned -- or deemed an antitrust violation? Complicated issues also arise in proving competitive harm on the consumer side of the platform because such harm would not be registered in the form of higher prices or even in lower quality of consumer experience (Evans 2003).³³ It might be asserted that the alleged anticompetitive act was designed to impede entry into the offering of similar zero-priced services, entry whose effect on the perpetrator's service could not easily be measured. But, as noted above, even if the act reduces consumer welfare on one side of the platform, it might increase consumer welfare on the other side. There is little case law that could guide courts on how to weigh these offsetting effect.

4. Mergers

One of the most salient targets for reform of antitrust in the digital era is merger policy. Many critics of current antitrust policy view the current enforcement of Section 7 of the Clayton Act as misguided and a principal reason why Amazon, Facebook, and Google have achieved or have been able to maintain their prominent status in their respective markets. (See the extensive discussion of Amazon's growth in Khan (2017), and Wu (2018, pp. 119-26)). The argument is that blocking horizontal and vertical mergers in the manner of pre-Chicago antitrust policy would have prevented these companies from reaching their current size and allowed nascent

³¹ 138 S. Ct. 2274 (2018)

³² For opposing views, see Katz and Sallet (2018), and Manne (2019).

³³ The U.S. Government, in *FTC v. Facebook*, alleges that Facebook effectively raised prices to users (who pay nothing to access the platform) by lowering the quality of the service. The reduction is claimed to derive from a decline in privacy protection. One issue that immediately emerges is that the alleged quality reduction stems from data provided to advertisers to improve ad targeting, which makes users more likely to click -- presumably, because the ad is more relevant to them. This increase in relevance is surely a net increase in quality of service, perhaps fully or more than fully offsetting the decline that derives from less privacy. A federal court is trying this case now. Kang and Isaac (2020).

competitive threats (that the acquired firms represented) to reach maturity (Wu 2018; Baker 2019). Conversely, acquisitions by large, integrated firms enable platforms to innovate, while simultaneously inducing investments in additional start-ups from funders who see a future “liquidity event” as an incentive to commit risky capital to highly specialized firms.³⁴ It is difficult to test either hypothesis because counterfactuals are missing: how would Instagram or WhatsApp have developed if they had not been acquired by Facebook in 2012-14, and how would consumers have been impacted? Equally important, would Instagram or WhatsApp have even existed if their developers had known that they could not be acquired by large, existing firms at any time in their development?

Crandall and Hazlett (2022) examine the general level of merger and acquisition (M&A) activity by large tech platforms. The GAFAM enterprises, account for about 19 percent of the value of the S&P500.³⁵ Yet, of the 99 largest mergers, by market capitalization, since 2000, the only ones involving major tech platforms are the Microsoft acquisition of Linked-In in 2016 (ranked number 59 by value in 2019 dollars) and the Facebook merger with WhatsApp in 2014 (number 81 (2019)).³⁶

The growth of the Google, Amazon, Facebook, Apple, and Microsoft platforms overwhelmingly owes to internal expansion, not corporate takeovers. Crandall and Hazlett calculate the share of the current enterprise value of the largest 25 U.S. technology firms accounted for by the value of all their acquisitions from 1998 through 2021.³⁷ These digital platforms evidence relatively modest reliance on mergers and acquisitions, holding five of the ten lowest ratios of the cumulative value of acquisitions to February 2022 enterprise value (about two percent or less) among the largest 25 tech companies. The GAFAM platforms average (unweighted) ratio of acquisitions to February 2022 enterprise value was 0.088; the other 20 large tech firms averaged 0.804.³⁸ In contrast the acquisitions by Oracle, Cisco, IBM and

³⁴ “Acquisitions are broadly recognized as being key to Silicon Valley’s success. Buying startups is one of the fastest ways for companies to grow, enter a new market, acquire new technology and embrace disruption and innovation. Europe is often reported as far behind the USA in terms of startup acquisition, also an effective way to execute “open innovation” strategies.” Pisoni and Onetti (2018).

³⁵ Data available on www.finance.yahoo.com and <https://siblisresearch.com/data/us-stock-market-value/> as of March 31, 2022

³⁶ “[List of largest mergers and acquisitions](#),” Wikipedia (accessed Aug. 20, 2021).

³⁷ The value of these acquisitions are allowed to grow at the rate of the NASDAQ ETF shares from the date of acquisition through 2021.

³⁸ Crandall and Hazlett (2022), Table 2.

AT&T, adjusted for the growth in the NASDAQ, actually accounted for more than their February 2022 enterprise value!

Analyzing the effects of individual, allegedly problematic mergers of “nascent” competitors by the large GAFAM platforms is difficult because the modelling of rapidly-changing high tech markets “but for” the acquisition necessarily involves judgments about how the acquired company would have developed had it not been acquired. It has been suggested that a small acquisition, say Google’s purchase of Android (and its mobile device operating system) for \$50 million in 2005 (Callaham 2021), could be inexpensive for the purchaser but ultimately foreclose competition from a new start-up venture.³⁹ Such speculation presumes to know that Android would have been likely to achieve the enormous success that came post-merger without the complementary inputs supplied via Google’s ownership. Yet unique synergies and substantial investments by Google appear to have propelled the venture.

Contrast the Google-Android experience with the paths traveled by Nokia, the world leader in smartphones in 2006, and by RIM Blackberry, the initial innovator. Apple’s introduction of the iPhone in 2007 and the App Store in 2008 disrupted the market. Google deployed considerable investments in a mobile platform, far beyond its Android software acquisition, to launch a rival ecosystem in 2008. The tumult gave Microsoft reason to use its resources to rescue the now distressed incumbent, Nokia, forming a partnership in 2011 and then acquiring Nokia’s handset business in 2013. In 2016, Microsoft abandoned its mobile venture as a lost cause, writing off approximately \$8 billion in losses (Warren 2016).

The idea that an independent Android operating system would have succeeded where two mobile technology incumbents and Microsoft failed, is ambitious speculation. Such speculation implicitly suggests that one small investment by Google (in a software start-up that had not yet developed its first smartphone operating system) determined all that developed in a market that was about to experience explosive growth. It wholly discounts the far more expensive investments made by Google and by accomplished rivals Nokia-Microsoft and RIM, the maker of the hugely popular Blackberry:

³⁹ Lina Khan (2019, pp. 1068-69) cites the 2005 acquisition of Android by Google, and notes it as an example of a “dominant platform that uses its supracompetitive profits to buy its way into other markets [which] can raise barriers to entry...”

Research in Motion [RIM] started the game, but did not master it. That job would be left to the world's two mightiest computing empires... Apple and Google would go on to create iPhones and Androids, respectively, and thoroughly clobber the Canadians at their own game. BlackBerry seemed to many invincible even with a mere 9 million subscribers in 2007, when the iPhone was first launched. By 2011, there would be 472 million smartphones sold worldwide in one year" (Wu 2010, p. 310).

Clearly whatever contributions the Android acquisition produced for Google went to further the development of the company's competing mobile platform, challenging Apple's newly emergent dominance. The resulting rivalry displaced less efficient – but very large -- competitors and delivered a new, vibrant sector of the economy – Mobile Apps. Vast gains from innovation were generated.

Crandall and Hazlett (2022) also provide their retrospective judgment of 23 GAFAM acquisitions that feature prominently in current criticisms of current merger policy. They conclude that 10 of these acquisitions likely were competitive and thirteen had either benign or ambiguous effects.⁴⁰ These conclusions are necessarily somewhat conjectural because of the difficulties of projecting market outcomes “but for” these mergers. They are therefore an invitation to further research.

A recent congressional subcommittee report has proposed an amendment to the antitrust laws that would ban the acquisition by incumbent digital firms of “potential or nascent competitors.”⁴¹ Unfortunately, such proposals would likely reduce entry and incipient competition in the digital economy if less funding for start-ups ensues from a policy that closes one key avenue for start-ups to realize financial success. Given the recent slowdown in the formation of new firms in the United States, this is a serious concern, both for economic growth and for competition in the digital sector in particular (Feiner 2021). A compelling historical observation is that blocking the Android acquisition in 2005 would presumably have increased the costs (and decreased the likelihood) of Google's competitive response in mobile

⁴⁰ Crandall and Hazlett (2022), Table 4. They also include Microsoft's exclusionary strategy Aimed at Netscape which was found to violate Section 2 of the Sherman Act by the Federal courts.

⁴¹ “To strengthen the law relating to potential rivals and nascent competitors, Subcommittee staff recommends strengthening the Clayton Act to prohibit acquisitions of potential rivals and nascent competitors.” And “Since startups can be an important source of potential and nascent competition, the antitrust laws should also look unfavorably upon incumbents purchasing innovative startups. One way that Congress could do so is by codifying a presumption against acquisitions of startups by dominant firms...” (House Report 2020, p. 393).

communications. Similarly, the Amazon acquisition of Whole Foods in 2017 (Amazon's largest takeover), while criticized as anti-competitive (Khan 2017b), has actually been followed by an increase in rivalry in grocery retailing. The Amazon-Whole Foods market share of grocery retailing declined post-merger, due to aggressive new offerings from Walmart, Kroger, Sprouts, Instacart, and others (Magana 2018; Cox 2021).

B. Antitrust Challenges to the Current Major Digital Platforms

In 2020, major monopolization suits were filed against Facebook and Google. The Justice Department and eleven States charged Google with violating Section 2 of the Sherman Act by “unlawfully maintaining monopolies in the markets for general search services, search advertising, and general search text advertising in the United States through anticompetitive and exclusionary practices.”⁴² Two months later, the Federal Trade Commission (FTC) filed a suit against Facebook, alleging that Facebook had violated Section 2 by “buying up companies that present competitive threats and by imposing restrictive policies that unjustifiably hinder actual or potential rivals” in the market for “personal social networking services.”⁴³

1. The Relevant Markets

Both Facebook and Google operate two-sided digital platforms. They derive a very large share of their revenues – 98 percent and 80 percent, respectively – from the sale of online advertising to businesses.⁴⁴ On the other side, they typically charge consumers nothing for access to their services; their customers' revealed online behavior is the information the firms offer to advertisers. These two platforms' share of total digital advertising, combined, was 52.4 percent in 2021, down from 55.2 percent in 2019.⁴⁵ This is considerably below what would be required under most circumstances to trigger a monopolization charge, even if they were one firm (Liberto 2019; Editors 2021). Amazon's share of the digital advertising market grew from

⁴² *U.S., et. al., v. Google LLC*, U.S. District Court for the District of Columbia (DDC), October 20, 2020. (Hereafter, the “DOJ Google Complaint.” Subsequently, the State of Texas and the State of Colorado (joined by a number of other states) filed similar suits (*The State of Texas, et.al. v. Google, LLC*, District Court the State of Texas, December 16, 2020; *Colorado, et. al., v Google, LLC*, District Court for the District of Columbia, December 17, 2020.)

⁴³ *Federal Trade Commission v. Facebook, Inc.*, U.S. District Court for the District of Columbia, December 9, 2020 (“FTC Facebook Complaint.”), §1, revised in August 2021. This case was brought under provisions in the Federal Trade Commission Act that allow the FTC to bring cases charging violations of the Sherman Act.

⁴⁴ Annual Reports of the Companies, 2020.

⁴⁵ eMarketer (2022), available at <https://www.insiderintelligence.com/content/google-facebook-amazon-account-over-70-of-us-digital-ad-spending>.

just 7.8 percent in 2019 to 11.6 percent in 2021⁴⁶, and Apple’s share is now growing (Haggin 2021). While the three major digital media companies account for about 64 percent of total digital advertising, their position is now being threatened by Apple’s aggressive approach to protecting users’ privacy (Southern 2019). Ironically, Apple’s growth (bringing it close to Amazon in ad sales) is so rapid as to be attracting regulatory scrutiny: “Apple is becoming a bigger player in digital advertising, risking antitrust action and its image; Kneecapping Facebook and adtech companies in the name of privacy just happens to have tripled a key part of Apple’s ad business” (Benton 2021).

Facebook or Google may exercise market power on the consumer side of their platforms in order to reap the benefits of the derived customer information base in online advertising markets. Google accounts for more than 90 percent of worldwide search⁴⁷ and has faced charges that it has structured its search engine to favor its own services, such as shopping comparison apps.⁴⁸ In 2018, the European Commission fined Google \$5 billion for tying arrangements, where Google’s own applications (particularly Google Search) were embedded in its Android operating system for mobile phones. Google responded by unbundling the apps (D’Onfro 2018).

The Justice Department’s antitrust suit against Google focuses on general search services and search advertising. It alleges that Google has used a variety of anticompetitive practices to expand its service revenues derived from both mobile devices and traditional desktop computers. In particular, it alleges that Google uses its ownership of the Android mobile operating system and contractual arrangements with Apple to exclude entry into the general search market.⁴⁹ Its acquisition of the Android operating system in 2005 and, to a much lesser extent, YouTube, acquired in 2006, are featured in the complaint. However, the Justice Department does not argue for the divestiture of either in its preliminary prayer for relief (DOJ 2020).

In May 2018, German antitrust authorities announced a “preliminary investigation” into Facebook’s requirement that its users allow it to collect their private data tabulated by third-party

⁴⁶ *Id.*

⁴⁷ Statcounter data. As of August 2021, global search inquiries were tracked as: Google, 92.03%; Bing, 2.48%; Yahoo! 1.5%; Baidu 1.39%; Yandex 1.21%; DuckDuckGo 0.63% (website accessed Sept. 2, 2021).

⁴⁸ *State of Ohio ex rel. Dave Yost Attorney General v. Google LLC.*, Case No. 21 CV H, Common Pleas Court, Delaware County, June 8, 2021.

⁴⁹ See White (2021) for a provocative analysis of the Google-Apple relationship.

websites that the company would then use in its online advertising business (Hurst 2018). The requirement is alleged to be an “abuse of dominant position” under EU competition law.

The FTC suit against Facebook, filed in 2020 and amended in 2021, alleges that Facebook has monopoly power in the online “personal social networking” market, which the Commission alleges is distinct from other social network services provided by, say, LinkedIn, mobile messaging services, or “consumption-based” services, such as Spotify. The FTC alleges that Facebook has acquired and maintained market power through the acquisition of Instagram and WhatsApp and by denying potential competitors interconnection. These allegations, if proven, would provide the FTC with the opportunity to press for structural relief, including divestiture of Instagram and WhatsApp. However, Facebook’s recent loss of market share to TikTok and other platforms surely has made the FTC’s task much more difficult.⁵⁰

It thus appears that whatever the expressed concerns over the power of the new Internet giants, their position in some of the larger markets that they occupy – Internet advertising, for example – would not make them vulnerable to monopolization charges under Section 2 of the Sherman Act, except perhaps in subsets of their businesses. Google may be vulnerable because of its position in online search, or because it has a dominant position in some of the tools that link advertisers with publishers or other on-line sites where ads are displayed.⁵¹ Facebook’s liability may depend on the definition of the relevant online social media market.⁵² But even if these suits are successful, it is unclear that antitrust authorities could prove that Facebook’s and Google’s alleged dominant positions derive from anticompetitive behavior that could be remedied via sanctions that improve outcomes from consumers’ perspectives.

Commented [r2]: Do we want to insert the “inverse Cellophane fallacy” argument here. If so, we should stress that it is strange that Facebook would be operating in a region of inelastic demand, surely an irrational strategy for an experienced “monopolist”! More likely is your observation that consumers generally do not worry about the loss of privacy inherent in a move to use their personal data for targeted advertising – they may actually benefit from it.

⁵⁰ Facebook’s global monthly average users (MAUs) have barely grown since the end of 2020 and have even begun to decline in late 2022. See Datareportal (2022), *Facebook Data and Trends*, 15 August, available at <https://datareportal.com/essential-facebook-stats>. In the interim, TikTok has been growing rapidly and is now the world’s most downloaded mobile app, surpassing Facebook, Instagram, and WhatsApp. See Bloggingwizard (2022), October 26, available at <https://bloggingwizard.com/tiktok-statistics/>.

⁵¹ The *State of Texas, et. al. v. Google* suit (see above) alleges that Google has monopolized the market for display ads and other “exchanges” and “networks” used by advertisers and publishers in online transactions.

⁵² A federal judge dismissed the FTC complaint for failing to establish that personal social networking is a relevant antitrust market. U.S. District Court for the District of Columbia, Memorandum Opinion, *FTC v Facebook, Inc.*, Civil Action No. 20-3590 (JEB) (June 28, 2021). The FTC then [amended its complaint](#) (Aug. 19, 2021).

2. Monopolization

The U.S. antitrust suits filed against Facebook and Google are the first “big cases” filed charging monopolization since *U.S. v Microsoft* two decades ago. These charges, if proven, could result in more severe structural and behavioral remedies than those that were imposed in *Microsoft*. On the other hand, the major monopolization cases of the past did not have the salutary effects often attributed to them (Crandall and Winston 2003). Posner (2001, p. 102) views monopolization cases skeptically, arguing that any attempt to use the antitrust laws to deconcentrate an industry “...would not be effective, and even if it were its social costs would exceed its benefits.” Crandall (2001) concludes that monopolization cases that resulted in structural remedies, *i.e.*, divestitures, have been generally ineffective. The arguable exception, *U.S. v AT&T*, succeeded in lowering long-distance rates, but this result could have been obtained by rules available for implementation by the Federal Communications Commission long before the antitrust suit was filed in 1974, thereby obviating the need for the courts to mandate a costly breakup of this giant company.⁵³

Regardless of their effect in past decades, major monopolization suits look even more difficult to press in the digital era. The rapid and unpredictable changes in technology can undermine a dominant market position very quickly. Recall the fear of the combination of AOL and Time Warner (in a 2001 merger that is still the largest in U.S. history), or of IBM’s System/360 hegemony in computing, that motivated earlier antitrust actions. In the modern digital era, however, successful entry often requires a substantial period of time for building a platform and achieving necessary scale. For example, Facebook was not profitable until its 6th year of operation; Amazon until its 10th year; and Tesla until its 12th year. To consider Facebook’s current market position as an indication of its market power in the forthcoming months or years ignores the enormously rapid growth of TikTok as it extends its platform. The growth of TikTok surely helps to explain why Facebook’s growth has all but ceased and its market capitalization has fallen four times as rapidly as the NASDAQ composite index to date in 2022.⁵⁴

Equally important is the difficulty in proving an effect on consumer welfare from high-tech mergers or allegedly anti-competitive practices. How does one prove that an acquisition by

⁵³ This outcome, promoting long-distance competition without a divestiture order, was the path undertaken by regulators in Canada. Crandall and Hazlett (2000).

⁵⁴ Source: Yahoo! Finance.

Facebook, Google, or other platforms of a complementary or even rival platform had a deleterious impact on consumers when such a merger enhances the value of the platform's service at a continuing price of zero? The government must establish that the acquisition eliminated a likely successful competitor that would have provided even more valuable offerings for consumers at a zero price than those offered by the acquiring firm, post-merger. This is a difficult evidentiary task.⁵⁵ Indeed, current advocates of a "structuralist" antitrust policy prefer a more straightforward attack on market concentration and a merger policy that either bans mergers or reverses the burden of proof for acquisitions by large digital platforms.

3. Antitrust Remedies in the Digital Era

Antitrust is particularly challenged in today's digital markets for at least two reasons. First, any judicial decree that results from a verdict that a digital platform illegally monopolized its market(s) must address the purportedly illegal practices that generated the monopoly. As the trial court in the *Microsoft* case discovered, the court may not simply impose structural changes ("relief") that it believes will result in a more competitive market unless this structural relief addresses the practices that generated the monopoly power.⁵⁶ Second, it may be swimming upstream to attempt to constrain digital platforms even via structural decrees. Relentless network effects drive platforms. Competition would, presumably to meet consumer expectations, have to derive from multiple Google-like search engines or Facebook-like social media platforms with broad coverage, not from fragmented versions of each.

A number of recent expert studies have addressed the problems posed by the dominant digital platforms for antitrust enforcement: the Stigler Committee on Digital Platforms (2019), the Furman Report (2019) prepared for the United Kingdom, and the European Commission's Vestager Report (Cremer et al., 2019). All three recommend more aggressive policies⁵⁷ and would weaken the burden of proof demanded of antitrust authorities. Each recommends similar

⁵⁵ The argument is likely to be attempted the FTC v. Facebook suit now being litigated, however. See Hazlett (2022).

⁵⁶ *United States v. Microsoft Corporation*, 253 F3d. 34 (D.C. Cir. 2001).

⁵⁷ For instance, the Stigler Report (p. 94) offers: "Much US antitrust law is driven by a judgment, embraced by the Chicago School, that avoiding false positives (good conduct judged to be bad) is more beneficial to society than avoiding false negatives (anticompetitive conduct judged to be good). This judgment rests on the beliefs that false positives are difficult to correct but that false negatives will be quickly corrected by market forces. These beliefs seemed plausible in 1975 in a Chicago School framework, but they have never been empirically demonstrated and have fallen into disrepute."

remedies for multi-sided digital platforms with strong network effects: (i) data portability, (ii) data sharing, (iii) interoperability, (iv) non-discrimination mandates, and (v) imposed limits on platform integration into complementary products or services.

Any antitrust suit that seeks to mandate data portability, data sharing, or interoperability across platforms would argue that a platform's failure to provide such access is anticompetitive.⁵⁸ A defendant firm would respond that its decisions were driven by a desire to build an efficient, secure platform, capturing network effects. Should the government prevail, constructing remedies for data sharing, data portability, or interoperability would be extremely complicated; the *AT&T* and *Microsoft* cases are a guide. In both instances, interoperability provisions were difficult to execute and required several years to implement. In neither case did these requirements contribute to an increase in competition (Crandall 2005, Ch. 4; Childers and Page 2007). Knotty technical and pricing issues would arise.⁵⁹ The time required, even if the courts granted relief, might well render the remedy obsolete before it became implemented.⁶⁰

The proposals to require non-discrimination or to ban vertical integration into downstream markets are based on a concern that these platforms can impede entry into their home markets or downstream markets by favoring their own services or products, short-circuiting competition. These concerns have focused on shopping and search services, and they have a long history (Salop and Scheffman, 1983). A ban on dominant platforms' entry into complementary markets might enhance the financial viability of entrants. Yet, enforcing such a ban as a remedy in monopolization suits brought against the current dominant platforms would be problematic, because of the difficulty in defining the range of such complements in the rapidly-changing digital economy and showing that such integration is harmful to competition even as it directly rewards customers by increasing the utility of existing platforms. Moreover, such a ban may be unlikely to provide a remedy for the alleged market power of the platform itself.

⁵⁸ See, for example, *Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398 (2004), for a discussion of this issue.

⁵⁹ Could these remedies be designed without providing that the platform has a right to a fee for making its platform or data available to competitors? And, if so, must the fee include a charge for the real option granted to the competitor for delaying or avoiding the required investment in its own data or functionality? On regulators grappling with such complexities, see, e.g., Pindyck (2004).

⁶⁰ The implementation of network sharing under the 1996 Telecommunications Act was essentially abandoned in 2005 after numerous court cases and even more numerous bankruptcies of entrants who relied on such sharing.

As difficult as it is to identify the allegedly anti-competitive actions that may have led to the rapid growth of today's large digital platforms, it may be even more difficult to design remedies that do more good than harm. Launching into years or even decades of court supervision of a decree in a dynamically evolving marketplace is not a prescription for success, as discovered when Congress was forced to shift the administration of major aspects of the *AT&T* decree to the Federal Communications Commission fourteen years after the decree was entered (Crandall 2005). Many of the critics of the concentration in digital markets therefore propose a supplement, or perhaps an outright replacement, for antitrust: a new regulatory body.

IV. Digital Antitrust Legislation or A New Regulatory Authority?

Critics of the last fifty years of antitrust jurisprudence generally focus on the inadequacy of enforcement – “Antitrust has fallen into hibernation” (Wu 2018, p. 18) -- or the centrality of the consumer welfare standard. But the trends cited as justifying such beliefs are misinterpreted in many instances, and then found to be generally representative of economic changes found in international markets. Even where authorities might define specific anticompetitive actions, countering them in existing law with solutions that avoid wholly offsetting collateral damage is a significant hurdle. Proposed solutions to this problem fall into two categories: (1) New antitrust legislation targeting large digital platforms and (2) Establishment of a digital regulatory authority.

A. Current Legislative Proposals

Continuing the debate over U.S. antitrust policy and adjusting antitrust to address new challenges in our increasingly digital world would seem to be less of a risk than the establishment of a new regulator with wide-ranging authority over the digital economy. This approach is now underway: Four bills have been reported out of the House Judiciary Committee in the 117th Congress,⁶¹ These bills, which address a number of alleged anticompetitive acts by the largest digital platforms, including “self-preferencing,” acquisitions of “nascent” competitors, and refusal to interconnect with actual or potential competitors, have not advanced to the House floor as of this writing.

Two pieces of legislation in the 117th Congress that appear to have had the widest support are The American Innovation and Choice Online Act (S. 2992) and The Open App Markets Act (S. 2710), directed solely at the largest digital platforms. The former would prohibit large platforms, those with a market capitalization of \$550 billion or more (Amazon, Apple, Google, Microsoft, and (perhaps) Facebook⁶²) from discriminating in favor of their own complementary products or services. The latter would ban the large “app” platforms, currently Apple and Google (Android), from requiring app developers to consummate their customer transactions on their platforms and from requiring that the prices of these apps not be sold at lower prices on other platforms.

⁶¹ For a full discussion of these bills, see Congressional Research Service (2021), *Big Tech Antitrust Bills*, August 13, available at <https://sfp.fas.org/crs/misc/R46875.pdf>.

⁶² Facebook has been losing market share to TikTok, and its market capitalization has declined substantially to much less than \$550 billion.

The American Innovation and Choice Online Act is the more ambitious of the two proposals. It would prohibit the largest platforms from overtly or implicitly discriminating in favor of their own products and services in any of a variety of ways. It also would require these platforms to allow other businesses to interconnect with them by using their own software and it would ban any subsequent uninstallation of such software. The covered platforms would also be banned from using the non-public data of these interconnected users in support of their own products or services.⁶³ This legislation has been criticized for limiting the successful large platforms' ability to exploit the opportunities to provide its users with valuable new products and services and for potentially allowing other businesses to interconnect with the platforms in a risky manner. Some even suggest that the interoperability provisions allow foreign companies to create a national security risk through such connections.⁶⁴

The Open App Markets Act is directed principally at Apple and Google, who maintain large app stores for iPhone and Android wireless devices, respectively. These app stores require businesses who use them to conform to a variety of requirements, including consummating all transactions over the app stores' platforms. In practice, this means that all revenues derived from an app is subject to the fees charged by the app platforms, a requirement that is particularly troublesome to businesses that market video games over the platforms – games that often derive substantial revenues from consumers as they play these games. The Act requires that these two app stores allow app developers to use an outside payment system and forbids the imposition of a rule that the app developers not offer their apps on other platforms at a lower price.⁶⁵

It is notable that neither of these latter proposals attempts to attack the sources of the dominance of the large digital platforms; they simply constrain the platforms' ability to extract value from their platforms. It is very difficult to design antitrust tools that can combat the network effects that have driven firms such as Amazon, Google, and Apple to the positions that they currently enjoy. Any attempt to limit these network effects is likely to have adverse effects on consumer welfare, denying consumers the benefits of economies of scale and scope. It seems inevitable that competition authorities will have to focus on how to increase competition *for* the relevant digital markets rather than competition *within* these markets.

B. A New Regulatory Authority

To some critics, trial-and-error adjustments to the inexorable progression in digital markets demand constant oversight. As a result, the Stigler Center report recommends the establishment of a new Digital Authority:

Regulation offers a valuable addition to antitrust enforcement. It can help design the digital landscape and align the interests and incentives of platforms and key providers with those of consumers and society. . . Moreover, some of the problems discussed above may have only one structural solution: breakup of the platform. An enforcer might not want to choose that option because it is very disruptive. But less disruptive ex post remedies require ongoing monitoring, which antitrust enforcers are not well-positioned to do. Handing that job off to a regulator might better serve consumers (Stigler Committee on Digital Platforms 2019, pp. 100-101).

The Furman Report offers a similar recommendation.⁶⁶

Thus, we seem to have come full circle on the antitrust debate in the last half century. The Chicago School, notably, Stigler (1971) and Peltzman (1976), advanced theories of regulation that stressed the importance of political and economic forces that capture regulatory decisions and compromise efficient outcomes. The deregulation movement, heavily influenced by theoretical and empirical research on this relationship, was persuasive for decades.⁶⁷ If monopoly problems arose in deregulated sectors or other in other sectors, surely antitrust would be a better solution than the discredited regulatory commissions of the late 19th and early 20th centuries. Now, despite no new theory that would suggest that earlier research was in error or

⁶³ For further details see Tom Romanoff, (2022) “The American Innovation and Choice Online Act: What it Does and What it Means,” Bipartisan Policy Center, January 20, available at <https://bipartisanpolicy.org/explainer/s2992/>

⁶⁴ Mark Jamison (2022), “Congress Could Weaken U.S. Competitiveness with These Two Bills,” *National Interest*, August 21, available at https://www.aei.org/op-eds/congress-could-weaken-u-s-competitiveness-with-these-two-bills/?mkt_tok=NDc1LVBCUS05NzEAAAGGacM-upbm_pvXtonyBXmo2q8bGYNeGJE6P4Jcd2S-fXmQKV0xL1h4Nb09bX-QIH-l0pfvRdg0hBSG3HUjZmqJn5q8XD_czWZlXW7oguZ8o7E.

⁶⁵ Full details are available at <https://www.congress.gov/bill/117th-congress/senate-bill/2710>.

⁶⁶ “Solely relying on merger and antitrust enforcement can create delays and uncertainty that can be bad for large incumbents and small entrants alike. Neither is well designed for the intensive and ongoing work that needs to be done to facilitate competition and entry through making it easier for consumers to move and control their data, and for new digital businesses to interoperate with established platforms. . . This is why the Panel is recommending the establishment of a digital markets unit, given a remit to use tools and frameworks that will support greater competition and consumer choice in digital markets, and backed by new powers in legislation to ensure they are effective.” Furman Report 2019, p. 5.

⁶⁷ See Winston (1993, 2006); Yergin and Stanislaw (1998); Kahn (2004); Micklethwait and Wooldridge (2014).

any new evidence that economic regulation has proven to be a success, expert opinion may be turning against antitrust.

Calls for a new regulatory body derive in part from a concern that antitrust authorities and the courts have insufficient expertise to design and enforce rules for competition in the digital sector. But amassing such expertise is the mission of the existing antitrust agencies – in the Justice Department and/or the Federal Trade Commission, in the case of the United States. The argument for the creation of a new Digital Authority appears to presume that each generation of technology requires its own regulatory agency. That experiment has been conducted, however. “When it was created in 1887, the Interstate Commerce Commission seemed essential to proper management of railroads,” wrote Peter Huber. “But when it was abolished in early 1996, hardly anyone noticed. We never did create a Federal Computer Commission. The computer industry has nonetheless developed interconnection rules and open systems, set reasonable prices, and delivered more hardware and more service to more people faster than any other industry in history” (Huber 1997, p. 9).

Scant analysis has, on the other hand, been undertaken to justify current proposals to upend the conventional wisdom that Huber conveys. Agency capture is still widely seen as problematic, and a particular threat when government creates an industry-specific regulator. In fact, the Stigler Report suggests placing the new Authority in the Federal Trade Commission to reduce influence exercised by digital incumbents. This follows the observation that the FTC, operating as an economy-wide regulator of business, is less prone to capture than industry-specific regulators (Picker and Carlton 2006, p. 21). The search for walls to protect regulators concedes the need for defenses, but forwards an unproven methodology. Meanwhile, Lina Khan, perhaps the leading antitrust critic, has been appointed Chair of the FTC. This has led to legal challenge by at least one of the digital giants,⁶⁸ but so far seems to prove another point: the existing antitrust structure can accommodate strategic changes in the direction of policy and undertake hearings, studies and enforcement initiatives designed to modify antitrust jurisprudence. The economic rents available for potential regulatory distribution are enormous: Amazon, Apple, Facebook, and Google have a combined market capitalization in mid-2022 of nearly \$7 trillion. By comparison, the monopoly owned by AT&T (when sued by the U.S. DOJ)

⁶⁸ [“Facebook Asks for Recusal of FTC Chair Lina Khan, Claiming Bias,” CBS News \(July 14, 2021\).](#)

had a market capitalization of just \$47 billion (Oppenheimer 2020, Ch. 11), or \$270 billion in mid 2022 dollars,⁶⁹ when the 1974 antitrust suit was filed. Given the potential rewards available, political coalitions would form to pressure any new Digital Authority in a manner described by Peltzman (1996). The past experience with industry-specific regulators suggests that it is unlikely that the new regulatory authority would single-mindedly pursue the maximization of consumer welfare. Continuing the debate over U.S. antitrust policy and adjusting antitrust to address new challenges in our increasingly digital world would seem to be less of a risk than the establishment of a new regulator with wide-ranging authority over the digital economy.

V. Conclusion

The impetus for revising U.S. antitrust policy clearly derives from the rapid growth of a small number of large digital platforms that now account for a substantial share of the U.S. equity market. It is buttressed by an understandable concern that economic concentration is rising in much of the economy. Both trends are in large part driven by the inexorable economies of scale and scope provided by the Internet in the modern economy, and the increase in concentration is also present in other developed economies.

Some would abandon the consumer welfare standard that has driven antitrust policy for the last 40 years, others would strengthen merger policy by lightening the burden of proof required to reject mergers, particularly by the largest tech companies. But the evidence is that these platforms have not grown through merger but by internal growth unambiguously suggestive of efficiencies. Others would establish a new regulator to oversee competition policy in the digital sector despite substantial historical experience that industry-specific regulatory agencies are highly vulnerable to capture by producers. The deregulatory reforms of the 1970s and 1980s have been shown to remove barriers to competition, producing widely beneficial effects for consumers.

Heightened measures to grapple with the threat of monopoly power in the digital sector are necessarily constrained by important economies of scale and scope. Moreover, blocking acquisitions of “nascent” competitors by the large digital platforms puts funding sources for

⁶⁹ Adjusted by the CPI-U, average annual index value (estimated for 2021), from the Federal Reserve Bank of Minneapolis, <https://www.minneapolisfed.org/about-us/monetary-policy/inflation-calculator/consumer-price-index-1913->.

start-ups at risks, potentially undermining technological innovation. Antitrust reform must be careful to avoid these threats to consumer welfare.

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