

# Establishing Market and Monopoly Power in Tech Platform Antitrust Cases

The Antitrust Bulletin

1–16

© The Author(s) 2022

Article reuse guidelines:

[sagepub.com/journals-permissions](https://sagepub.com/journals-permissions)

DOI: 10.1177/0003603X211066984

[journals.sagepub.com/home/abx](https://journals.sagepub.com/home/abx)**Marshall Steinbaum\***

## Abstract

In June 2021, a federal judge dismissed the Federal Trade Commission's first monopolization complaint against Facebook on the grounds that it did not plead sufficient facts to establish that Facebook possesses monopoly power in online social networking. The ruling highlights two contentious aspects of antitrust jurisprudence: the legal necessity of establishing a defendant's monopoly power as part of Sherman Act liability for unilateral conduct, and of establishing market power as part of liability for some forms of multi-lateral conduct, as well as the few mechanisms available to plaintiffs in both public and private enforcement to accomplish that, especially following *Ohio v. American Express*. This article makes two related claims: that direct evidence of market power is plentiful and should be understood as such by courts, and that exactly the direct evidence of market power that courts should consider also establishes that relevant markets on each side of tech platforms are small when properly defined, whatever defendants may say.

## Keywords

market power, platform, residual demand elasticity, residual supply elasticity, two-sided

## I. Introduction

Just as empirical research in economics increasingly finds that market power is pervasive in the economy,<sup>1</sup> demonstrating that any given antitrust defendant possesses it is increasingly difficult. And as ambitious and legally innovative cases against dominant tech platforms are taking shape, they are running headlong into the jurisprudence inherited from an earlier time, when economists and courts

- 
1. Jan De Loecker, et al., *The Rise of Market Power and the Macroeconomic Implications*, 135 Q. J. ECON. 561–644 (2020); Gauti B. Eggertsson et al., *Kaldor and Piketty's Facts: The Rise of Monopoly Power in the United States*, 124 J. MONET. ECON. S19–38 (2021), <https://www.sciencedirect.com/science/article/pii/S030439322100101X> (last visited Oct. 7, 2021); Simcha Barkai, *Declining Labor and Capital Shares*, 75 J. FINANCE 2421–63 (2020), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3489965](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3489965) (last visited Mar. 10, 2020).

---

\*The University of Utah, Salt Lake City, UT, USA

### Corresponding Author:

Marshall Steinbaum, The University of Utah, Salt Lake City, UT 84112, USA.

Email: [marshall.steinbaum@utah.edu](mailto:marshall.steinbaum@utah.edu)

presumed market power was the exception rather than the rule and that even where it existed, it would dissipate of its own accord in the absence of litigation or regulation.<sup>2</sup>

In June 2021, a federal district court dismissed the Federal Trade Commission's (FTC) first monopolization complaint against Facebook on the grounds that it failed to plead a sufficient case. The judge wrote

The FTC has failed to plead enough facts to plausibly establish a necessary element of all of its Section 2 claims—namely, that Facebook has monopoly power in the market for personal social networking services. The complaint contains nothing on that score save the naked allegation that the company has had and still has “a dominant share of that market (in excess of 60%).”

Significantly, the judge explicitly stated that such a claim might suffice to establish market power at the pleading stage in a traditional goods market, but not in the case of social networking, since the nature of output in the market is not well established, and many applications have some element of social networking built into their function. Moreover, like multi-sided platforms in general, the social networking business model has come to rely on a free or subsidized service for users. In the absence of sales or revenue from the consumer-facing side of the platform, the market shares of each potential competitor are difficult to define.

But Facebook's near-monopoly on users' attention and data gives the platform a great deal of power in dealing with its other two sets of counterparties: advertisers and content creators. The real business of social networking is to compete for its users' attention, and by extension, their data. Having diverted that from alternatives, the social network charges advertisers and publishers for the ability to reach the customer base they were once able to access themselves or via alternative channels. The lack of revenue, and therefore revenue shares, on the downstream side is what made the FTC's complaint defective, and that lack of revenue is predicated on Facebook's being a platform business—able to give away a service to consumers for free, and gain a monopoly market share from so doing, the better to extract payments from upstream counterparties. In this setting, a jurisprudence that requires monopoly power be established by a predominant market share in the relevant market, where market share is measured by sales or revenue, is going to fail to find market power precisely where it is most present.

The difficulty in establishing monopoly power is further observed in the private lawsuit *Epic Games v. Apple* charging violations of the Sherman Act, California's Cartwright Act, and California's Unfair Competition law. The judge in that case issued a bench ruling on the merits in September 2021, concluding that Apple possessed market power but not monopoly power in the market for “mobile gaming transactions” en route to a ruling for the defendant on the Sherman Act claims. The ruling states “Apple is only saved by the fact that its share is not higher, that competitors from related submarkets are making inroads into the mobile gaming submarket, and, perhaps, because plaintiff did not focus on this topic.”

Part of the court's reluctance to find monopoly power in that case was due to the fact that “mobile gaming transactions” became more numerous even as Apple was undertaking the conduct at issue in the case, which gives the *Epic Games v. Apple* ruling a similar flavor as *Ohio v. American Express*: within the category of two-sided transactions platforms, if the number of transactions is increasing, that precludes a finding of market power notwithstanding the structure of the market or the competitive effects of any conduct subject to challenge. The assumptions motivating that holding in both *Epic v. Apple* and *Ohio v. Amex* appear to be that competitive effects can only be evaluated with respect to

---

2. Frank H. Easterbrook, *Limits of Antitrust*, 63 TEX. LAW REV. 1–40 (1984) frames antitrust enforcement in terms of error-cost analysis and argues that the tendency for “false negatives” to disappear of its own accord due to profits incentivizing entry militates in favor of a *laissez faire* approach to enforcing the antitrust laws.

output<sup>3</sup> and that transactions on transactions platforms are the analog to the economic concept of output. The *Amex* court even went so far as to say that the output of transactions platforms is transactions, which both consumers and merchants consume, and also that services to each set of counterparties are inputs to the credit card platform's output of transactions.<sup>4</sup> That would seem to invert the idea of platform multi-sidedness, with counterparties on distinct "sides." But even aside from that confusing schematization, the number of transactions on the platform, and their trend over time, is not a good measure of the platform's market power or lack thereof.

The aim of this article is to characterize how market power should be measured in light of platform multi-sidedness, and why existing antitrust tools, caselaw, and the economic assumptions underlying both are not well suited to that task. The crucial variable that determines the market power that a platform enjoys on a given "side" is summarized by the residual supply elasticity (upstream) or demand elasticity (downstream) of counterparties vis-à-vis the platform.<sup>5</sup> In most empirical applications, that measure of market power would militate in favor of lower, rather than higher, thresholds for proving market power; direct, rather than indirect, evidence of market power; and generally smaller markets/higher measured market shares and concentration as a consequence rather than a cause of weakened competition.

A further aim of this article is to move beyond the metaphysical quality that market definition has taken on in some tech platform case. For example, the judge in the Facebook case opined that many applications possess some functional elements of what we have come to call social networking. In *Epic Games v. Apple*, the judge decided unilaterally that gaming apps are different from other kinds of apps (thus, other types of app in a single ecosystem/programmed to be used on a given operating system are outside the relevant market, as is gaming-specific hardware that doesn't run non-gaming applications), but also that gaming apps compete with one another across operating systems and app stores, even if individual users do not substitute between mobile operating systems. These assertions are arbitrary, based on casual understandings of which firms and products compete with which, and what they compete over. This article supplies a checklist of indicia of market power which courts can apply in place of gut-level intuitions about platform competition.

Section II starts by reviewing why proving market or monopoly power is both part of the caselaw and conceptualized separately from competitive effects, as well as why concentration and market shares, and hence market definition, are the central and seemingly unique means of accomplishing that. Section III offers an alternative actionable definition of market power at a high level of generality, but one that is better suited to multi-sided platforms than what currently exists in caselaw. Section IV then characterizes multi-sided platform competition and presents the concept of residual demand or supply

- 
3. "Fundamentally, the rule of reason considers whether a restraint is output increasing or decreasing." MARK JANIS ET AL., *IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW* (3rd ed. 2016), <https://www.repository.law.indiana.edu/facbooks/160>. This is what Newman terms the output-welfare fallacy. John M. Newman, *The Output-Welfare Fallacy: A Modern Antitrust Paradox*, 107 *IOWA LAW REV.* (2022), <https://papers.ssrn.com/abstract=3866725> (last visited Oct. 8, 2021).
  4. "Credit-card companies are best understood as supplying only one product—transactions—which is jointly consumed by a cardholder and a merchant . . . Merchant services and cardholder services are both inputs to this single output." *Ohio vs. American Express*, 838 F 3d 179 (2018).
  5. The idea that residual demand elasticity is a sufficient statistic for a firm's market power is not novel. See, for example, William M. Landes & Richard A. Posner, *Market Power in Antitrust Cases*, 94 *HARV. LAW REV.* 937 (1981): ". . . it is the response of the firm's output to a change in its price that determines the degree to which it has market power." This definition appears to make platforms no different from any intermediate distributor in a supply chain and thus not in any special category of their own. What motivates the special application of this intuition (regarding supply and demand elasticities) to platforms is the insight it generates in getting beyond zero prices and/or subsidies on the downstream side as pro-competitive. Instead, we should understand those features as one powerful mechanism by which platforms exert their market power against paying counterparties.

elasticity as the central index of market power on each side of a multi-sided platform. Section V describes the findings that would suffice as direct evidence of market power in the case of multi-sided platforms. Section VI treats the special case of price discrimination, given the disagreement in the literature about its competitive significance, as well as a novel application of price discrimination to the case of content moderation by a social network like Facebook. Section VII entertains the idea of departing from previous practice of separating the market power and competitive effects analysis by instead combining them. Section VIII concludes by returning to the FTC's case against Facebook and its revised complaint filed in September 2021.

## II. Market and Monopoly Power in Antitrust Caselaw

Various antitrust cases define market power as the power to charge prices in excess of marginal cost or of average costs,<sup>6</sup> or specifically to do so by excluding competition.<sup>7</sup> Other refinements include that the prices must be in excess of marginal cost for a significant period of time (implicitly, that the longevity of economic profits entails the exclusion of competition that would otherwise erode them); that the means of charging a price in excess of marginal cost is required to be a reduction in output<sup>8</sup>; and that the output reduction by a single firm, whether actual or potential, must affect the *market* price, not just the price that the firm charges or the economic profits it earns. There is also conceptual drift as to whether proving market power requires showing that that power has in fact been exercised in the manner envisioned (restricting output; excluding competition), versus whether establishing its potentiality suffices.<sup>9</sup> Monopoly power, meanwhile, is simply an intensification of this definition along some dimension: the degree of the economic profits, the length of time over which they are enjoyed, or the amount of competition excluded.

The federal jurisprudence of vertical multi-lateral conduct like vertical price-fixing or exclusive dealing (conduct typically employed by multi-sided platforms) necessitates a finding of market power, and the jurisprudence of monopolization necessitates a finding both of monopoly power and of anti-competitive conduct to acquire or maintain that power.<sup>10</sup> The two assumptions operating jointly to justify this are, first, without nefarious conduct, market or monopoly power would otherwise disappear of its own accord, or else be due to competition on the merits that favors the firm with the superior production technology. Second, exclusionary conduct can only be harmful to competition if undertaken by a defendant that has market power, because otherwise, if consumers were disadvantaged by it, they would leave and thus blunt its welfare impact.

That market power, or monopoly power, must be established in a conceptually separate inquiry does not suffice to explain why the means of doing so is so narrow. Showing directly that price is in excess of marginal cost, that it remains so for a lengthy period of time, that competition has been excluded, or that a defendant retains unilateral control over market prices by changing its own output are usually in

- 
6. For example, in the D.C. Circuit's decision in the Microsoft monopolization case, "A firm is a monopolist if it can profitably raise prices substantially above the competitive level." *USA v. Microsoft Corp.*, 253 F.3d 34 (2001).
  7. "Monopoly power is the power to control prices or exclude competition," *United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377 (1956).
  8. "Market power is the ability to raise price profitably *by restricting output*." *Ohio vs. American Express*, *supra* note 4. Emphasis in original.
  9. A finite residual demand elasticity would imply the power to increase price above marginal cost by restricting firm-level output without necessarily entailing that that has occurred.
  10. "The offense of monopoly under S.2 of the Sherman Act has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident." *United States v. Grinnell Corp.*, 384 U.S. 563 (1966), <https://supreme.justia.com/cases/federal/us/384/563/> (last visited Nov. 17, 2021).

and of themselves insufficient. Instead, the predominant means of establishing market or monopoly power is a high market share in an antitrust market.

The reason why is that defenses couched in economic theory have been offered to counteract or reinterpret direct evidence of market power as either something else, or as benign. The theory of monopolistic competition predicts price above marginal cost in equilibrium, in which each firm has the power to affect its own price by varying its output (equivalently, faces a downward-sloping residual demand curve) without significantly affecting the prices charged by other firms or the market price index. Even under oligopolistic conditions (i.e., more market power than exists under monopolistic competition), if few or even a single incumbent operates production technologies characterized by returns to scale, it might control a large share of the market, and charge a high markup over marginal cost, while still doing nothing of its own accord to exclude competition. Rather, the production technology characterizing the industry means that recoupment is a necessary condition for overcoming entry barriers, and economic profits net of start-up costs may be zero in expectation. Finally, and perhaps most influentially, if firms operate heterogeneous production technologies, with some more efficient producers than others, the more efficient producer may be able to earn economic profits “on the merits” indefinitely by charging prices above its own marginal cost which its competitors cannot compete down. Each of these provides a rationalization for direct evidence of market power of the kind described above that fits it within the bounds of legality.

If direct evidence of market power is not dispositive for those reasons, then the fallback is the indirect evidence of predominant market shares. That pushes the economic question at issue into the domain of market definition that is logically prior to the computation of market shares, which is where the locus of conflict in Rule of Reason cases generally lies, at least when it comes to the economic evidence.

The idea that market or monopoly power can only be proven through a predominant share of an antitrust market sits poorly with economists, because market share is not a sufficient statistic for market power in most models of competition.<sup>11</sup> Only in homogeneous goods markets with either Cournot competition or a dominant incumbent/competitive fringe can a direct formula relating market share to market power be derived.<sup>12</sup> And even if we knew that those conditions were in fact met, that would not solve the enforcement problem in establishing market power because it presupposes market definition, the exact factual matter at issue under a paradigm in which market power can only be established by a predominant share of an antitrust market.

The problem with the jurisprudential status quo does not end there. In merger review, market definition is typically undertaken using critical loss analysis. The endeavor seeks to create an implementable methodology for defining an antitrust market as a first step in analyzing whether a proposed horizontal merger would impair competition in that market: would a hypothetical monopolist in said market be able to profitably increase price? The answer to that depends on the tradeoff between the lost sales and the increased margin on remaining sales. The critical loss is the amount of lost sales that would render such a price increase unprofitable. If the actual loss exceeds that threshold, then the candidate antitrust market is too small and should be expanded to include whatever alternatives consumers would substitute toward.

The actual loss is a statement about the demand elasticity facing a hypothetical monopolist of a candidate market, which is necessarily smaller in magnitude than the residual demand elasticity facing an individual competitor in that market. When an incumbent has a high profit margin, the critical loss

---

11. By contrast, residual demand elasticity is a sufficient statistic for market power in a much wider set of theoretical circumstances.

12. Louis Kaplow, *Market Definition, Market Power*, 43 INT. J. IND. ORGAN. 148–61 (2015).

threshold is low because the loss of a small amount of sales comes at a substantial cost in profit, and so the increased margin on remaining sales thanks to a price increase is unlikely to outweigh it. The argument then generally goes that a price increase would result in an actual loss that exceeds that low threshold, and so the market must be enlarged.

That claim has a severe logical deficiency: where incumbents' margins are high, the residual demand elasticity facing them is likely low, and so the actual loss from a price increase is also low, especially as the demand elasticity facing the hypothetical monopolist is necessarily weakly lower than the demand elasticity facing the actual incumbent.<sup>13</sup> But stepping back: the whole endeavor of market definition is supposed to permit a scientific assessment of incumbents' market power in the relevant antitrust market. But in order to implement critical loss analysis, we have to take two perfectly good direct measures of market power as inputs: the incumbent's profit margins and its residual demand elasticity. And the higher the defendant's profit margin, the harder it is to show market power, because it means the size of the relevant market is large and therefore the incumbent's market share is low. This is perverse—high profit margins should correspond to an inference of market power, not the opposite. And between these logical issues with market definition and the metaphysical default described in the introduction, the endeavor of market definition as a component of establishing market power rests on very thin foundations.

### III. Expanding the Definition of Market Power

The definitions of market power that focus on pricing above marginal cost and exclusion of competition are based on a marginalist notion of competition in a market: a unique price and quantity are implied by the intersection of market supply and demand curves. Under the assumption of perfect competition, that price and quantity will correspond to the point on the market supply curve in which the marginal cost of supplying an additional unit is just equal to its market price. A price-quantity combination other than that competitive equilibrium entails the restriction of quantity supplied so as to earn an economic profit.

The idea that an uncompetitive price necessarily corresponds to a restriction of output leaves out the scenario in which the price at which a transaction takes place is indeterminate, subject to bargaining between counterparties. In such a scenario, market power can be exercised to alter the terms of a transaction in favor of one party or another, but there is no competitive pricing benchmark against which any given price can be compared, and, subject to participation constraints, the transaction will occur regardless of how the surplus of the transaction is allocated. I contend that this bargaining scenario is the more relevant framework in multi-sided platform antitrust cases, and especially in the Facebook case. The FTC alleges that Facebook monopolized its users' attention, but consumers are not the main victims of that monopoly. Instead, Facebook's attention monopoly is used to extract surplus from a different set of counterparties.

What is at issue in the bargaining scenario is which counterparty enjoys what share of the surplus generated by transactions on the platform. In a bargaining context where the distribution of surplus is indeterminate, one counterparty can exercise, or attempt to exercise, its market power vis-à-vis another to redistribute the surplus in its favor, including by taking action to worsen the other party's outside options, thus loosening his participation constraint. In that case, the insistence on quantity or output effects as competitive harms or that the distribution of surplus is irrelevant so long as the transaction takes place is imposing an inapposite understanding of market power. Phrased differently, agnosticism

---

13. Farrell and Shapiro point this out in several publications, including JOSEPH FARRELL & CARL SHAPIRO, *IMPROVING CRITICAL LOSS ANALYSIS* (2007), <https://escholarship.org/uc/item/0ff249px>. If the actual loss for the hypothetical monopolist is the same as for the actual incumbent, then the incumbent is a monopolist in the relevant antitrust market.

as to the distribution of surplus so long as a transaction occurs is to adopt a de facto total welfare standard rather than a consumer (or counter-party<sup>14</sup>) welfare standard into antitrust.

Consider the output defense that won *Ohio v. American Express* for the defendants, and which the court relied on in *Epic Games v. Apple*. There, the fact that the number of transactions increased while the putatively anti-competitive conduct was underway ostensibly serves as proof that said conduct was not anti-competitive. But on its face, the idea that more transactions are occurring is perfectly consistent with the shifting of bargaining power that results in a greater share of the surplus generated by those transactions accruing to the party undertaking the anti-competitive conduct. In models with bargaining power, one party gaining a relative advantage over the other can cause an increase in output. For example, in search-and-matching labor market models in which the wage is set by Nash bargaining (in lay terms, that the surplus split is determined by the balance of power between employer and worker), shifting that balance of power in favor of employers would cause them to hire more workers, since each one they hire is worth more to themselves (so long as hiring more workers does not itself shift the balance of power in the labor market back to favor workers). Applying this idea to the multi-sided platform context, a platform that possesses market power in the sense that it enjoys a large share of the surplus generated by any one transaction will seek to generate as many transactions as possible to maximize its profits, so long as that expansion does not shift the balance of power away from itself. If that is the case, then an increased number of transactions is exactly what would happen as a result of the platform having market power.

Credit cards are an example of this. Each company subsidizes the consumer side of the platform to induce greater take-up and loyalty and is in a position to force the costs of doing so on merchants who need to reach those customers. In return, credit card customers are incentivized to use the card for as many purchases as possible at the expense of other payment options, to maximize their rewards. The increased number of transactions, and the ostensible consumer benefits that drive the increase, do not *offset* the competitive effect of upstream restraints; they are an intrinsic part of that strategy, undertaken to defeat price competition between platforms over merchant acceptance that would otherwise reduce the profitability of their intermediary status. That basic dynamic in the credit card market is why the analysis of competitive effects in the two-sided platform context represented by *Ohio v. American Express* (balancing harm to merchants against benefits to cardholders, and concluding that increased transactions on the part of cardholders signify competitive benefits) is so perverse. The two-sided-ness of the platform is inherent in the way it competes in each market, but benefits to counterparties on one side do not offset harm to counterparties on the other. The one enables the other.

An elaboration on this is the freemium model employed by some platforms, for example in video and music streaming, or with particularly generous credit card promotions such as those offered by American Express in exchange for an annual fee. Paying a flat fee to the platform likely increases users' demand for discrete services on that platform for those that pay the fee, at the expense of demand for alternative distribution channels. In other words, the freemium model facilitates lock-in of the freemium customers, reducing their demand elasticity vis-à-vis the terms of any one transaction. And because of that consumer lock-in, especially when freemium status distinguishes richer and therefore higher-budget consumers, dealing on the platform's terms is a price worth paying on the part of merchants, or other upstream suppliers, in order to reach those customers. Augmentation of the services wrapped into the premium membership then serves to enforce the loyalty of customers to the specific platform where they purchase the membership, which then makes those customers harder to reach by any other means than those enforced by the platform.

---

14. C. Scott Hemphill & Nancy L. Rose, *Mergers That Harm Sellers*, 127 *YALE LAW J.* 2078–109 (2018) argue that antitrust in fact operates under a counter-party welfare standard as opposed to a consumer welfare standard. If that were true, then it would imply a much more expansive notion of welfare, and of market power, than either a true consumer welfare standard or what Newman terms the “output-welfare fallacy.”

## IV. Multi-Sided Platform Competition

The platform business model is to act as an intermediary between consumers and suppliers of some service or intangible content. Two-sided platforms earn their profits from the difference between what downstream consumers pay for access to suppliers and what the platform pays to upstream suppliers. For multi-sided platforms, consumers generally pay a price of zero, and what they gain access to is content, whether user-generated or professionally produced. Consumers pay for that access with their attention and their data, which are both then sold to advertisers. The “third” side is the professional content producers who then in some cases have to themselves pay for the privilege of reaching their ultimate customer base, but in any case are not paid directly by them and lose the advertising revenue they once enjoyed from consumers’ attention to the platforms who now control it. The point is that in either the two-sided or multi-sided context, the platform profit is earned as a take rate on transactions between the parties.

Platform competition minimizes that take rate by having platforms compete for the attention and loyalty of counterparties on each side by offering low prices, honest service, and value to all counterparties. High take rates signify the absence of platform competition, because counterparties do not need to be rewarded by the platform for their loyalty. Instead, that loyalty is obtained through the exercise of power, including by weaponizing the loyalty of one set of subsidized counterparties to extract bargaining surplus from the other.

This narrative suggests the central importance of multi-homing by counterparties as constitutive of the competitive process for multi-sided platforms. If one set of counterparties can effectively multi-home, they can employ steering techniques to direct another set of counterparties to the platform dealing on the most favorable terms, undercutting an incumbent’s take rate.<sup>15</sup> Alternatively, without multi-homing, each platform becomes a walled garden, with upstream counterparties dependent on a single platform for access to downstream ones, and vice versa. Even if there are nominally the same number of platforms performing a similar function, that is, social networking or ridesharing, whether advertisers, publishers, and drivers are locked into one or can multi-home between them (and, crucially, steer counter-parties on the other side of the platform to do so) matters a lot for assessing competition. Walled gardens will have higher take rates and much greater platform power, and that power will be self-reinforcing because it means that platforms have the ability to punish steering without fear of losing customers. This is why the metaphysical approach to market definition is prone to significant error, since it would see little difference between the two alternatives.<sup>16</sup>

The way to distinguish between the walled-garden world of little platform competition and the multi-homing world of healthy platform competition, aside from take rates themselves, comes down to the residual (i.e., platform-specific) supply or demand elasticities of the counterparties on each side. If an online marketplace increases the fees it charges to third-party merchants, will they be able to sell elsewhere, or are they so dependent on the platform charging those increased fees that the merchants must absorb them? And, as a component of answering that question, in response to such a fee increase, do merchants have the means to direct consumers to another platform that charges lower fees? If the platform can retaliate against that type of steering such that merchants are loathe to engage in it, that indicates the platform has market power.

Likewise, if consumers are charged a higher price for their purchases on a platform, do they have a means of substituting away? Given how the multi-sided platform business model has evolved in favor

---

15. Hence, why a company like Uber would have employed predation to push its rival Sidecar out of the market, since Sidecar offered better terms to rideshare drivers as a means of seducing them away from the dominant incumbent. *SC Innovations, Inc. v. Uber Technologies, Inc. et al.*, 2020 WL 2097611 (2020).

16. This is an example of the importance of preserving the “competitive process,” Marshall Steinbaum & Maurice E. Stucke, *The Effective Competition Standard: A New Standard for Antitrust*, 87 *UNIV. CHIC. LAW REV.* 595 (2020).

of subsidizing low or zero prices on the consumer side of the market, the empirically relevant scenario is probably in the form of non-price service terms: if the platforms extract more data or surveil consumers more closely, do they have a means of evading that behavior by voting with their feet when they become aware of that? A special case of that concerns the worsening of content moderation for the platforms that perform that function: if the platform is choosing what content to present to users who come to the table with the expectation of content neutrality, if the content that is actually served to them is skewed toward that which favors either the platform itself or other counterparties (e.g., advertisers, or publishers promoting their own content over that which would appear organically), do the consumers have the option to switch to a more content-neutral alternative? Given the absence of a price mechanism, the latter is potentially hard to measure, but that is the nature of what an analysis of platform competition on the consumer side, in the case of zero-price platforms like Facebook, would entail.

This focus on residual supply or demand elasticity also implies that relevant antitrust markets are small when residual elasticities are low, and hence the more walled-garden-like a given platform is, the smaller the relevant antitrust market and the larger its market share in that market. Low residual demand elasticity for any given incumbent implies that there is little “discipline” coming from other potential participants, even if it appears that multiple firms offer the same or similar services. Hence, the platform facing a low demand elasticity is in fact a monopolist or near-monopolist in the relevant market. In a competitive market, the residual demand elasticity is infinity. Measured deviations from that suggest that the relevant market is, in fact, smaller the greater those deviations.

The larger point is that market definition is logically posterior to analyzing market power,<sup>17</sup> and thus that the Supreme Court’s statement in *Ohio v. American Express* that “market power . . . cannot be evaluated unless the Court first defines the relevant market” is based on unsound economic reasoning.<sup>18</sup> Instead, low residual supply or demand elasticity suggests that the relevant antitrust market is small, regardless of a subjective assessment of products as similar or dissimilar to one another, or the other considerations that tend to comprise what I have called the metaphysical approach to market definition. The next sections lay out how to establish market power on a sounder basis.

## V. Direct Evidence of Market Power

Having explained what platform competition (and its absence) consist of, we now come to the heart of the matter of establishing platform market power: the observable facts and behavior that indicate how much market power platforms have. A crucial point to make up front is that given our notion of platform competition, it only makes sense to define market power with respect to a given set of counterparties, that is, on each “side” of the platform. That is not to say the other sides do not matter. It is exactly because counterparties on one side, for example, consumers, may be loyal to a given platform that counterparties on the other, for example, rideshare drivers, merchants, content creators, publishers, or advertisers, might be at a disadvantage. The less able they are to steer consumers elsewhere, the more they are at the platform’s mercy and must absorb any change in the terms of dealing. Thus, one component of establishing platform market power vis-à-vis one set of counterparties may consist of showing that it controls access to another. On the other hand, just because one set of counterparties may not be at a great disadvantage vis-à-vis the platform does not entail the same for another set of counterparties. Thus, as

---

17. This point is made forcefully by Louis Kaplow, *Why (Ever) Define Markets?* 124 HARV. LAW REV. 437 (2010).

18. Indeed, Justice Breyer’s dissent points this out: “The District Court also found that even though American Express raised its merchant prices 20 times in this 5-year period, it did not lose business of any large merchant. Nor did American Express increase benefits (or cut credit card prices) to American Express cardholders in tandem with the merchant price increases. Even had there been no direct evidence of injury to competition, American Express’s ability to raise merchant prices without losing any meaningful market share, in the District Court’s view, showed that American Express possessed power in the relevant market.” *Ohio vs. American Express*, *supra* note 4.

has been stated previously, subsidizing the consumer side of the platform does not and cannot offset harm to upstream counterparties or to competition on the upstream side of the platform. The more loyal consumers are to the platform, the greater its market power vis-à-vis those upstream counterparties.

If the measure of platform market power is residual supply or demand (in-)elasticity, then what courts should be looking for when assessing whether a platform has market or monopoly power is evidence that residual demand or supply elasticities are low. Such evidence can be very direct: in response to an observed price increase or worsening of the terms of service vis-à-vis any given set of counterparties, how many withdrew in favor of another platform or otherwise evaded the effective price increase? Moreover, cases of price increases or worsening of the terms of service without compensation to the affected counterparties and for which there was no recourse thus qualify as evidence that the platform possesses market power, because they entail that the bargaining surplus can be re-apportioned in favor of the platform without the counterparty departing.

At this point, it is worth mentioning the “cellophane fallacy,” which points out that a monopolist maximizing profits can be expected to face elastic residual demand at the monopolist’s price. If that were not the case, then the monopolist’s price would be higher. That means that while a finding of low residual demand elasticity is proof of market power, a finding of high residual demand elasticity is not necessarily proof of its absence. This is the exact scenario wherein having access to multiple types of direct evidence is most useful.

Residual supply and demand elasticity are also useful because measured elasticity has both cardinal and ordinal significance. The lower the residual elasticity, the greater the incumbent’s market power. That means that market power can be benchmarked in those terms. For example, it is coherent to imagine different thresholds of residual elasticities corresponding to legal standards for market power versus monopoly power,<sup>19</sup> the same as is currently the case with market share. In fact, residual elasticities are logically prior to and more general than market shares, because they indicate the correct market definition. The lower the residual elasticity, the smaller the relevant market, and thus the higher an incumbent’s market share in that market. One could therefore imagine a resurrection of market share as an index of market power, because high market share in turn implies low residual elasticity, while recognizing that given a market definition, the allocation of market shares within that market can be the result of causes other than each incumbent’s unilateral market power.

To summarize this, we have two direct measures of platform market power with respect to a given set of counterparties, in addition to a high take rate: low observed residual supply or demand elasticity (depending on the side in question), and the imposition of non-price contractual terms that re-apportion surplus in favor of the platform, without compensation. We next deal with price discrimination as an alternative measure.

## VI. Price Discrimination as a Measure of Platform Market Power

Price discrimination is considered separately here because its status in antitrust is particularly contentious for a variety of reasons. There is no doubt that for a party with market power, using discriminatory pricing can improve counterparty welfare relative to uniform pricing.<sup>20</sup> It theoretically eliminates the deadweight loss associated with monopoly pricing, and the welfare effect is then evaluated based on trading that gain off against the loss in welfare to the parties charged a higher discriminatory price than they are charged under uniform prices.<sup>21</sup> That point is not in question, but it is also not relevant. What

---

19. What those thresholds should in fact be is left to future work, which would involve meta-studies of what types of behavior are enabled by different degrees of market power, and what the welfare implications of that conduct is.

20. Dirk Bergemann, et al., *The Limits of Price Discrimination*, 105 AM. ECON. REV. 921–57 (2015).

21. By contrast, under the output-welfare fallacy, the reduction in consumer surplus for consumers charged a high price doesn’t matter, and so price discrimination always (weakly) increases welfare. Newman, *supra* note 3.

is at issue is not the welfare implications of price discrimination, but rather its significance as a measure of market power.

The reason to think discriminatory pricing is a dispositive indicator of market power is simple: under price discrimination, there exist consumers who could be enticed away from buying from the discriminating seller by a “cream-skimming” strategy. That they are not means that for some reason, entry into the market is impeded, or the incumbent selling to those buyers at a high price enjoys some sort of power to prevent them from being skimmed away by a competitor. The most obvious candidate for who should skim the cream is the low-price consumer—he or she could buy from the seller at a low price and re-sell to the high-price consumer at a profit, while still under-bidding the original seller. This is why price discrimination is easier to sustain in markets for services and where consumers can be uniquely identified in some way, for example, through electronic surveillance or by means of “permission” to buy or sell, such as with prescription pharmaceuticals. In that case, the seller can ensure that the high-price consumer cannot gain access to the good from the low-price consumer. This is why models of price discrimination rule out this kind of arbitrage by assumption. That assumption amounts to granting the incumbents market power a priori.<sup>22</sup>

The same basic logic applies to a would-be entrant other than the low-price consumer: something has to be preventing cream-skimming from taking place, and whatever that something is, it gives the price-discriminating incumbent market power. It is the same idea as low residual demand elasticity, except on the part of a subset of consumers (or counterparties more generally). In fact, price discrimination is most frequent where sellers have the opportunity to directly observe and measure the individual- (or group-)level demand inelasticity of their customers. That is the case with rideshare, for example, where the use of surge pricing for many years as the platforms gained market penetration enabled such an estimation, as does ongoing surveillance by those and other platforms as they have moved toward a model of explicitly personalized pricing.

Defenses of price-discrimination as pro-competitive tend to focus on the case of oligopoly with differentiated goods in which a small number of incumbents have the power to set prices for individual consumers (rather than take them as given, as in perfect competition), and where each incumbent sells something that is slightly different from the others. Thus, they face a finite residual demand elasticity for all of their customers, but the elasticity is different for different consumers or groups of consumers for two reasons: different willingness or ability to pay for the good irrespective of which firm is patronized, and brand loyalty to individual sellers. Under these conditions, price discrimination is taken as indicating greater competition than uniform pricing by each oligopolist, because it offers a means by which one oligopolist can compete with the other over every individual consumer or group of consumers. Under uniform pricing, oligopolists generally compete only over the marginal consumer, with most consumers the captive of one or the other.

For example, in the Hotelling model with uniform pricing and competitors located at each end of a line segment, sellers compete only in the middle of the segment, for the consumer indifferent between patronizing the firm at either end. The customers near the endpoints are captured by the proximate seller. Whereas under price discrimination, each firm can make an offer that would potentially entice any given consumer to switch, regardless of where they are located (i.e., a firm at one end could offer a low price to consumers at the other, which the proximate firm would be pressured to match).<sup>23</sup>

---

22. Based on this logic, some courts and analysts have posited that price discrimination might imply a market definition that distinguishes between different segments of customers charged a high or low price. There’s logic to that idea, but the analysis in this section proceeds as though price discrimination takes place between different consumers (or suppliers) in the same market.

23. Jacques-Francois Thisse & Xavier Vives, *On The Strategic Choice of Spatial Price Policy*, 78 AM. ECON. REV. 122–37 (1988).

We should be clear about what the significance of this intuition actually is: given oligopoly with differentiated goods, discriminatory pricing is on the whole better for consumers than uniform pricing would be. But that does not disprove the basic oligopoly assumption, which entails market power on the part of incumbents no matter what pricing policy they choose (and differentiated goods rules out the homogeneous Bertrand case in which an oligopoly market achieves the same outcomes as a competitive one). Thus, even in such a differentiated-goods oligopoly case, in which price discrimination increases competition, the viability and existence of price discrimination would only be possible if the incumbents enjoy market power. This differentiated-goods oligopoly example does mean that price discrimination is not sufficient, by itself, to prove monopoly power (as opposed to market power), and it also means that, conditional on price discrimination happening, “more” price discrimination does not necessarily signify greater market power than less. Thus, price discrimination cannot be benchmarked to create thresholds for market power, the way residual supply or demand elasticity (and market shares in a relevant antitrust market) conceivably can.

To return to the concrete, rideshare platforms are able to price-discriminate among their riders on the basis of conditions such as physical disabilities, the amount of battery left in the user’s mobile phone, or whether the user also has a rival platform’s app installed, all of which speak to residual demand elasticity.<sup>24</sup> Moreover, the relevant counterfactual is not necessarily uniform pricing as decided by rideshare platform oligopolists, but uniform pricing as set by an administrative body like a taxi commission, under which riders with low demand elasticity can expect higher consumer surplus, conditional on being able to find a ride. The ability to extract surplus from riders with low demand elasticity still speaks to the platform’s power to set prices with limited fear of competition, regardless of its welfare properties.

Once we understand price discrimination like this, the case that it can be undertaken without market power on the part of the seller falls apart. Consider the reasoning in Baumol and Swanson (2003),<sup>25</sup> which the Supreme Court relied on in the decision *Illinois Tool Works v. Independent Ink*.<sup>26</sup> Those authors posit that a monopolist supplier of inputs to restaurants would have to price discriminate in order to service the market for both high-end and low-end restaurants, else be unable to recoup fixed costs. First of all, the idea that entry into the market is subject to fixed startup costs gives the incumbent market power. Second, the setup presupposes that low-end restaurants cannot supply the high-end restaurants and thus skim the supplier’s cream. The setup also rules out the differentiated-goods oligopoly setting described above. The Baumol and Swanson model is strictly a differentiated-goods monopolist. Their assumption that the markets are segmented is analogous to presuming monopoly power for the supplier vis-à-vis both sets of customers, that is, exactly the condition the authors purport to show is unnecessary. Yet they sneak it in through the back door, so to speak. Their example may provide some insight into why we would expect to see price discrimination in the real world, and indeed we do see it, ubiquitously, as those authors state. But to say that because it is ubiquitous it must therefore not signify market power is to default to the mistaken ideology referred to above, that market power is rare because in most circumstances it invites entry that erodes it.

As the rideshare example indicates, platforms that charge prices to consumers at all tend to price discriminate on the consumer side, and they frequently price discriminate on the upstream side(s) as well.

---

24. In November 2021 the Justice Department Civil Rights Division sued Uber, claiming that its penalties for excessive loading time amount to a violation of the Americans with Disabilities Act. Those penalties could also be interpreted as price discrimination among Uber’s passengers, targeting the disabled because they are more dependent on rideshare services than individuals with greater ease of access to public transportation.

25. William J. Baumöl & Daniel G. Swanson, *The New Economy and Ubiquitous Competitive Price Discrimination: Identifying Defensible Criteria of Market Power*, 70 ANTITRUST LAW J. 661–85 (2003).

26. *Illinois Tool Works Inc. v. Independent Ink, Inc.*, 547 U.S. 28 (2006), <https://supreme.justia.com/cases/federal/us/547/28/> (last visited Jan. 11, 2020).

Examples of upstream price discrimination include preferential rates on app store fees for particularly powerful “must-have” app developers, and to stretch the platform context slightly, “zero-rating” for bandwidth for some (usually affiliated) content on the part of telecoms providers. In each case, the motivation is that some providers have unusually many alternative distribution channels because they can expect consumers to follow them wherever they may go. In other words, their residual supply elasticity is high, and thus they have the bargaining power vis-à-vis any one platform to negotiate a discount.

A more unusual setting for discrimination in the platform context, but one that is especially relevant to the Facebook antitrust litigation, concerns content moderation. The user experience centrally concerns what third-party content he or she is presented with, where, and when, as well as what content users are permitted to disseminate themselves. Social networking depends on controlling access to user’s attention and data and selling that to advertisers. Content moderation discrimination is on the basis of how likely a given user is to react to being presented with content that is not in her or her interest, but rather that of the platform or of advertisers. Facebook’s recently revealed program exempting users it considers VIPs from restrictions on the content they post is an especially pronounced instance of this, which we should interpret as evidence the platform sees some users as necessary to keep on the platform, lest others be driven away by their absence.<sup>27</sup> VIPs granted such an exemption from content moderation rules presumably have a greater supply elasticity than other users, and, as a result, greater bargaining power vis-à-vis the platform.

The concern over inflammatory content on social networking can also be understood as price discrimination without prices. What viewers see is what the platform knows will keep them on the platform, to see more content that it presents. The fact that users can be swayed by the content they see and become addicted to being inflamed gives a social network a powerful weapon to preserve user engagement and “brand loyalty,” the better to profit thereby (or enable advertisers to do so).<sup>28</sup>

So, in summary, price discrimination among counterparties on a given side of a platform should also serve as direct evidence of market power, along with high take rates, low residual supply or demand elasticity, and the imposition of disadvantageous contractual terms without compensation.

## VII. Why Should Establishing Market Power Be a Separate Endeavor?

The direct evidence of market power proposed in the previous two sections raises a natural question: if this conduct suffices to establish that the platform that does it possesses market power, why preserve the schematization whereby establishing market power and anti-competitive conduct that establishes or extends that power are two separate steps in a Rule of Reason analysis? Kirkwood (2018) makes a compelling case that that division is unnecessary, since plenty of the conduct that is normally at issue when it comes to antitrust cases against dominant incumbents could not have taken place but for the market power of that incumbent.<sup>29</sup> Kirkwood also argues persuasively that the relevant counterfactuals to assessing whether conduct is in fact anti-competitive necessarily also either prove or disprove that the incumbent that undertakes them has market power, that is, can charge a price in excess of marginal cost.

---

27. Jeff Horwitz, *Facebook Says Its Rules Apply to All. Company Documents Reveal a Secret Elite That’s Exempt.*, WALL ST. J., September 13, 2021, <https://www.wsj.com/articles/facebook-files-xcheck-zuckerberg-elite-rules-11631541353> (last visited Sep. 13, 2021).

28. GUY ARIDOR, DRIVERS OF DIGITAL ATTENTION: EVIDENCE FROM A SOCIAL MEDIA EXPERIMENT (2021) is a recent study of attention and addiction on social media platforms. It concludes that user “inertia” enables platforms to increase advertising loads.

29. John B. Kirkwood, *Market Power and Antitrust Enforcement*, 98 BOSTON UNIV. LAW REV. 1169–227 (2018). Steven Salop, *The First Principles Approach to Antitrust, Kodak, and Antitrust at the Millennium*, 68 ANTITRUST LAW J. 187 (2000) makes a similar point.

That idea has a good deal to recommend it and is especially useful in monopoly maintenance cases where some conduct by an incumbent is alleged to prevent competition from eroding a realized dominant position. There, the cellophane fallacy complicates the use of direct evidence of price inelasticity as a measure of market power, but the idea that “but for” the monopoly-maintaining conduct, the incumbent’s prices and/or market share would be lower can be established by a counterfactual analysis of competition without the challenged conduct.

Nonetheless, the separation makes sense for several reasons. Right off the bat, the conduct whose competitive significance is at issue in a case is usually distinct from the conduct that would prove (or disprove) that the defendant has market power. Challenged conduct likely specifically targets and impedes multi-homing. For example, an online marketplace that employs a Most-Favored Nation (MFN) or “price parity” restriction prevents a seller from charging different prices on different platforms, so as to prevent them from steering consumers toward an intermediary that deals with the seller on more favorable terms, that is, that charges a lower take rate. The steps a platform might take to enforce an MFN would also be anti-competitive, for example, demoting or suppressing a seller’s offering if they are detected selling at a lower price elsewhere. That is designed to penalize the steering that is constitutive of platform competition. Direct price-setting for putatively third-party transactions, as is typical with rideshare and other gig economy platforms, is an even more flagrant restraint on platform competition, by preventing workers from using lower prices to steer customers to platforms dealing with either set of parties on more favorable terms.

Other anti-steering provisions include minimum acceptance rates for rideshare drivers (penalizing them for multi-homing) as well as loyalty pricing (discounts in exchange for not patronizing a rival).<sup>30</sup> Platform appropriation of third-party functionality or entry into upstream lines of business, as well as excluding suppliers who are themselves considered potential competitive threats, all serve as sticks with which to deter multi-homing or conduct that would invite it and thus increase consumer residual demand elasticity. That type of retaliation could be understood as evidence of market power as opposed to instruments by which it is achieved, because it would not be undertaken unless the incumbent thought it could depend on the loyalty of other counterparties to mitigate any blowback. For example, why would Facebook exclude the Vine app from access to its users?<sup>31</sup> In order to prevent it from gaining market penetration and thereby steer consumers to use Vine and its affiliates rather than Facebook and its affiliates. And the reason it makes sense that Facebook would choose to exclude Vine is that it knows its own users have no recourse and will remain, even in the absence of access to Vine. So in that sense, exclusionary conduct *could* be interpreted as both evidence of market power and the instrument by which that market power is obtained and reinforced.

However, a prosaic reason not to abandon the two-step approach is that it would create too many defendants and fail to differentiate between them on the basis of competitive significance. If a company enters into an exclusive contract for office supplies, and receives a preferential rate in exchange for that exclusivity provision, that should probably not incur antitrust liability on its own account unless it can be shown that the exclusivity is detrimental to competition in the market generally. If it impedes entry by rival suppliers, or if such a contract has the effect of raising costs for the purchaser’s own rival(s) such that they cannot compete, then it has competitive significance. But most contracts that require or incentivize exclusivity probably do not. A step wherein market power has to be proved acts as a screen to avoid sweeping in such cases. A price parity

---

30. Steven C. Salop, *The Raising Rivals’ Cost Foreclosure Paradigm, Conditional Pricing Practices and the Flawed Incremental Price-Cost Test*, 81 ANTITRUST LAW J. 371–421 (2017).

31. Adi Robertson, *Mark Zuckerberg Personally Approved Cutting off Vine’s Friend-Finding Feature*, VERGE, December 5, 2018, <https://www.theverge.com/2018/12/5/18127202/mark-zuckerberg-facebook-vine-friends-api-block-parliament-documents> (last visited Jan. 20, 2020).

policy adopted by a platform has a similar effect: competitively harmless if there are other means by which a supplier could readily access consumers, since it could simply decline to do business with the platform imposing the offending policy if it did not wish to transact on those terms, for example, to discount, or alternatively, to mark up. By contrast, if the seller is induced to agree to that provision or else lose his or her livelihood altogether, the provision itself takes on a different, anti-competitive significance.

### **VIII. Conclusion: The FTC's Amended Facebook Complaint**

The jumping-off point for this analysis is the judge's ruling in June 2021 throwing out the FTC's first monopolization complaint against Facebook on the grounds that it did not plead sufficiently to establish monopoly power, a necessary component of eventually establishing liability for monopolization. It also threw out the exclusion of Vine from access to Facebook's users as the basis of the conduct step, leaving only the two mergers with Instagram and WhatsApp as bases on which Facebook may have preserved or extended its monopoly. So what would the foregoing analysis have to say about the case, and in particular the revised complaint the FTC filed in August 2021?

First, the idea that purchasing Instagram and WhatsApp could have preserved monopoly power is straightforward: the ability of counterparties to multi-home, or to react to Facebook's worsening of its service terms (e.g., degrading privacy) were definitely materially affected by bringing those would-be rivals in house. Indeed, many users appear to have reacted to revelations about Facebook's abuse of users' trust by moving to one of the would-be rivals that Facebook already owned. Moreover, Facebook took steps to make WhatsApp less secure following the purchase, to ensure that any users that avoided Facebook Blue could not evade the company's surveillance.

More relevant to this analysis, the FTC now alleges that Facebook has monopoly power by use of both indirect (large share of internet users' time and attention) and direct evidence. The latter includes the fact that users did not leave in response to the Cambridge Analytica revelations, which is an example of the direct evidence type previously named: service terms were worsened without compensation. The FTC also points to sustained high profitability, which indicates a high platform take rate. Finally, the FTC points to the power that a durable high consumer penetration gives it vis-à-vis other counterparties, in effect that residual supply elasticity of upstream counterparties is low because Facebook controls access to many users and customers. On this count, the complaint would be strengthened by some sort of quantification of the supply elasticity they in fact face, for example, the responses to increases in advertising rates or to changes in the way the Facebook news feed ranks content for its users. The fact that Facebook was able to get away for so long misleading publishers about the success of their content, and once it was revealed, they did not leave is also further evidence that the supply elasticity is low.<sup>32</sup> Finally, the aforementioned discrimination in content moderation policies between regular and VIP users is similarly evidence that the company has market power, though that on its own does not establish monopoly power. In combination with the other evidence discussed here and in the complaint, it certainly strengthens the claim.

In short, the amended complaint does incorporate some elements of the analysis in this paper. And given the difficulty that courts have had in analyzing economic testimony about market definition and market power in that and other tech platform cases, the idea of moving to more direct indicators has some appeal if antitrust enforcement is to have any hope of achieving success against powerful multi-sided platforms.

---

32. Chris Welch, *Facebook May Have Knowingly Inflated Its Video Metrics for Over a Year*, VERGE, October 17, 2018, <https://www.theverge.com/2018/10/17/17989712/facebook-inaccurate-video-metrics-inflation-lawsuit> (last visited Nov. 7, 2021).

**Acknowledgments**

This paper is a submission to an *Antitrust Bulletin* symposium on the Google and Facebook antitrust cases. Thanks to Steve Salop, John Newman, Bill Curran, Nikolas Guggenberger, and the participants in the Yale Information and Society Project for helpful comments.

**Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Funding**

The author(s) received no financial support for the research, authorship, and/or publication of this article.