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THE OUTPUT-WELFARE FALLACY: A MODERN ANTITRUST PARADOX

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ABSTRACT

A fallacy lies at the core of modern antitrust. The same scholars who successfully advanced a singular consumer-welfare goal simultaneously argued that output effects should be the exclusive criterion for analysis. This output–welfare framework entered mainstream discourse, was endorsed by enforcers and judges, and played a pivotal role in the Supreme Court's recent Ohio v. American Express *opinion. Yet despite its centrality, outputism has largely escaped notice.*

When exposed to systematic evaluation, the previously assumed link between output and welfare breaks down. A wide variety of conduct can push output and welfare in opposite directions. Moreover, purely outputist analysis is often unworkable in markets—for labor, social networking, online search, and more—that are of particular interest to contemporary antitrust.

Recognizing the Output–Welfare Fallacy offers substantial payoffs. It illuminates and undercuts a fundamental illogic that motivates outputist judicial decisions, which warrant swift reversal. Market power can be defined as the power to control competition, rather than power to profitably reduce output. Plaintiffs need not demonstrate an output reduction to carry their initial burden of proof. Conversely, defendants need not prove that output increased in order to make out a valid procompetitive justification. In general, moving beyond the narrow confines of output-based analysis enables the application of a more coherent, practical, and efficient antitrust framework.

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I. INTRODUCTION: A POLICY AT WAR WITH ITSELF

At the core of the U.S. antitrust tradition lies a fallacy: that "output" is interchangeable with "consumer welfare." Under this view, consumer welfare is the exclusive goal of antitrust—but output effects are to be the exclusive means of actual analysis.[1] Plaintiffs cannot carry their initial burden of proof unless they can demonstrate that the challenged conduct has reduced output.[2] Defendants must prove that their conduct actually increased output in order to make out a valid procompetitive justification.[3]

Leading treatises,[4] law-school casebooks,[5] *amicus* briefs,[6] and oft-cited journal articles[7] all conclude that antitrust can be boiled down to output effects.[8] Scattered judicial references to this output-centric conception can be located as early as the late 1970s. And, at long last, outputism reached its apex in the U.S. Supreme Court's 2018 *Ohio v. American Express Co.* ("*AmEx*") decision.[9] In *AmEx*, a 5–4 majority announced that the government needed to demonstrate an output reduction, despite abundant evidence that the challenged restraints had stifled innovation, increased the prices of nearly every good and service sold at retail in the United States, and more.[10]

But this narrow vision of antitrust rests on a flawed foundation. Output effects cannot serve as the sole criterion for evaluating welfare effects.[11] The resulting body of antitrust doctrine and discourse is internally inconsistent, sometimes to the point of incoherence. Outputism harms the

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[1] Historically, antitrust law was thought to promote multiple policy objectives. But beginning in the 1950s, Chicago School scholars successfully advanced the argument that promoting consumer welfare should become the exclusive goal of the antitrust laws. *See, e.g.*, Herbert Hovenkamp, *Whatever Did Happen to the Antitrust Movement?*, 94 NOTRE DAME L. REV. 583, 598–600 (2019); *see e.g.,* Joshua D. Wright & Douglas H. Ginsburg, *The Goals of Antitrust: Welfare Trumps Choice*, 81 FORDHAM L. REV. 2405, 2405–06 (2013); Eleanor M. Fox, *Modernization of Antitrust: A New Equilibrium*, 66 CORNELL L. REV. 1140, 1154, 1154 n.76 (1981).

[2] ROBERT H. BORK, THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF 122 (2d ed. 1993) ("The task of antitrust is to identify and prohibit those forms of behavior whose net effect is output restricting and hence detrimental.").

[3] *Id.* ("If a practice does not raise a question of output restriction . . . [, it] should be held lawful.").

[4] *See, e.g.*, PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION ¶ 114 (4th ed. 2013) ("[T]he overall goal is markets that maximize output.").

[5] E. THOMAS SULLIVAN, HERBERT HOVENKAMP, HOWARD A. SHELANSKI & CHRISTOPHER R. LESLIE., ANTITRUST LAW, POLICY AND PROCEDURE: CASES, MATERIALS, PROBLEMS 2 (7th ed. 2014) ("Absent a finding of output limitation, the conduct is deemed efficient and beyond the condemnation of the antitrust laws.").

[6] Brief for Amici Curiae Antitrust Law & Econ. Scholars in Support of Respondents at *3, Ohio v. Am. Express Co., 138 S. Ct. 2274 (2018) (No. 16-1454) ("The fundamental goal of antitrust law is to foster consumer welfare by enhancing or increasing output . . . .").

[7] Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 31 (1984) ("If arrangements are anticompetitive, the output and market share of those using them must fall.").

[8] *See infra* Section II.C (collecting sources).

[9] Ohio v. Am. Express Co., 138 S. Ct. 2274 (2018).

[10] United States v. Am. Express Co., 88 F. Supp. 3d 143, 207–23 (E.D.N.Y. 2015), *rev'd on other grounds*, 138 S. Ct. 2274.

[11] Throughout, this Article takes the "consumer welfare" goal as a given, without weighing in on whether it is descriptively accurate or normatively desirable—it is "[a]n internal critique . . . one made from within the premises of the system under examination." John Henry Schlegel, *Of Duncan, Peter, and Thomas Kuhn*, 22 CARDOZO L. REV. 1061, 1061 n.4 (2001).

very consumers that modern antitrust law purports to protect. In short, this "Output–Welfare Fallacy" has produced a new antitrust paradox—a policy at war with itself.[12]

The Output–Welfare Fallacy did not arise from a vacuum. Part II of this Article excavates its role as a key contributor to the Chicago Revolution in antitrust. Oceans of ink have been spilled describing antitrust law's embrace of the consumer-welfare standard.[13] Contemporary critics contend that antitrust became overly narrow under the influence of Chicago School academics and judges. Among the leading charges is that the consumer-welfare framework focuses exclusively, or at least primarily, on prices.[14] This critique has gained considerable traction, to the extent that it now manifests throughout popular discourse in statements like the following: "[f]or decades, antitrust enforcers have centered the consumer welfare standard, which defined price increases as the only valid focus of antitrust action."[15]

This predominant existing narrative overlooks the crucial interplay between output and welfare. In fact, hardline Chicagoans explicitly reject analysis of price effects as a "deleterious" return to the bad old days.[16] From the very beginning, advocacy of a unitary consumer-welfare goal has been accompanied by insistence that output—not price—should be the exclusive criterion for assessment.[17] As Robert Bork put it, "The task of antitrust is to identify and prohibit those forms of behavior whose net effect is output restricting and hence detrimental."[18] Conduct that increases output must be welfare-enhancing, and therefore procompetitive.[19] The embrace of consumer welfare cannot be understood apart from the ascendance of outputist analysis—the two were both contemporaneous and endogenous.

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[12] BORK, *supra* note 2. The irony, of course, is that Robert Bork's book purporting to eliminate an antitrust paradox became an ur-text responsible for creating one.

[13] Barak Orbach, *How Antitrust Lost Its Goal*, 81 FORDHAM L. REV. 2253, 2272–75 (2013).

[14] *See, e.g.*, TIM WU, THE CURSE OF BIGNESS: ANTITRUST IN THE NEW GILDED AGE 88 (2018) ("Bork . . . meant that in any antitrust case, the government or plaintiff had to prove to a certainty that the complained-of behavior actually raised *prices* for consumers."); Lina M. Khan, Note, *Amazon's Antitrust Paradox*, 126 YALE L.J. 710, 710 (2017) ("[T]he current framework in antitrust—specifically its pegging competition to 'consumer welfare,' defined as short-term price effects—is unequipped to capture the architecture of market power in the modern economy."). Khan, Wu, and other critics are correct to point out that much of contemporary antitrust practice has become heavily price-focused. The present contribution, however, clarifies that the Chicagoan paradigm has always centered output, not prices, above all else; and, second, that in a difficult (which is to say, important) case today, orthodox analysis is far more likely to focus exclusively on output than it is to focus exclusively on price effects.

[15] Joshua Brustein, *Democrats Are the Hipsters of Antitrust*, BLOOMBERG (Aug. 19, 2020, 9:28 AM), https://www.bloomberg.com/news/newsletters/2020-08-19/the-hipsters-of-antitrust [https://perma.cc/6SGU-2BBP]; *see also, e.g.*, Luke Mullins, *Big Tech Is About To Spend a Ton of Money to Fight These People*, WASHINGTONIAN (Sept. 15, 2019), https://www.washingtonian.com/2019/09/15/big-tech-spend-money-to-fight-barry-lynn-open-markets [https://perma.cc/E3UB-VKGY] (discussing the current popular antitrust movement).

[16] Charles "Rick" Rule, *Antitrust Paradox Conference: Corporations, Securities, & Antitrust Practice Group, Panel I: Generational Impact of The Antitrust*, THE FEDERALIST SOCIETY, at 11:26 (June 22, 2018), https://fedsoc.org/conferences/antitrust-paradox-conference#agenda-item-panel-i-generational-impact-of-the-antitrust [https://perma.cc/5GK8-M9WC].

[17] *See, e.g.*, Robert H. Bork, *The Rule of Reason and the Per Se Concept: Price Fixing and Market Division*, 75 YALE L.J. 373, 375 (1966) ("Acceptance of consumer want satisfaction as the law's ultimate value requires the courts to employ as their primary criterion the impact of any agreement upon output . . . .").

[18] BORK, *supra* note 2, at 122.

[19] *Id.*

As Part II goes on to explain, the output-only prong of this new framework was quickly embraced by Reagan-era federal agency enforcers,[20] endorsed by Chicagoan appointees to the federal judiciary,[21] and today has become ubiquitous.[22] Output, not price, is the "Holy Grail" of the contemporary antitrust orthodoxy.[23]

Such heavy reliance on output is misplaced. Drawing insights from microeconomic theory and empirical research, Part III of this Article catalogues a wide variety of scenarios in which output and welfare move in conflicting directions.[24] *First*, various types of marketplace activity can increase output while decreasing welfare.[25] The inverse is also true: various types of conduct can decrease output while increasing welfare. *Second*, conduct can simultaneously exert conflicting upward and downward pressure on output and also conflicting upward and downward pressure on welfare.[26] *Third*, conduct can reduce welfare without affecting output in either direction.[27]

These are not limited or narrow exceptions to the norm. They involve types of conduct that lie at the very core of antitrust doctrine and practice,[28] conditions that are common in the real world and figure prominently in antitrust law and economics,[29] and markets—for online search, social media, labor, payment networks, college education, and more—that are at the center of ongoing antitrust policy debates and the forefront of enforcement efforts.[30] The Output–Welfare Fallacy would require plaintiffs in each of these cases to prove an output reduction. But, as Part III explains, conduct can cause harm without reducing output—in fact, it can be extremely harmful while increasing output.[31] Moreover, the Output–Welfare Fallacy would foreclose defendants from justifying any conduct that reduces output, regardless of whether that conduct is actually beneficial. Thus, the Output–Welfare Fallacy threatens to derail analysis in the most important

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[20] *See infra* Section II.B (discussing positions espoused by William F. Baxter, James C. Miller III, Charles "Rick" Rule, and others).

[21] *See infra* Section II.B (discussing positions espoused by Judges Posner, Bork, Ginsburg, and Easterbrook).

[22] *See, e.g.*, Herbert Hovenkamp, *Antitrust's Borderline* 3– (U. Pa. Inst. for L. & Econ. Rsch. Paper No. 20-44, July 22, 2020) (identifying "reasons for preferring output rather than price as the primary indicator of consumer welfare"); *see also infra* Section II.C (collecting sources).

[23] *See* Daniel A. Crane, *Harmful Output in the Antitrust Domain: Lessons from the Tobacco Industry*, 39 GA. L. REV. 321, 339–41 (2005) (arguing that antitrust should not blindly seek to increase output in "net-harm" industries like tobacco). Crane's article is one of the few works that explicitly recognize and also depart from the outputist framework. It is relatively narrow in scope, however—focusing solely on the issue of net-harm products—and thus concludes with correspondingly narrow normative prescriptions.

[24] This Article targets the underlying theoretical framework. For an earlier critique based on administrability concerns, *see* Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs To Achieve Power over Price*, 96 YALE L.J. 209, 283–84 (1986).

[25] *See infra* Section III.A.

[26] *See infra* Section III.B.

[27] *See infra* Section III.C.

[28] These include, *inter alia*, tying, predatory pricing, stifling innovation, deception, vertical intrabrand restraints, and more. *See infra* Section III.A.1, III.A.3–5, III.C.1.

[29] These include, *inter alia*, information asymmetries, negative externalities, and so-called "behavioral" issues—aspects of cognition that are exploitable by firms. *See infra* Section III.A.1, III.A.2, III.A.7.

[30] *See, e.g.*, Section III.B.1 (identifying the "Push/Pull" effects that can arise in barter markets).

[31] *See infra* Section III.A.

antitrust cases of our time: *United States v. Google*,[32] *FTC v. Facebook*,[33] *NCAA v. Alston*,[34] and more.

Part IV offers a much-needed course correction. As an initial matter, the Supreme Court's recent *AmEx* decision warrants immediate reversal, whether by the Court itself or via the nascent legislative effort underway to do so.[35] Scholars have already ably critiqued its approach to market definition and its unusual formulation of the rule-of-reason framework.[36] But identification of the Output–Welfare Fallacy reveals a much deeper and less contestable—and therefore more fatal—flaw in the majority's reasoning.[37]

Part IV next identifies the appropriate burdens of proof in antitrust cases.[38] The analytical lens cannot defensibly be narrowed to output alone. This insight yields three doctrinal principles. *First*, plaintiffs need not demonstrate that defendants have the ability to reduce output in order to prove that defendants possess market power.[39] *Second*, plaintiffs need not prove an actual or likely output reduction in order to carry their initial burden of proof.[40] *Third*, defendants need not prove that their conduct increased output in order to demonstrate a valid procompetitive justification.[41] As to each principle, Part IV offers case examples to illustrate the benefits of a more robust, flexible approach. Avoiding the Output–Welfare Fallacy reflects better economics and yields a simplified, more logical, more accurate, and less harmful method for antitrust decision-making. Part V briefly concludes.

II. THE OUTPUT-WELFARE FALLACY

The roots of antitrust outputism are embedded in neoclassical economic theory. During the mid-Twentieth Century, a group of academics drew upon neoclassical concepts to argue that

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[32] Complaint, United States v. Google, No. 1:20-cv-03010 (D.D.C. Oct. 20, 2020). NetChoice, a Google-funded advocacy organization, has already floated an outputist defense: "Has Google harmed consumers? No. Output is up significantly." NetChoice, *Senate Judiciary One-Pager: Does Google Pass the Antitrust Exam?*, https://netchoice.org/wp-content/uploads/2020/09/google-testimony-v2.pdf [https://perma.cc/Y5S8-JKDF].

[33] Complaint, FTC v. Facebook, Inc., No. 1:20-cv-03590-JEB (D.D.C. Jan. 13, 2021); *see also* New York v. Facebook, Inc., No. 1:20-cv-03589-JEB (D.D.C. Dec. 9, 2020).

[34] NCAA v. Alston, 141 S. Ct. 2141 (2021) (petition for certiorari to the U.S. Supreme Court granted).

[35] U.S. HOUSE OF REP., SUBCOMMITTEE ON ANTITRUST, COMMERCIAL AND ADMINISTRATIVE LAW OF THE COMMITTEE ON THE JUDICIARY, INVESTIGATION OF COMPETITION IN DIGITAL MARKETS 399 (2020) (recommending "[o]verriding *Ohio v. American Express*").

[36] *See, e.g.*, John B. Kirkwood, *Antitrust and Two-Sided Platforms: The Failure of* American Express, 41 CARDOZO L. REV. 1805, 1812–13, 1823–24 (2020); Erik Hovenkamp, *Platform Antitrust*, 44 J. CORP. L. 713, 744–52 (2019).

[37] *See infra* Section IV.A. The decision bears singling out in part because the real-world harms resulting therefrom are especially massive. AmEx's conduct raises the costs of accepting all credit cards, stifles innovation, forces the least well-off members of society to subsidize rewards for the already-wealthy, and increases the price of nearly every good and service sold in the United States. United States v. Am. Express Co., 88 F. Supp. 3d 143, 207–23 (S.D.N.Y. 2015), *rev'd on other grounds*, Ohio v. Am. Express Co., 138 S. Ct. 2274 (2018).

[38] *See infra* Section IV.B.

[39] *See infra* Section IV.B.1.

[40] *See infra* Section IV.B.2.

[41] *See infra* Section IV.B.3.

allocative efficiency was of utmost importance for antitrust policy.[42] Under this view, the primary concern of antitrust law is certainly not concentrated political power or the destruction of small businesses—but neither is it higher prices.[43] Instead, it is lost output, and the concomitant misallocation of societal resources. This misallocation is supposed to reduce welfare, making it undesirable from a utilitarian perspective.

That is a tale told simply enough. But understanding more fully the nature of the Output–Welfare Fallacy in contemporary antitrust doctrine and discourse requires a closer look at its origins. Outputism is deeply embedded in antitrust's intellectual and institutional histories. As the following discussion explains, it played a vital role in the embrace of the consumer-welfare standard.

A. Historical Origins

At least as far back as 1870, neoclassical economics emerged as an identifiable strain of thought.[44] The core of the theory was the assumption of marginalist decision-making.[45] Manufacturers generally exert near-total control over their own output decisions.[46] Thus, suppliers were thought to proceed by weighing the marginal costs of production against the expected marginal revenues, and producing up until the point at which the former would outweigh the latter.[47] From the very beginning, then, neoclassicists elevated output decisions to a place of central importance.

Neoclassical theory next married the notion of marginalism with the law of demand, yielding a simple portrait of a "market."[48] As to a given product, when prices decrease, customers demand more (and vice versa). At the same time, however, marginal production costs were assumed to increase across the relevant range of production.[49] Thus, each individual producer's output decisions will (the model predicts) cause the market to reach an equilibrium at which marginal revenue equals marginal cost.[50]

At last, neoclassical economists were ready to assess the relative performance of "competition" and "monopoly." The difference was clear: the monopoly equilibrium features lower output of the relevant product. Some customers willing to pay the competitive price—and

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[42] *See infra* Section II.B (cataloguing the rise of outputism in and around the University of Chicago).

[43] *See* Herbert Hovenkamp & Fiona Scott Morton, *Framing the Chicago School of Antitrust Analysis*, 168 U. PA. L. REV. 1843, 1844–53 (2020).

[44] *See, e.g.*, Robert B. Ekelund Jr. & Robert F. Hébert, *The Origins of Neoclassical Microeconomics*, 16 J. ECON. PERSPS. 197, 197–207 (2002) (labeling pre-1870 economists as "Proto-Neoclassicals").

[45] Herbert Hovenkamp, *The Marginalist Revolution in Legal Thought*, 46 VAND. L. REV. 305, 306 (1993).

[46] *See, e.g.*, Herbert Hovenkamp, *Antitrust Harm and Causation* 17 (U. Pa. Inst. for L. & Econ. Rsch. Paper No. 21-10, Feb. 14, 2021) ("Firms almost always have more control over output than they do over price.").

[47] Buyers are supposed to undertake a similar calculus, weighing the marginal benefits of purchasing each additional unit against the marginal costs of doing so.

[48] GEORGE J. STIGLER, THE THEORY OF PRICE 20 (4th ed. 1987) ("[Consumers] invariably obey one law as universal as any in social life; they buy less of a thing when its price rises.").

[49] This has remained a standard assumption. *See, e.g.*, Krattenmaker & Salop, *supra* note 24, at 247 n.117.

[50] Because the model depicts a single market, rather than the broader economy, this is denoted as a "partial" equilibrium.

even some willing to pay more than the competitive price—are unwilling to pay the monopoly price.[51] Instead, these customers turn to their second-best option(s), thereby diverting societal resources away from the "optimal" allocation. Thus, monopoly negatively impacts allocative efficiency, the preferred normative benchmark of neoclassical economics.[52]

Allocative efficiency was not preferred for its own sake. At the time the underlying ideas were being developed, welfare economics—how best to maximize society's utility, or well-being—was a central concern of the discipline.[53] Allocative efficiency was explicitly conceptualized as a means to an end: the utilitarian maximization of welfare.[54]

B. Application to Antitrust: The Rise of Chicago

The attempt to wed neoclassical price theory and utilitarian welfarism continued to suffer from substantial conceptual defects.[55] But despite ongoing debates within welfare economics, a handful of midcentury scholars associated with the nascent law-and-economics movement became enamored of the framework. In Marshallian cross diagrams,[56] these lawyers saw a unified field theory that could be applied to a variety of doctrinal areas—including, most importantly, antitrust.[57]

Much of this intellectual activity was centered in and around the University of Chicago.[58] The early writings of Ward Bowman, for example, contain the beginnings of an output-only vision for antitrust.[59] In a 1953 article on monopoly, Bowman suggested that the "[l]ower outputs" in a

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[51] Of course, some customers who were willing to pay more than the competitive price will pay the monopoly price. Monopoly thus shifts some surplus (and real wealth) from customers to the monopolist. But this mere transfer is of no interest to most neoclassical economists, who—following Bentham—were agnostic as to distributive effects. *See* JOHN RAWLS, A THEORY OF JUSTICE 23 (Harvard Univ. Press rev. ed. 1999) ("The striking feature of the utilitarian view of justice is that it does not matter, except indirectly, how this sum of satisfactions is distributed among individuals . . . .").

[52] As Khan puts it, "[t]he Chicago School revolution in antitrust entailed a twofold shift," with both descriptive and normative elements. Lina M. Khan, *The End of Antitrust History Revisited*, 133 HARV. L. REV. 1655, 1665 (2020) (reviewing TIM WU, THE CURSE OF BIGNESS: ANTITRUST IN THE NEW GILDED AGE (2018)).

[53] *See, e.g.*, Anthony B. Atkinson, *The Restoration of Welfare Economics*, 101 AM. ECON. REV. 157, 157 (2011).

[54] Subsequent generations of economists spent far less time reflecting on how to conceptualize and measure welfare, though they continued to make normative claims about "optimal," "efficient," and "welfare-enhancing" conduct and policy. *Id.* at 158–59. Sen attributes this to avoidance of the theoretical difficulties. *See* Amartya Sen, *The Possibility of Social Choice*, 89 AM. ECON. REV. 349, 351–53 (1999).

[55] *See, e.g.*, Mark Glick, *The Unsound Theory Behind the Consumer (and Total) Welfare Goal in Antitrust*, 63 ANTITRUST BULL. 455, 457–63 (2018).

[56] Though associated with Alfred Marshall, the earliest use of the diagram seems to have been by Cournot, in 1838. *See* Thomas M. Humphrey, *Marshallian Cross Diagrams and Their Uses Before Alfred Marshall: The Origins of Supply and Demand Geometry*, 78 ECON. REV. 3, 3 (1992).

[57] Robert Van Horn, *Corporations and the Rise of the Chicago Law and Economics Movement*, PROMARKET, (Jan. 15, 2020), https://promarket.org/corporations-and-the-rise-of-the-chicago-law-and-economics-movement [https://perma.cc/4QSX-QUPL] ("Under the heading 'Policies for Movement Towards the Free Market,' [Aaron] Director included ten policy areas and listed antitrust policy first.").

[58] There, key figures in the law school launched a "Free Market Study" intended to destabilize the antitrust status quo. *See id.* Henry Simons referred to the Study as the "Hayek Project." *Id.*

[59] At the time, Bowman was a research associate at the law school, and Robert Bork was a student. Bork described his first encounter with Bowman—in which Bowman presented a neoclassical attack on unions to Bork's labor-law class—as formative. *See* Robert H. Bork, *Ward S. Bowman, Jr.*, 87 YALE L.J. 235, 236 (1977).

monopolized market result in a "diversion" of resources to other areas, thereby "reduc[ing] . . . the total income of the community . . . ."[60] A year later, Robert Bork authored a paper identifying the only objectionable feature of monopoly as allocative inefficiency due to "a restriction of output."[61] Bowman's influential 1957 article on tying similarly emphasized output effects.[62]

By the 1960s, this project had begun to coalesce. Output was treated as if it were interchangeable with (allocative) efficiency, which began to be treated as if it were interchangeable with "total wealth."[63] Conduct that restricts output was therefore "antisocial."[64] And antitrust law was justified only to the extent that it prohibited such conduct.[65] Contemporary deviations from this preferred means–end framework created a perceived "crisis."[66]

The ideological and material stakes were immense. As Bork and Bowman recognized, antitrust was much more than "merely a set of economic prescriptions applicable to a sector of the economy. . . . [I]t is also an expression of a social philosophy, an educative force, and a political symbol of extraordinary potency."[67] Recognizing this, they cast about for a sufficiently powerful label for their new goal. They had started with "income,"[68] then shifted to "wealth." In a foundational pair of articles, however, Bork began to use "welfare" interchangeably with "wealth."[69] At the same time, he rhetorically tied all of these various concepts—output, efficiency, and welfare—to a discrete and sympathetic group: consumers.[70] Output served as a linchpin connecting allocative efficiency and consumer welfare, and allowing the freedom to pivot between the two as desired.

By the mid-1960s, all of the necessary pieces of the output–welfare means–ends framework were in place. Bork's most influential articles clearly espouse this vision. His explication merits quoting at length:

> [A]cceptance of consumer want satisfaction as the law's ultimate value requires the courts to employ as their primary criterion the impact of any agreement upon

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[60] Ward S. Bowman, Jr., *Toward Less Monopoly*, 101 U. PA. L. REV. 577, 623 (1953).

[61] Robert Bork, *Vertical Integration and the Sherman Act: The Legal History of an Economic Misconception*, 22 U. CHI. L. REV. 157, 197–200 (1954).

[62] Although "[m]onopoly is commonly described as the power to set a price," Bowman observed, the competitive effects of tying arrangements hinge on "supply restriction on the tied product . . . .". Ward S. Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19, 20 n.5 (1957).

[63] *See* Robert H. Bork & Ward S. Bowman, Jr., *The Goals of Antitrust: A Dialogue on Policy*, 65 COLUM. L. REV. 363, 365 (1965). The citation herein is to a version of Bork and Bowman's "The Crisis in Antitrust", originally published in the December 1963 issue of *Fortune* magazine. Per the law-review editors' footnote, this version was "expanded, revised, and documented." *Id.* at 363 n.‡.

[64] *Id.*

[65] *See id.*

[66] *Id.* at 364.

[67] *Id.*

[68] Bowman, *supra* note 60, at 624.

[69] *See* Robert H. Bork, *The Rule of Reason and the Per Se Concept: Price Fixing and Market Division*, 74 YALE L.J. 775, 828 (1965) [hereinafter Bork, *Rule of Reason I*] ("consumer welfare"); *id.* at 831 ("the wealth of the society."); Bork, *supra* note 2, at 378 ("[T]he law's exclusive concern is with the maximization of wealth or consumer want satisfaction.").

[70] Bork, *supra* note 2, at 376–77 ("This . . . article attempts to provide a general theory capable of making the law . . . internally consistent, . . . and effective in serving consumer welfare.").

> output, and thus to determine whether the net effect of the agreement is to create efficiency, and thereby increase output or, alternatively, to restrict output.[71]

The passage succinctly contains the key elements of the Chicagoan position regarding both antitrust's goals *and* the appropriate metric for analysis. The exclusive goal of antitrust law is to promote consumer welfare.[72] Welfare itself may not be measurable, but lower output (always) represents lost efficiency and therefore less welfare. Higher output (always) represents increased efficiency and therefore more welfare. Thus, the proper way to conduct antitrust analysis is to focus exclusively on output.[73] Consumer welfare was to be the end; output was to be the means.[74]

In the years that followed, Chicagoan academics expanded on and reiterated these interrelated claims.[75] Bork (in)famously purported to locate in the Sherman Act's legislative history a singular goal, protecting consumer welfare.[76] Moreover, he suggested, "Sherman and his colleagues identified the phrase 'restraint of commerce' or 'restraint of trade' with 'restriction of output.'"[77] In the first edition of *Antitrust Law*, Richard Posner explained that "the cost of monopoly [is] the output the monopolist does *not* produce, and which a competitive industry would."[78] The following year, in *The Antitrust Paradox*, Bork flatly declared that "[t]he task of antitrust is to identify and prohibit those forms of behavior whose net effect is output restricting and hence detrimental."[79]

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[71] *Id.* at 375.

[72] Bork famously either intentionally or mistakenly conflated "consumer" and "total" welfare. *See e.g.*, Steven C. Salop, *Question: What Is the Real and Proper Antitrust Welfare Standard? Answer: The* True *Consumer Welfare Standard*, 22 LOY. CONSUMER L. REV. 336, 336 (2010) (referring to the "confusion that has resulted from Judge Robert Bork's usage of the term 'consumer welfare' in referring to aggregate welfare").

[73] *See, e.g.*, Bork, *Rule of Reason I*, *supra* note 69, at 838 ("The main tradition's policy of wealth maximization requires no balancing in a cartel case because the effect of the agreement is only to restrict output. But the Brandeis tradition requires comparison of benefits to producers and benefits to consumers.").

[74] Allocative efficiency and a substantive preference for consumer interests are distinct concepts. Sanjukta Paul, *Antitrust as Allocator of Coordination Rights*, 67 UCLA L. REV. 378, 417–19 (2020). Bork did not appear to recognize the divergence—the two can be directly at odds—or if he did, he did not meaningfully address it. The result was, variously, "ambiguity or equivocation." *Id.* at 419. Paul contends that (1) consumer welfare "provide[d] an intuitive and supposedly administrable decision rule for actual cases," while (2) allocative efficiency enabled Chicagoans to benefit from the intellectual prestige of neoclassical economics. *Id.* The present analysis suggests instead that output—which supposedly measures both efficiency and welfare—provided the decision rule for actual cases, while consumer welfare provided the normatively appealing goal. At the same time, output allowed Chicagoans to pivot between consumer welfare and allocative efficiency, i.e., to have their cake and eat it too.

[75] Bork added an argument from legislative history, though it did not stand up particularly well to subsequent scrutiny. Robert H. Bork, *Legislative Intent and the Policy of the Sherman Act*, 9 J.L. & ECON. 7, 7 (1966) ("[T]he policy the courts were intended to apply is the maximization of wealth or consumer want satisfaction. This requires courts to distinguish between agreements or activities that increase wealth through efficiency and those that decrease it through restriction of output.").

[76] *Id.* ("[T]he policy the courts were intended to apply is the maximization of wealth or consumer want satisfaction. This requires courts to distinguish between agreements or activities that increase wealth through efficiency and those that decrease it through restriction of output.").

[77] *Id.* at 16.

[78] I RICHARD POSNER, ANTITRUST LAW: AN ECONOMIC PERSPECTIVE 11 (1976).

[79] BORK, *supra* note 2, at 122; *see also id.* ("We must appraise any questioned practice . . . in order to determine whether it contains any likelihood of creating output restriction."). To be sure, Bork's analysis was self-contradictory at times. His treatment of productive efficiencies, for example, suggested that even mergers to monopoly might be

These advocates found a receptive audience in the post-Warren Era Supreme Court.[80] Judicial suggestions that output is the *sine qua non* of antitrust appear as early as the Court's 1979 *BMI* decision. Justice White, speaking for the majority, opined that "our inquiry must focus on whether . . . the practice facially appears to be one that would always or almost always tend to restrict competition and decrease output . . . or instead one designed to 'increase economic efficiency . . . .'"[81] The concepts of competition, output, and efficiency are all used interchangeably, just as they had been in Bork's and Bowman's early writings.

Other federal judges formerly affiliated with Chicago soon began to espouse outputism from the bench.[82] Posner was appointed by President Reagan to the Seventh Circuit in 1981.[83] Like his earlier scholarly writings, Posner's judicial opinions strongly endorsed outputist analysis.[84] He also equated output with consumer welfare, once rejecting alleged merger efficiencies because the defendants "did not make a convincing showing that [they] would result in a significant increase in output (which would of course benefit consumers)."[85]

Robert Bork joined Posner on the bench in 1982. Unsurprisingly, Bork's views did not change upon his becoming a federal judge. In *Rothery Storage*, for example, he began by stating

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justified by internal cost savings to the firm, despite clearly resulting in lower output. *Id.* at 107. The author thanks Herb Hovenkamp for this insight.

[80] George L. Priest, *Bork's Strategy and the Influence of the Chicago School on Modern Antitrust Law*, 57 J. L. & ECON. S1, S13 (2014). The ideological makeup of the Court dramatically shifted during the 1970s, along with the replacements of Warren by Burger, Black by Powell, and Douglas by Stevens. Interestingly, Justice Stevens—though far from the most conservative of this new wave—had co-taught antitrust with Director at Chicago, an experience Stevens described as "the most important intellectual experience of his life." *Id.* at S13–14.

[81] Broad. Music, Inc. v. Columbia Broad. Sys., Inc., 441 U.S. 1, 19–20 (1979). This language in *BMI* could perhaps be read as simply a response to the particular facts at hand. The lawsuit alleged that a horizontal joint-licensing arrangement among copyright-holders violated Sherman Act § 1. The copyright holders' primary defense was that the arrangement increased output. Thus, the *BMI* opinion could simply have reflected the centrality of output effects to the parties' competing arguments. That said, Frank Easterbrook represented the United States as *amicus curiae* in his role as Deputy Solicitor General. The United States in its brief pointed to a "decrease in production" as the fundamental cost to society from harmful cartel agreements. Brief for United States as Amicus Curiae at 15, *Broad. Music, Inc.* 441 U.S. 1 (Nos. 77-1578 and 77-1583). In any event, the Court's language was subsequently quoted in multiple different contexts. Bus. Elec. Corp. v. Sharp Elec. Corp., 485 U.S. 717, 723 (1988) ("decrease output") (citation omitted); Nw. Wholesale Stationers, Inc. v. Pac. Stationery & Printing Co., 472 U.S. 284, 289–90 (1985) (same) (citation omitted).

[82] This is not meant to be a comprehensive description of the Chicago and Chicago-adjacent academia-to-judiciary pipeline, which was quite substantial. *See, e.g.*, Clay Risen, *Ralph K. Winter Jr., a Top Conservative Judicial Mind, Dies at 85*, N.Y. TIMES, (Dec. 18, 2020), https://www.nytimes.com/2020/12/18/us/ralph-k-winter-jr-dead.html#:~:text=Winter%20Jr.%2C%20a%20conservative%20legal,said%20his%20son%2C%20Andrew%20Winter [https://perma.cc/9ZJS-DJ7S] ("In the early 1970s [Winter] had joined two other law school professors, Robert H. Bork and Ward S. Bowman Jr., in forming the East Coast outpost of the law and economics movement . . . .").

[83] Adam Liptak, *An Exit Interview with Richard Posner, Judicial Provocateur*, N.Y. TIMES (Sept. 11, 2017), https://www.nytimes.com/2017/09/11/us/politics/judge-richard-posner-retirement.html [https://perma.cc/SCT4-44HU].

[84] *See, e.g.*, Olympia Equip. Leasing Co. v. W. Union Tel. Co., 797 F.2d 370, 378 (7th Cir. 1986) ("The main economic objection to monopoly is that the monopolist restricts output compared to what it would be under competition.").

[85] FTC v. Elders Grain, Inc., 868 F.2d 901, 904 (7th Cir. 1989).

that "the purpose of the antitrust laws" is "the promotion of consumer welfare."[86] Bork continued, "[t]here is . . . no possibility that the [challenged] restraints can suppress market competition and so decrease output," en route to holding for the defendant.[87]

Frank Easterbrook, a graduate of and faculty member at Chicago, was appointed by Reagan to the Seventh Circuit in 1984.[88] Upon joining the judiciary, Easterbrook made clear his view that all of antitrust boils down to output analysis. "The core question in antitrust is output," he wrote in *Chicago Professional Sports Ltd.*, "[u]nless a contract reduces output in some market, to the detriment of consumers, there is no antitrust problem."[89] Other cases contained similar pronouncements.[90] And these were not the only Chicagoan judicial appointees to endorse outputism.[91]

As the Output–Welfare Fallacy was making the leap into the judiciary, Chicagoans were also spreading it to the highest levels of the federal antitrust agencies. A number of Reagan-era appointees to the U.S. Department of Justice Antitrust Division and the Federal Trade Commission endorsed outputism. Many had direct ties to, or were expressly influenced by, Chicago. As one put it, "[T]here were a number of other Chicago School grads . . . , all of whom essentially brought what they had learned—just like Bob Bork brought what he had learned to *The Antitrust Paradox*, we brought it to the Antitrust Division."[92]

Reagan's first Assistant Attorney General of the Antitrust Division was William Baxter,[93] whose tenure at Stanford Law had overlapped with that of both Aaron Director and Richard Posner.[94] Baxter swiftly brought the Chicago gospel—including the Output–Welfare Fallacy—to

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[86] Rothery Storage & Van Co. v. Atlas Van Lines, Inc., 792 F.2d 210, 218 (D.C. Cir. 1986).

[87] *Id.* at 229.

[88] *See, e.g.*, Emily Hoerner & Rick Tulsky, *Pattern of Misstated Facts Found in Opinions of Renowned US Judge Easterbrook*, INJUSTICE WATCH, Apr. 4, 2017, https://www.injusticewatch.org/projects/2017/pattern-of-misstated-facts-found-in-probe-of-renowned-federal-judges-opinions/.

[89] Chi. Pro. Sports Ltd. P'ship v. NBA, 95 F.3d 593, 597 (7th Cir. 1996).

[90] Ball Mem'l Hosp., Inc. v. Mut. Hosp. Ins., Inc., 784 F.2d 1325, 1335 (7th Cir. 1986) ("Market power comes from the ability to cut back the market's total output . . . ."); Menasha Corp. v. News Am. Mktg. In-Store, Inc., 354 F.3d 661, 663 (7th Cir. 2004) (declaring that the only injuries "that matter under the federal antitrust laws" are "lower output and the associated welfare losses").

[91] Douglas Ginsburg, for example, has at times given output a central role in his judicial and academic writings. *See, e.g.*, Superior Ct. Trial Laws. Ass'n v. FTC, 856 F.2d 226, 234 (D.C. Cir. 1988) (identifying "constriction of supply [as] the essence of [and primary concern associated with horizontal] 'price-fixing'"), *rev'd in part*, 493 U.S. 411 (1990); Wright & Ginsburg, *supra* note 1, at 2416–22 (arguing, in defense of the "welfare approach," that vertical restraints that encourage retailer promotions are "efficient . . . in the sense that they increase output"). Judge Ginsburg, a graduate of and visiting lecturer at Chicago, was appointed by President Reagan to the D.C. Circuit in 1986. *Douglas Howard Ginsburg*, L. LIBR. – AM. L. & LEGAL INFO., https://law.jrank.org/pages/7157/Ginsburg-Douglas-Howard.html [https://perma.cc/E2GS-T5FU] (last updated Sept. 13, 2021).

[92] Rule, *supra* note 16, at 05:26; *see also id.* at 05:04 ("[In addition to Baxter] there were . . . others. I came to the Antitrust Division in late 1982. Doug Ginsburg followed shortly thereafter. We both went on eventually to be the head of the Division . . . . But in addition to us there were a number of other Chicago School grads. Ron Carr was the first, one of Bill Baxter's deputies. But there were others, like Dale Collins, Deb Garza . . . all of whom essentially brought what they had learned . . . to the Antitrust Division.").

[93] Richard Schmalensee, *Bill Baxter in the Antitrust Arena: An Economist's Appreciation*, 51 STAN. L. REV. 1317, 1323 (1999).

[94] Press Release, Hoover Inst., Aaron Director, Founder of the Field of Law and Economics, Hoover Institution Fellow and Distinguished University of Chicago Economist, Sept. 14, 2004, (https://www.hoover.org/press-

the Division. In a 1982 interview, for example, he explained that "[t]he [antitrust] statutes talk in terms of competition and restraints on trade—which I take to mean restraints on output . . . ."[95]

James Miller III, Reagan's first FTC Chairman,[96] cited as his primary intellectual influences Bork, Posner, Stigler, Demsetz, and other Chicagoans.[97] Unsurprisingly, Miller endorsed output-only antitrust. In *Ethyl Corp.*, for example, Miller dissented from his fellow Commissioners' decision to condemn facilitating practices among members of a four-firm oligopoly, reasoning that such practices should be prohibited only if they reduce "industry output of a … homogeneous product".[98]

Charles "Rick" Rule became the third Chicagoan to head up the DOJ Antitrust Division, following both Baxter and Douglas Ginsburg (who was later appointed to the D.C. Circuit).[99] According to Rule, the Chicago-helmed Division embraced "the notion that output, and a practice's expected or likely impact on output, is the critical measure of whether or not one should be concerned about conduct."[100] Under this view, analyzing anything other than output—even price effects—is a mistake.[101] In a statement that might surprise some contemporary critics, Rule explained that analyzing price effects is "old wine pre-*Antitrust Paradox* poured into new bottles," a recipe for "deleterious results."[102] Like Baxter and Bork, Rule treated output as being

releases/aaron-director-founder-field-law-and-economicshoover-institution-fellow-and) [https://perma.cc/G8KE-94R5]. Director actively participated in faculty workshops at Stanford. *See id.* Baxter also worked with Bork on the Neal Report in the late 1960s, though Bork dissented from the final report and Baxter later repudiated it. Herbert J. Hovenkamp, The Neal Report and the Crisis in Antitrust (Mar. 5, 2009), (http://scholarship.law.upenn.edu/faculty_scholarship/1794) [https://perma.cc/RDG3-QJV4] (unpublished opinion).

[95] *Antitrust Debate: The Big, The Bad, and The Beautiful*, N.Y. TIMES, Nov. 21, 1982, at E5, https://timesmachine.nytimes.com/timesmachine/1982/11/21/47793118632546.html?pageNumber=171 [permalink]. Baxter conflated efficiency with consumer welfare: "The antitrust statutes . . . proscrib[e] those commercial activities that are more likely than not to reduce 'consumer welfare'—i.e., allocative and productive efficiency." WILLIAM F. BAXTER, ANTITRUST LAW AND THE STIMULATION OF TECHNOLOGICAL INVENTION AND INNOVATION 4 (1983), https://www.justice.gov/atr/speech/file/1237501/download [https://perma.cc/J55K-AC7P] (citation omitted); *see also id.* ("[T]he antitrust laws condemn only . . . conduct that has as its purpose or effect the accumulation and exercise of market power, which allows its holders to restrict output and thereby adversely to affect resource allocation.").

[96] Miller graduated from the economics department at the University of Virginia, where his time overlapped with that of James Buchanan. On the influence of the latter, *see* Sam Tanenhaus, *The Architect of the Radical Right: How the Nobel Prize-Winning Economist James M. Buchanan Shaped Today's Antigovernment Politics*, THE ATLANTIC, (July/Aug. 2017), https://www.theatlantic.com/magazine/archive/2017/07/the-architect-of-the-radical-right/528672 [https://perma.cc/ZXA5-WQLE].

[97] Eleanor M. Fox, *Chairman Miller, the Federal Trade Commission, Economics, and* Rashomon, 50 L. & CONTEMP. PROBS. 33, 36 (1987).

[98] *Id.* at 48 (quoting *In re.* Ethyl Corp., 101 F.T.C. 425, 656 (1983)).

[99] Rule, the youngest-ever Division AAG, was appointed just five years after he graduated from Chicago's law school. *See Charles F. (Rick) Rule*, PAUL WEISS, https://www.paulweiss.com/professionals/partners-and-counsel/charles-f-rick-rule [https://perma.cc/W5GK-KNL2].

[100] Rule, *supra* note 16, at 07:56.

[101] *Id.* at 11:26 ("There has been this tendency to substitute price for output as the measure of the impact of a particular transaction. . . . [F]ocusing on price and the impact on price to the exclusion of the impact on output is another source of deleterious results . . . .").

[102] *Id.* at 1:04:20 ("[T]o quote another Chicago Schooler, . . . Ed Levi, that he used to teach in his Legal Elements class, was the notion that to some extent by converting the term 'consumer welfare' to 'consumer surplus,' and by

interchangeable with both allocative efficiency and consumer welfare, and concluded that output is the appropriate "measure" for analysis.[103]

C. Entering the Mainstream

During the decades that followed, the Output–Welfare Fallacy became more and more engrained into the dominant antitrust paradigm. Today, it pervades antitrust commentary. The venerable Areeda and Hovenkamp treatise states that "the overall goal [of antitrust] is markets that maximize output."[104] In its *Antitrust Law Developments* treatise, the ABA Section of Antitrust Law explains that "evidence of supracompetitive pricing must be accompanied by evidence of restricted output."[105] Former FTC Commissioner Joshua Wright and Professor John Yun contend that "measuring output effects . . . is the central purpose and ultimate aim of welfare analysis."[106] In his widely influential article on error costs, Easterbrook declares that "[i]f arrangements are anticompetitive, the output and market share of those using them must fall."[107] Professor Thom Lambert "defin[es] competition in terms of output, where a defendant's action is procompetitive if it leads to greater market output and anticompetitive if it leads to a reduction in market output."[108] In their treatise on intellectual property and antitrust, Professors Hovenkamp, Janis, Lemley, Leslie, and Carrier state that "[f]undamentally, the rule of reason considers whether a restraint is output increasing or output decreasing."[109] A recent amicus brief signed by Professors Boliek, Cooper, Epstein, Haber, Hazlett, Hurwitz, Lambert, Lipsky, Manne, Semeraro, Teece, Wright, Yoo, and Yun posits that "[t]he fundamental goal of antitrust law is to foster consumer welfare by enhancing or increasing output."[110] In short, outputism has become the "Holy Grail" of the antitrust orthodoxy.[111]

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focusing on price rather than output, . . . you can look at some of the arguments that are being made by some of the people who take that position that look a lot like the old wine, pre-*Antitrust Paradox,* poured into new bottles.").

[103] *Id.* at 07:55.

[104] AREEDA & HOVENKAMP, *supra* note 4, at ¶ 114; *see also* HERBERT HOVENKAMP, THE ANTITRUST ENTERPRISE: PRINCIPLE AND EXECUTION 13 (2005) ("While we often think of antitrust as troubled by high prices, it is better to think of antitrust's main concern in terms of restrictions on output."). The treatise does note elsewhere that a "reduction in output is not the only measure of anticompetitive effect." *Id.* ¶ 1503b(1).

[105] ABA SECTION OF ANTITRUST LAW, ANTITRUST LAW DEVELOPMENTS 227 (8th ed. 2017).

[106] Joshua D. Wright & John M. Yun, *Burdens and Balancing in Multisided Markets: The First Principles Approach of* Ohio v. American Express, 54 REV. INDUS. ORG. 717, 732 (2019).

[107] Easterbrook, *supra* note 7, at 31.

[108] Thom Lambert, *A Decision-Theoretic Rule of Reason for Minimum Resale Price Maintenance*, 55 ANTITRUST BULL. 167, 174 n.28 (2010).

[109] HERBERT HOVENKAMP, MARK D. JANIS, MARK A. LEMLEY, CHRISTOPHER R. LESLIE & MICHAEL A. CARRIER, IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW § 7.03[A] (3d ed. 2017). To be sure, at least some of these authors have explicitly recognized elsewhere that output and welfare are not perfectly interchangeable. *See, e.g.*, SULLIVAN, ET AL., *supra* note 5, at 462 ("Once this assumption [that different consumers value point-of-sale services differently] is made, it can no longer be shown that any particular instance of [vertical resale price maintenance] is efficient, even if it increases output. Some are and some are not."). The relevant point for present purposes is that the more general statements equating output with welfare remain in circulation and, more importantly, both reflect and have impacted the development of antitrust doctrine.

[110] Brief for Amici Curiae, *supra* note 6, at *3.

[111] *See* Crane, *supra* note 23, at 326 (arguing that antitrust should not blindly seek to increase output in "net-harm" industries like tobacco). Crane's article stands as one of the few existing exceptions to the outputist

The Output–Welfare Fallacy is also passed down in the classroom to successive generations of future antitrust enforcers, attorneys, and judges. At least as far back as Edward Levi's tenure at Chicago, it was being taught in law-school courses.[112] This remains true today. For example, in a widely used antitrust casebook authored by Professors Sullivan, Hovenkamp, Shelanski, and Leslie, students learn, as early as the second page, that "[a]bsent a finding of output limitation, the conduct is deemed efficient and beyond the condemnation of the antitrust laws."[113]

This decades-long ascendance culminated in 2018, when the U.S. Supreme Court decided *Ohio v. American Express Co.* ("*AmEx*").[114] The case is explored further *infra*; for present purposes a brief summary will suffice. At issue were certain contractual provisions between a credit-card network and the merchants who accept its cards as payment for goods and services. AmEx's "no-steering" rules forbade merchants from presenting any particular credit-card network in a differentiated way to their customers—no offering discounts for paying with Discover, no saying "We Prefer MasterCard," etc.[115] The trial court found that AmEx's no-steering rules had increased retail prices for nearly every consumer product sold in the United States (among other ill effects),[116] and that AmEx did not pass through all of its supracompetitive profits to cardmembers in the form of rewards.[117]

During oral arguments, Justice Gorsuch, a consummate antitrust insider,[118] was the first to interject:

> JUSTICE GORSUCH: We're not here to protect competitors, right . . . ? . . . Or -- or necessarily even merchants. The antitrust laws are aimed at protecting consumers; you'd agree with that? . . . So, given that, there's no evidence of restricted output in this case, correct?[119]

Justice Kennedy's first question similarly invoked outputism:

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orthodoxy. It is narrow in scope, however—focusing solely on the "harmful products" issue—and offers correspondingly narrow normative prescriptions.

[112] Rule, *supra* note 16, at 1:04:20.

[113] SULLIVAN ET AL., *supra* note 104, at 2. A few pages later, the reader learns that "the Supreme Court has accepted gradually the economic objectives of efficiency and increased consumer welfare as the underlying policies of antitrust." *Id.* at 4. Thus, the reader is quickly introduced to the idea that output, (allocative) efficiency, and consumer welfare are effectively interchangeable. To be sure, these propositions are later qualified. *Id.* at 461 ("As a general rule, an output increase is a good sign that a practice is efficient.").

[114] Ohio v. Am. Express Co., 138 S. Ct. 2274 (2018).

[115] United States v. Am. Express Co., 88 F.Supp.3d 143, 165 (E.D.N.Y. 2015).

[116] *Id.* at 216 ("Even if [AmEx] passed through every cent of its premium . . . to cardholders—which it does not—customers who do not carry or qualify for an Amex card are nonetheless subject to higher retail prices at the merchant . . . .").

[117] *Id.*

[118] *See, e.g.*, John M. Newman, *The Antitrust Jurisprudence of Neil Gorsuch*, 45 FLA. ST. U. L. REV. 225, 226 (2017) ("Like Justice Stevens, Gorsuch both practiced antitrust law as an attorney and taught antitrust as a professor.").

[119] Transcript of Oral Argument at 4, Ohio v. Am. Express Co., 138 S.Ct. 2274 (2018) (No. 16-1454).

> JUSTICE KENNEDY: "[C]ould you comment on the brief of the antitrust law and economic scholars in favor of Respondents? They said for us to focus on output."[120]

They had indeed—the amicus brief in question referred to output effects as "the *sine qua non*"[121] and "the touchstone"[122] of antitrust analysis.

Both Gorsuch and Kennedy joined the majority opinion, which strongly endorsed outputism. Justice Thomas,[123] writing for a 5–4 majority, began by quoting the leading treatise: "Market power is the ability to raise price profitably *by restricting output*."[124] (Thomas added the emphasis.) The opinion admitted that AmEx's restraints had caused higher prices without yielding equivalent offsetting benefits.[125] Nonetheless, marketwide *output* had been increasing over the relevant time period.[126] Because the plaintiffs had not proven that AmEx's conduct had reduced output, their case failed—again, despite a factual record replete with evidence of actual harm.[127] As Justice Breyer noted in dissent, the majority effectively held "that even net price increases do not matter after all, absent a showing of lower output."[128]

AmEx is the U.S. Supreme Court's clearest endorsement of output-only antitrust. The majority opinion's fixation on output may be surprising to critics more accustomed to thinking of the Chicago School and the contemporary antitrust enterprise as being overly focused on prices. *AmEx* stands for the opposite proposition: output trumps all else, even prices.

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As the foregoing historical analysis reveals, *AmEx* did not emerge from a vacuum. The roots of outputism run deep. Antitrust insiders pass it amongst each other, and to each new generation, in the sacred texts of the discipline. Of course, its hold is not complete. It does not explain every single judicial opinion, nor does it drive every enforcement decision. There is broad consensus, for example, that garden-variety cartel agreements should be condemned even without

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[120] *Id.* at 10–11.

[121] Brief for Amici Curiae, *supra* note 6, at *3.

[122] *Id.*

[123] Two of Thomas's previous assays into antitrust rule-making are generally regarded as poorly reasoned. *See, e.g.*, Jonathan B. Baker, *The Problem with* Baker Hughes *and* Syufy*: On the Role of Entry in Merger Analysis*, 65 ANTITRUST L.J. 353, 365–69 (1997) (discussing *Baker Hughes*); Chris Sagers, *Platforms,* American Express*, and the Problem of Complexity in Antitrust*, 98 NEB. L. REV. 389, 393 (2019) ("[*Texaco v.*]*Dagher* . . . was quickly rendered essentially irrelevant by *American Needle*.").

[124] Ohio v. Am. Express. Co., 138 S. Ct. 2274, 2288 (2018) (emphasis added) (quoting PHILLIP AREEDA & HERBERT HOVENKAMP, FUNDAMENTALS OF ANTITRUST LAW § 5.01 (4th ed. 2017) (internal quotation marks omitted)).

[125] *See id.*

[126] *Id.*

[127] *Id.*; *see also id.* at 2289 ("The plaintiffs also failed to prove that Amex's antisteering provisions have stifled competition among credit-card companies. To the contrary, while these agreements have been in place, the credit-card market experienced expanding output . . . .").

[128] *Id.* at 2302 (Breyer, J., dissenting); *see also* Michael L. Katz & A. Douglas Melamed, *Competition Law as Common Law:* American Express *and the Evolution of Antitrust*, 168 U. PA. L. REV. 2061, 2095 (2020) ("In effect . . . the Court held that, at least absent direct proof of the often unobservable competitive price, proof of harm to competition requires proof of reduced output.").

proof of an actual output reduction.[129] But cases like *AmEx* are the only kind in which the choice of means and ends actually matters. And in *AmEx*, output was deployed as the exclusive criterion for analysis, just as orthodox commentators have long urged.

The stakes are high. Outputism is an exceptionally narrow vision for antitrust, as the *AmEx* case itself makes clear. It is difficult to conceive of a more harmful restraint than one that has endured for decades in a highly concentrated market, stifles innovation, is highly regressive, and increases the cost of nearly every good and service sold in the United States.[130] Nonetheless, outputism was used to justify dismissing the case and allowing those harms to go unremedied.

Such a narrow lens ought to be employed only if its foundations are exceptionally solid. As we have seen, antitrust outputism rests on the assumption that output is effectively interchangeable with, and can therefore be used as a reliable metric for, consumer welfare. The following discussion explains why that assumption—widely held though it may be—is unsound and unwarranted.

III. DECOUPLING OUTPUT AND WELFARE

Output and welfare diverge in myriad ways. These can be organized into three broad categories of conduct and market dynamics. *First*, a number of strategies can increase output, yet reduce welfare. The inverse is also true: a variety of conduct can reduce output, yet increase welfare. *Second*, conduct that affects multiple products can cause conflicting output effects *and* conflicting welfare effects. *Third*, conduct can be harmful without causing a corresponding output reduction. What emerges is a broad decoupling of concepts previously thought to be effectively interchangeable. If these were scattered or unimportant instances, they could be ignored. But taken together, they compel the conclusion that output effects cannot serve as the exclusive "criterion"[131] or "measure"[132] of consumer welfare. Along the way, a corollary point emerges: outputism also fails to reflect substantial portions of existing doctrine and practice. Thus, the Output–Welfare Fallacy exhibits fatal flaws in both its normative (antitrust *should* focus exclusively on output effects) and descriptive (antitrust *does* focus exclusively on output) modes.

A. Divergent Output and Welfare Effects

A variety of strategies—including some that are quite well-recognized by antitrust law—can have the effect of *increasing* output while simultaneously *reducing* welfare. These include

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[129] *See, e.g.*, Leegin Creative Leather Prods., Inc. v. PSKS, Inc., 551 U.S. 877, 886 (2007) ("Restraints that are *per se* unlawful include horizontal agreements among competitors to fix prices, or to divide markets.") (citations omitted). *But cf.* Broad. Music, Inc. v. Columbia Broad. Sys., Inc., 441 U.S. 1, 22, 22 n.40 (1979) (prescribing the lenient Rule of Reason for a horizontal price-setting agreement because it was "unlikely to cause decreased output.").

[130] After Australia prohibited no-steering rules like the one at issue in *AmEx*, retail prices nationwide declined sharply enough to noticeably lower the country's overall Consumer Price Index. *See* Brief for Amicus Curiae Australian Retailers Ass'n in Support of Petitioners at *19, Ohio v. Am. Express Co., 138 S. Ct. 2274 (2018) (No.16-1454) ("Importantly, these benefits to consumers have often gone to those most in need.").

[131] Bork, *supra* note 2, at 375.

[132] Rule, *supra* note 16, at 07:55.

creating or maintaining information asymmetries, deception and misleading, predatory pricing, coercive practices like tying, intrabrand vertical restraints, externalizing costs, and exploiting cognitive limits. And the inverse is true as well: a variety of conduct can *decrease* output while simultaneously *increasing* welfare. All of the examples below have been and are of central importance to antitrust law. Some (vertical intrabrand restraints, tying, predatory pricing, deception, etc.) are frequent targets of litigation. Others (alleviating information asymmetries, preventing negative externalities, etc.) are often the basis for defendants' procompetitive justifications. The following discussion reveals three key points: (1) output and welfare effects often move in opposite directions, (2) the Output–Welfare Fallacy will therefore often yield incorrect prescriptions,[133] and (3) actual doctrine and practice are frequently at odds with the outputist framework.

1. Creating, Exploiting, or Alleviating Information Asymmetries

An information asymmetry exists where one party to a transaction possesses more relevant information than another party.[134] Firms can actively create, maintain, and exploit information asymmetries. On the other hand, firms can also work to alleviate such asymmetries. Any of these strategies can cause divergent output and welfare effects.

Conduct that creates or maintains an information asymmetry can increase output of the relevant product.[135] Yet such conduct can also reduce welfare. Lacking adequate information about relative costs and benefits, the targeted parties may overpay, forego better alternatives, or otherwise enter into harmful transactions.[136]

FTC v. Indiana Federation of Dentists offers a high-profile example of an agreement to maintain an information asymmetry.[137] Insurance companies in Indiana had begun reimbursing dentists only for the "least expensive [] adequate course" of treatment"[138] The insurers had also begun requesting "any dental x rays . . . used by the dentist in examining the patient," in order to

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[133] Assuming, of course, that consumer welfare is the exclusive goal of antitrust—an assumption that appears to be universally endorsed by proponents of outputist antitrust.

[134] *See* George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488, 489 (1970).

[135] Akerlof's pioneering work on information asymmetries focused on the relationship between product quality and lack of information on the part of buyers. *See id.* at 488. He contended that such markets will yield lower-quality products, and therefore less demand and lower (perhaps even zero) market activity. *Id.* But the model depended on a number of conditions that may or may not be present, including high-quality and low-quality versions of the same good, that prospective buyers know ex ante of the risk that goods will be low-quality, that buyers can (again, ex ante) at least roughly assess the costs and benefits associated with both low- and high-quality versions, and more. In short, information asymmetries do not inevitably lead to lower or zero output; they may instead have the opposite effect. On the non-generalizability of Akerlof's model, *see* Steven Salop & Joseph Stiglitz, *Bargains and Ripoffs: A Model of Monopolistically Competitive Price Dispersion*, 44 REV. ECON. STUD. 493, 493–94 (1977).

[136] *E.g.*, Maurice E. Stucke, *How Do (and Should) Competition Authorities Treat a Dominant Firm's Deception?*, 63 SMU L. REV. 1069, 1073–74 (2010). Thus, for example, a customer might pay too much for a car that—unbeknownst to her—has a failing transmission. At a market level, this over-buying yields a deadweight loss. Aidan R. Vining & David L. Weimer, *Information Asymmetry Favoring Sellers: A Policy Framework*, 21 POL'Y SCI. 281, 283–84 (1988) (noting that seller-favoring information asymmetries also transfer surplus to sellers).

[137] 476 U.S. 447 (1986).

[138] *Id.* at 449.

assess whether a given procedure met that standard.[139] If not, the insurers would not pay for it. A group of dentists collectively refused to transmit x-rays to insurers.[140] According to the FTC, that agreement artificially propped up demand for dental services, thereby harming insurers and patients.[141] In other words, the agreement had the effect of increasing output of the relevant services while reducing consumer welfare. Outputist analysis would conclude that the conduct was legal, even procompetitive. But a unanimous U.S. Supreme Court held that the dentists' conduct violated Sherman Act § 1, implicitly rejecting the Output–Welfare Fallacy.[142] Moreover, this category is broader than naked limitations on information flows—tying, for example, can create an information asymmetry, as recognized by the Court in *Jefferson Parish*.[143]

Firms can also exploit existing information asymmetries via deceptive or misleading conduct. In the same vein, the success of a tying strategy may depend on consumers' lack of information.[144] Conduct that exploits an information asymmetry can increase consumer demand—and therefore output—while simultaneously harming those very consumers.[145] The history of U.S. antitrust enforcement is replete with examples of anticompetitive deception and misleading conduct.[146] As early as 1913, the Supreme Court held that such behavior can fall

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[139] *Id.*

[140] *Id.* at 451.

[141] *Id.* at 451–52. A skeptic might argue that the dentists' conduct decreased "quality-adjusted" output, and thus fits within the outputist framework. But recall that the insurers were at least nominally seeking x-rays in order to reduce prices by inducing patients to consume lowest-cost "adequate" procedures. *Id.* at 449. Many higher-cost procedures were presumably of higher quality. *Id.* at 448. If anything, the dentists' conduct, which was designed to facilitate delivery of higher-cost procedures, likely increased quality-adjusted output.

[142] A unanimous Supreme Court agreed with the Commission. *Id.* at 453.

[143] Justice Stevens observed that tying arrangements might impair consumers' "freedom to select the best bargain in the second market" because of "an inability to evaluate the true cost of either product when they are available only as a package." Jefferson Par. Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 15 (1984), *abrogated by* Ill. Tool Works, Inc. v. Indep. Ink, Inc., 547 U.S. 28 (2006). This is especially likely in markets that exhibit substantial pre-existing information asymmetries. *Jefferson Parish*, 466 U.S. at 15 n.24 ("Especially where market imperfections exist, purchasers may not be fully sensitive to the price or quality implications of a tying arrangement, and hence it may impede competition on the merits."). Stevens's reasoning on this point is admittedly somewhat fuzzy, as he later emphasized that the power created by a favorable information asymmetry is distinct from antitrust-relevant market power. *Id.* at 27. Perhaps his earlier statement is best understood as being directed at harm, rather than power.

[144] Indeed, a tying strategy may *depend* on a lack of information. *See, e.g.*, Eastman Kodak Co. v. Image Tech. Servs., Inc., 504 U.S. 451, 473–76 (1992).

[145] *E.g.*, Mark R. Patterson, *Coercion, Deception, and Other Demand-Increasing Practices in Antitrust Law*, 66 ANTITRUST L.J. 1, 5 (1997) ("[D]eception exploit[s] consumers . . . by increasing consumers' demand for their products . . . through providing them with false information . . . ."). Along with Crane, *supra* note 23, Patterson's article stands as one of very few exceptions to the outputist orthodoxy. It is, however, generally limited to coercion and deception, with correspondingly narrow prescriptions.

[146] Of course, some deceptive or misleading conduct may have the net effect of decreasing both output *and* welfare. This may have been true of the conduct at issue in *In re* Intel Corp., 150 F.T.C. 420, 422–27 (2010), 2020 WL 9549985. According to the FTC, Intel engaged in a multifaceted campaign aimed at deceiving customers into believing that Intel's processors were faster than its rivals' processors. To the extent that Intel's strategy allowed it to charge a higher price than would have prevailed absent its conduct, overall market output may have been lower as a result—but this would not necessarily be the case. The deception could have stimulated more customer purchases than would have otherwise occurred. *See* John M. Newman, *Anticompetitive Product Design in the New Economy*, 39 FLA. ST. U. L. REV. 681, 723–25 (2012).

within the scope of the Sherman Act.[147] The D.C. Circuit's seminal *Microsoft III* decision held that Microsoft's deceptive conduct vis-à-vis app developers violated the Sherman Act.[148] Here again, the Output–Welfare Fallacy fails to describe both real-world dynamics and substantial portions of contemporary antitrust doctrine.

Alternatively, firms can act to *alleviate* or *prevent* the exploitation of information asymmetries. Such conduct may reduce output, yet may also increase consumer welfare. The Supreme Court's *California Dental* decision, for example, involved a horizontal agreement among dentists to limit deception and misleading conduct.[149] The Court explained that such an agreement "could have different effects from those 'normally' found in the commercial world, even to the point of promoting competition."[150] As a result, the Court held that the challenged restraint deserved full rule-of-reason analysis.[151]

Mandatory-disclosure rules can have similar effects. Standard-setting organizations, for example, often agree to mandate disclosure of relevant information.[152] Where consumers are unaware of health or safety risks of a product, output of that product will likely be higher—and welfare lower—than in a world of perfect information.[153] An agreement to disclose relevant information can thus reduce output but increase welfare. The outputist framework would presumably condemn such conduct on the basis of that it lowered output. Yet standard-setting activity generally receives lenient treatment.[154] Yet again, the Output–Welfare Fallacy fails to reflect not only real-world dynamics, but also important parts of existing antitrust doctrine and practice.

2. Externalizing Costs

By externalizing costs, market participants can sometimes increase output while reducing consumer welfare. The costs of production, trading, and consumption are not always borne by manufacturers and consumers. "Externalities," or spillover effects, arise in a variety of marketplace settings. They can be positive. A classic example, widely recognized in antitrust law and economics, involves retailer promotional activities.[155] Such efforts can create a positive externality, upon which a second retailer across the street may be able to free ride.[156]

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[147] *See* Nash v. United States, 229 U.S. 373, 374–75 (1913); *see also* Stucke, *supra* note 135, at 1083.

[148] United States v. Microsoft Corp., 253 F.3d 34, 45–46, 74–75 (D.C. Cir. 2001) (condemning Microsoft's deception of developers regarding the attributes of its "Java Virtual Machine").

[149] Cal. Dental Ass'n v. FTC, 526 U.S. 756, 760 (1999).

[150] *Id.* at 773.

[151] *Id.* at 774–81.

[152] David A. Balto, Former Assistant Dir. of Pol'y & Evaluation, Fed. Trade Comm'n, Speech at the Cutting Edge Antitrust Law Seminars International: Standard Setting in the New Economy (Feb. 17, 2000), https://www.ftc.gov/es/public-statements/2000/02/standard-setting-network-economy [https://perma.cc/AVC9-L28M].

[153] *See supra* notes136–37 and accompanying text.

[154] Herbert Hovenkamp, *Are Regulatory Agreements to Address Climate Change Anticompetitive?*, REGUL. REV. (Sept. 11, 2019), https://www.theregreview.org/2019/09/11/hovenkamp-are-regulatory-agreements-to-address-climate-change-anticompetitive [https://perma.cc/P5S7-LXQW].

[155] *See, e.g.*, Leegin Creative Leather Prods., Inc. v. PSKS, Inc., 551 U.S. 877, 901–02 (2007).

[156] *Id.* at 903–04.

Externalities can also be negative, as antitrust courts have also recognized.[157] Whenever firms are able to externalize the costs of doing business—or where consumers can externalize the costs of consumption—output of the relevant product will likely increase.[158] This can, of course, be allocatively inefficient and harmful to societal welfare.[159] But consumer welfare can also decrease. Negative externalities, when imposed selectively, can increase demand and output of a relevant product.[160] Yet all consumers, including those of the relevant product, may be left worse off.

Credit-card networks offer a ready example. Networks commonly offer cardholders "rewards" perks in the form of travel discounts, cash back, etc.[161] But those rewards are not costless. Credit cards are costly for merchants to accept, and rewards cards are often the most costly of all.[162] Many merchants would naturally prefer to pass those costs on to the relatively wealthy customers who trigger them.[163] But contractual restraints imposed by card networks prevent merchants from doing so.[164] As a result, merchants must pass on their increased costs via higher across-the-board retail prices.[165] Thus, card networks and cardholder–consumers are able to externalize some costs onto other consumers.[166] This arrangement increases demand for card usage,[167] while leaving non-cardholders unambiguously worse off.

Even the cardholders who receive rewards may be worse off. Card networks do not pass through 100% of their supracompetitive profits to cardholders.[168] Thus, rewards programs can

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[157] *See, e.g.*, Ohio v. Am. Express Co., 138 S. Ct. 2274, 2288–89 (2018). Justice Thomas's opinion also went on to declare that AmEx's restraints actually alleviated a negative externality. *Id.* at 2889. They did not. *See* John M. Newman, *Procompetitive Justifications in Antitrust Law,* 94 IND. L. J. 501, 543–44 n.321 (2019). The supposed "negative externality" Justice Thomas had in mind was nothing of the sort. Moreover, Justice Thomas cited as fact a portion of the trial court's opinion that actually described one of the defendant's *arguments*—an argument that the trial court rejected as factually unsupported. *Am. Express Co.*, 138 S. Ct. at 2289; *see also* John Newman, Ohio v. American Express*: The Good, the Bad, and the Ugly*, CONCURRENTIALISTE: J. ANTITRUST L. (July 16, 2018), https://leconcurrentialiste.com/ohio-v-amex [https://perma.cc/LEQ2-KSNV].

[158] *E.g.*, RICHARD A. POSNER & FRANK H. EASTERBROOK, ANTITRUST CASES, ECONOMIC NOTES, AND OTHER MATERIALS 176 (2d ed. 1981); Jeffrey L. Harrison, *Other Markets, Other Costs: Modernizing Antitrust*, 27 U. FLA. J.L. & PUB. POL'Y 373, 385–86 (2016).

[159] Harrison, *supra* note 157, at 386–87.

[160] Matthew G. Nagler, *The Strategic Significance of Negative Externalities*, 35 MANAGERIAL & DECISION ECON. 247, 248 (2014).

[161] *See, e.g.*, United States v. Am. Express Co., 88 F. Supp. 3d 143, 156 (E.D.N.Y. 2015), *rev'd*, 838 F.3d 179 (2d Cir. 2016).

[162] *United States v. Am. Express Co*., 88 F. Supp. 3d at 158.

[163] *Id.* at 216.

[164] *Id.*

[165] *Id.*

[166] *Id.* at 216–17.

[167] *See* Matthew G. Nagler, *Negative Externalities, Competition and Consumer Choice*, 59 J. INDUS. ECON. 396, 396–97 (2011) (finding that SUVs and trucks impose this type of externality and that demand for them is positively responsive to it).

[168] United States v. Am. Express Co., 88 F. Supp. 3d 143, 215 (E.D.N.Y. 2015) ("Amex's . . . price increases were not wholly offset by additional rewards expenditures or otherwise passed through to cardholders").

impose a prisoners' dilemma. If no consumers "defect" by beginning to use rewards cards, all will enjoy lower retail prices. At the same time, individual consumers are incentivized to defect, in order to receive rewards. Costly credit cards thereby function as "combatant goods": they minimize the harm to users, while increasing harm on non-users.[169] Yet once everyone defects, all must pay higher prices—and again, the fact that networks retain a portion means that the rewards paid out will not necessarily fully offset the price increases. Especially in markets where fewer non-cardholder customers are available to subsidize rewards points, even cardholders can suffer.[170] Once again, output may increase while consumer welfare—whether defined broadly or narrowly—decreases.

It follows, then, that *alleviating* a negative externality can reduce output of a relevant product yet increase consumer welfare.[171] For example, in 2019, a subset of automakers agreed amongst themselves and with the state of California to meet that state's relatively lofty emissions-reduction targets across all of their vehicles sold in the United States.[172] Such agreements can be welfare-enhancing.[173] Yet, at the same time, the automakers' agreement had the potential to reduce output of the participants' products. Meeting stricter environmental regulations can require R&D expenditures and/or increase the marginal costs of production, either of which might translate into higher prices and lower demand.[174] Outputism identifies conduct that reduces output as the primary—indeed, the only—legitimate target of antitrust law. Yet "stem[ming] negative externalities" is often said to be procompetitive.[175] And although the Antitrust Division opened an investigation into the automakers' agreement, it was subsequently closed without any action being taken.[176] Here again, outputism does not appear to reflect important parts of contemporary antitrust doctrine and practice.

3. Coercion

[169] *See* Nagler, *supra* note 166, at 396–97 (offering SUVs as an example of this dynamic).

[170] *See, e.g.*, *id.* at 398 (labeling this the "'if-you-can't-beat-'em-join-'em' . . . effect").

[171] For a thorough discussion, see OECD, POLICY ROUNDTABLES: HORIZONTAL AGREEMENTS IN THE ENVIRONMENTAL CONTEXT (2010), http://www.oecd.org/competition/cartels/49139867.pdf [https://perma.cc/R783-LEY2].

[172] The involvement of the State of California would likely raise *Noerr* issues in any antitrust litigation involving these or similar facts. The author thanks Spencer Weber Waller for this insight.

[173] They can enhance social welfare or, under the right circumstances, welfare of consumers of the relevant product. Those circumstances may admittedly be rare, and public action is generally preferable to private-cartel action. *See* Maarten Pieter Schinkel & Lukáš Tóth, Compensatory Public Good Provision by a Private Cartel 30–31 (Mar. 2020) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3509062 [https://perma.cc/TZS9-K268?type=image]. But in a given antitrust case, the judge does not have the liberty of selecting between public regulation or regulation-by-cartel. Instead, the question is whether to condemn the challenged conduct.

[174] Hovenkamp, *supra* note 155.

[175] Ohio v. Am. Express Co., 138 S. Ct. 2274, 2289 (2018).

[176] Coral Davenport, *Justice Department Drops Antitrust Probe Against Automakers That Sided with California on Emissions*, N.Y. TIMES (Feb. 7, 2020), https://www.nytimes.com/2020/02/07/climate/trump-california-automakers-antitrust.html [https://perma.cc/WH2V-FR7M].

Multiple marketplace strategies can be thought of as "coercive." These run the gamut from contractual tying,[177] to designing a product so as to foreclose interoperability with rivals' complementary products (so-called "technological tying"),[178] to more subtly guiding individuals toward desired behaviors,[179] to issuing outright threats.[180] Each of these strategies can have the purpose and effect of increasing output.[181] Yet each can harm consumers.

As to contractual tying, courts and scholars have long recognized that using power over one product (the "tying" product) to coerce purchases of another (the "tied" product) can be anticompetitive.[182] Such strategies rather obviously have the purpose and effect of increasing output of the seller's tied product. To the extent that tying forces purchases of the tied product that would not have otherwise occurred—i.e., buyers would not have purchased the tied product even from a rival absent the coercive tie—marketwide tied-product output will increase. Nonetheless, contractual tying can be harmful.[183]

Technological tying and outright threats can have similar effects. The seminal *Microsoft* case involved, in part, a technological tie-in.[184] Microsoft engaged in a variety of product-design practices that functionally linked its Windows operating system ("OS") to its Internet Explorer web browser.[185] By causing some consumers to receive web browsers who would otherwise not have used *any* browser, Microsoft's conduct almost certainly increased output of the tied product.[186] Nonetheless, as the D.C. Circuit recognized, most of Microsoft's design-related conduct was harmful.[187] As to outright threats, Patterson points to an episode in which Moody's threatened to publicize an unsolicited negative rating of a bond issuer's creditworthiness if the issuer did not buy credit ratings from Moody's.[188] That example did not yield actual antitrust litigation, but here again, *Microsoft* is instructive—the D.C. Circuit's opinion condemned a

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[177] IX AREEDA & HOVENKAMP, *supra* note 103, at 3 ("This chapter examines 'tying' (or 'tie-in') arrangements by which a seller of one product 'forces' customers to take a second product as well . . . .").

[178] *See* Newman, *supra* note 145, at 683.

[179] *See* Gregory Day & Abbey Stemler, *Are Dark Patterns Anticompetitive?*, 72 ALA. L. REV. 1, 2 (2020).

[180] *See generally* Einer Elhauge, *Contrived Threats Versus Uncontrived Warnings: A General Solution to the Puzzles of Contractual Duress, Unconstitutional Conditions, and Blackmail*, 83 U. CHI. L. REV. 503 (2016) (discussing the difference between a coercive "threat" and a mere "warning.").

[181] The foundational work in this area is Patterson's excellent and thorough treatment. *See e.g.,* Patterson, *supra* note 144, at 5 ("develop[ing] an antitrust approach to evaluating practices, like coercion and deception, by which sellers seek to increase demand for their products").

[182] *See, e.g.*, Times-Picayune Publ'g Co. v. U.S., 345 U.S. 594, 614 (1953); IX AREEDA & HOVENKAMP, *supra* note 103, at ¶ 1700.

[183] *See generally* Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 397 (2009) (describing the harm of contractual tying to consumers and the general welfare). For a time, many antitrust theorists were of the opinion that tying could not create anticompetitive effects. *Id.* at 399–400. Their arguments were based on the "single monopoly profit" theory, according to which tying was supposed to be an irrational way to exercise market power. *Id.* But subsequent theoretical work demonstrates that the single-monopoly-profit theory holds only under a single set of highly unrealistic assumptions, and that tying can certainly harm both consumer and total welfare. *Id.* at 400–01.

[184] United States v. Microsoft Corp., 253 F.3d 34, 85 (D.C. Cir. 2001) (noting "Microsoft . . . bound Windows and IE" but argued the two "are not 'separate products'").

[185] *Id.* at 45.

[186] *See id.* at 51.

[187] *Id.* at 74.

[188] Patterson, *supra* note 144, at 1–4.

threat by Microsoft as anticompetitive.[189] This is yet another instance in which outputism fails to reflect actual antitrust doctrine.

4. Intrabrand Vertical Restraints

Intrabrand vertical restraints can increase output, yet reduce consumer welfare. This category of conduct includes exclusive-territory agreements, resale-price maintenance agreements, and similar arrangements. The consensus view is that such agreements either increase output and welfare or (rarely) decrease output and welfare. But intrabrand vertical restraints can actually increase output while reducing welfare, or vice versa.[190]

Bork used the output-equals-welfare proposition to conclude that intrabrand vertical restraints must be procompetitive. His primary assumption was that manufacturers will enter into such agreements only if the restraints increase sales.[191] To Bork, both manufacturers and consumers want retailers to undertake various demand-increasing promotional activities and services (e.g., training a knowledgeable sales staff or maintaining a clean showroom floor).[192] Absent vertical restraints, he argued, promotional retail activities and services can be subject to free-riding by rival dealers.[193] Thus, the purpose of such restraints "must be to increase efficiency."[194] As a result, Bork argued that vertical intrabrand restraints should become *per se* legal.[195] Other Chicagoans, including Posner and Easterbrook, reached the same conclusion.[196] The law of vertical restraints today largely reflects, in both tone and substance, the prescriptions urged by Bork, Posner, and their intellectual brethren.[197]

But the Chicagoan position ignored the possibility—indeed, the reality—that consumers are not all identical. Different consumers attach different levels of importance to various dealer promotions and services. An expert customer, for example, often derives little or no value from a retailer's knowledgeable sales staff. Wherever any such differences exist, the supposed link

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[189] One of Microsoft's anticompetitive practices consisted of pressuring Intel to stop developing a Windows-compatible "Java Virtual Machine," a technology Microsoft believed could erode its power in the PC operating-systems market. *Microsoft Corp.*, 253 F.3d. at 74. As the D.C. Circuit put it, "Microsoft threatened Intel that if it did not stop . . . , then Microsoft would refuse to distribute Intel technologies bundled with Windows." *Id.* at 77.

[190] The author thanks Steve Salop for flagging this issue.

[191] Bork, *supra* note 17, at 403. Relying on the single monopoly profit theory, Bork extended his argument to include sellers with monopoly power. *Id.*

[192] *Id.* at 438–39, 438–39 n.135.

[193] *Id.* at 382.

[194] *Id.* at 404.

[195] *Id.* at 397 ("The thesis advanced here is that every vertical arrangement should be lawful."); *see also* Robert H. Bork, *Vertical Restraints:* Schwinn *Overruled*, 1977 SUP. CT. REV. 171, 173 ("There are no distinctions to be made among [vertical restraints]. They should be either all illegal *per se* or all unqualifiedly lawful.").

[196] *See* D. Daniel Sokol, *The Transformation of Vertical Restraints: Per Se Illegality, the Rule of Reason, and Per Se Legality*, 79 ANTITRUST L.J. 1003, 1004 n.6 (2014); POSNER, *supra* note 78, at __; Frank H. Easterbrook, *Vertical Arrangements and the Rule of Reason*, 53 ANTITRUST L.J. 135, 135 (1984) ("No practice a manufacturer uses to distribute its products should be a subject of serious antitrust attention.").

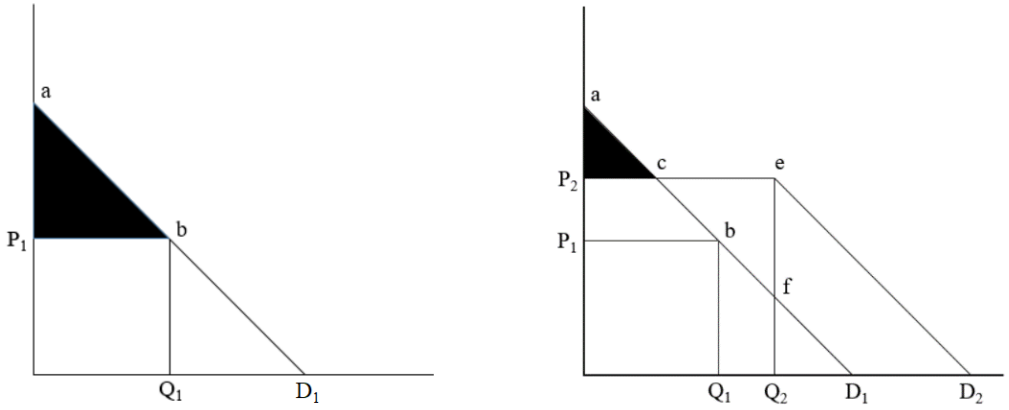
[197] Sokol, *supra* note 195, at 1005 ("For several types of vertical restraints, the rule of reason has in practice meant near per se legality . . . .").

between output and consumer welfare is broken.[198] Manufacturers make decisions based on how marginal consumers will respond—yet a restraint's welfare effects are felt by all consumers.[199] Add-on services are intended to attract marginal consumers, but typically result in higher prices to all consumers. Inframarginal consumers will keep buying at the higher price, so the restraint leaves them worse off.[200]

These consumer-welfare losses are depicted in Figure 1, below. On the left is a market with a monopolist manufacturer and competitive distribution. Absent a vertical restraint, the demand curve is D_1, the manufacturer produces quantity Q_1 and sells at price P_1.[201] Consumer surplus is the area within triangle aP_1b.

Suppose there are two groups of consumers: those who would value add-on services ("marginal") and those who would not ("inframarginal"). On the right of Figure 1, the inframarginal customers are arrayed along *ac*. The add-on dealer services cause the marginal customers arrayed along *cf* to value the product at a level equal to P_2. At the same time, the add-on services shift demand fD_1 from the original demand curve in parallel to eD_2. The new demand curve is $aceD_2$. Price is set at P_2, resulting in output of Q_2. The restraint increases output while simultaneously lowering consumer surplus, which now consists of aP_2c.

Figure 1.



This effect can occur whenever add-on services offer less value to inframarginal consumers than to marginal consumers—as is very often the case. The various services Bork and others envisioned mostly entail providing information to consumers. Such information may be valuable to marginal consumers. But it is worth very little to most inframarginal consumers, who already

[198] William S. Comanor, *The Two Economics of Vertical Restraints*, 5 REV. INDUS. ORG. 99, 107 (1990); *see also* William S. Comanor & John B. Kirkwood, *Resale Price Maintenance and Antitrust Policy*, 3 CONTEMP. POL'Y ISSUES 9, 12 n.5 (1985) ("Bork and Posner too readily convert a result in positive economics—that RPM increases dealer services and output—into a conclusion in normative economics—that efficiency is improved.").

[199] Comanor & Kirkwood, *supra* note 197, at 12–13.

[200] This implicitly assumes that the relevant market is not perfectly competitive due to some degree of product differentiation and/or market power.

[201] For ease of explication, marginal revenue and marginal cost curves are omitted. Comanor offers a fuller diagrammatic depiction, albeit at some cost to readability for a general audience. William S. Comanor, *Vertical Price-Fixing, Vertical Market Restrictions, and the New Antitrust Policy*, 98 HARV. L. REV. 983, 993, 996 (1985).

highly value the product.[202] Relatedly, the more established the product is in the marketplace, the more likely it is that the harm to inframarginal consumers will outweigh the benefits to marginal consumers.[203] This can hold true even if the restraint is (also) being used to combat free riding.[204] In sum, "a tendency towards welfare reductions seems more likely than the opposite."[205]

5. Price Predation, With or Without Recoupment

Predatory pricing can increase output, yet reduce welfare. Throughout nearly all of antitrust history, predatory pricing has been identified as a means of excluding rivals and suppressing competition.[206] The contemporary legal standard, however, is of more recent vintage. In its 1993 *Brooke Group* opinion, the U.S. Supreme Court identified two elements required for a violation.[207] First, plaintiffs must prove that the defendant set prices below its own internal costs during a "predation period."[208] Second, plaintiffs must prove that the defendant has already recouped, or is likely to recoup, all of its losses via supracompetitive prices during a "recoupment" period.[209] The *Brooke Group* Court's rationale for imposing this two-pronged standard was that absent total recoupment, "predatory pricing produces lower aggregate prices in the market, and consumer welfare is enhanced."[210]

But this elides the fact that predatory pricing can affect two different groups of consumers. The *Brooke Group* narrative imagines below-cost pricing in a single relevant market, to be followed by recoupment via supracompetitive pricing of that same product in that same market—hence its singular reference to "the market."[211] As Leslie points out, however, predatory-pricing strategies can also succeed via higher prices in a different market.[212] Indeed, that type of recoupment was likely happening on the facts of *Brooke Group*, a possibility the Court failed to grasp.[213]

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[202] *Id.* at 999.

[203] *Id.*

[204] *See* SULLIVAN ET AL., *supra* note 5, at 461.

[205] FREDERIC M. SCHERER & DAVID R. ROSS, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 548 (3d ed. 1990); Comanor, *supra* note 197, at 107. Bork, Posner, and Easterbrook mistakenly believed that such restraints can be harmful only by facilitating horizontal collusion at the manufacturer or retail level. *See, e.g.*, Easterbrook, *supra* note 195, at 141 ("The argument must be that restricted dealing can facilitate a real cartel . . . ."). But vertical intrabrand restraints can be exclusionary. By raising rivals' distribution costs, they can reduce the incentive and ability of new firms to enter, and of existing firms to compete. *See* Krattenmaker & Salop, *supra* note 24, at 234–38.

[206] *See, e.g.*, Standard Oil Co. of N.J. v. United States, 221 U.S. 1, 7–8, 42–43 (1911) (discussing Standard Oil's monopolistic behavior in the oil market amidst the history of monopolistic trade practices); *see also* Christopher R. Leslie, *Revisiting the Revisionist History of* Standard Oil, 85 S. CAL. L. REV. 573, 573, 575 n.10 (2012) ("The Supreme Court condemned a range of conduct by Standard Oil as anticompetitive, including predatory pricing").

[207] Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 222–27 (1993).

[208] *Id.* at 22–24; *see, e.g.*, C. Scott Hemphill, Note, *The Role of Recoupment in Predatory Pricing Analyses*, 53 STAN. L. REV. 1581, 1591 (2001).

[209] *Brooke Grp. Ltd.*, 509 U.S. at 224.

[210] *Id.*

[211] *Id.*

[212] Christopher R. Leslie, *Predatory Pricing and Recoupment*, 113 COLUM. L. REV. 1695, 1720–31 (2013).

[213] *Id.* at 1723–25.

Predatory low prices in one market may increase output in that market. But recoupment via supracompetitive pricing in a different market harms consumers in the different market. In other words, output of Product *A* may increase, but consumers of Product *B* suffer the consequences. In *Brooke Group*, for example, the defendants were setting low prices for generic cigarettes in an effort to prop up long-run prices for branded cigarettes.[214] Smokers of branded cigarettes suffered the consequences. This dynamic will hold even if recoupment is less-than-total. Consumers in the second market do not enjoy any benefits during the predation period, so their welfare is unambiguously reduced by any supracompetitive pricing, no matter how abortive or unsuccessful the overall predation strategy might be.

Consumers of the low-price product may benefit. But that does not negate the harm. For one thing, effects generated by anticompetitive conduct generally do not count in defendants' favor.[215] Moreover, there is no practicable way to calculate whether "net" consumer welfare has increased.[216] Nor, for that matter, whether "net" output has gone up or down. Suppose a predatory-pricing scheme were to increase sales of apples by 50 units but decrease sales of oranges by 40 units. One might be tempted to say that net output has increased by 10 units, but the flaws in that conclusion are obvious. The comparison is, both literally and figuratively, apples-to-oranges. The values are incommensurable.[217]

6. First-Degree Price Discrimination

Price discrimination can be defined roughly as "charging different prices to different consumers for the identical item."[218] Price discrimination is prominent in antitrust doctrine and discourse in two ways: (1) it is the subject of an express congressional prohibition, and (2) it is

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[214] *Id.*

[215] *Cf., e.g.*, U.S. DEP'T JUST. & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES 31 (2010), https://www.justice.gov/sites/default/files/atr/legacy/2010/08/19/hmg-2010.pdf [https://perma.cc/2APC-7QQD] ("Other efficiencies, such as those relating to research and development, are potentially substantial but . . . may be the result of anticompetitive output reductions.").

[216] Williamson points to yet another potential way that predatory pricing can increase output while harming consumers, even absent any recoupment at all. Consumers may—and often will—lack perfect information about the reason for and likely duration of a price cut. Oliver E. Williamson, *Predatory Pricing: A Strategic and Welfare Analysis*, 87 YALE L.J. 284, 290–91 (1977). If buyers believe a relative price cut for a given product will last, they may incur fixed costs in adapting to purchase (or purchase more of) that product. *Id.* The predatory prices will likely cause output of the relevant product to increase. Yet predatory price-cutting is, by its nature, temporary. Even if prices return only to a competitive level, consumers who incurred fixed costs in reliance on the predatory price level can be harmed. *Id.* at 291.

[217] *See generally* Rebecca Haw Allensworth, *The Commensurability Myth in Antitrust*, 69 VAND. L. REV. 1 (2016) (identifying incommensurability issues that can arise in a variety of antitrust contexts). One might be tempted to convert the apples and oranges to dollars, then compare the two—price-as-output, essentially. But the analysis is ultimately supposed to be concerned with welfare. The outputist framework does not purport to actually quantify welfare effects. If apples yield more welfare per unit than oranges (or vice versa), the analyst is left back where she started. This is presumably why most outputist positions are self-limited to directional analysis of single-product effects—"increasing sales of Product *A* is good, decreasing sales of Product *A* is bad"—rather than comparisons involving different products.

[218] Dennis W. Carlton & Mark Israel, *Should Competition Policy Prohibit Price Discrimination?*, HANDBOOK COMPETITION ECON. 10, 10 (2009). In economics, though not (always) in law, it is more properly understood as differential price-to-cost ratios across different customers for the same product.

often invoked as a benign explanation for tying arrangements.[219] Congress explicitly prohibited price discrimination in the Robinson–Patman Act of 1936, and federal agencies once actively enforced the Act's various provisions.[220] Today, however, the orthodox position is that nearly all price discrimination is beneficial or neutral. Federal antitrust agencies stopped enforcing Robinson–Patman.[221] Some commentators also point to price discrimination as a procompetitive justification for (some) tying arrangements.[222]

That shift was prompted not by new congressional guidance or judicial authority, but by Chicagoan economic theory.[223] In particular, it was partly an outgrowth of the assumption that price discrimination is output-increasing, and that output-increasing conduct is *ipso facto* efficient and desirable. That assumption relies on supracompetitive price and output levels being the alternative to price discrimination, an assumption that we will revisit shortly.[224] For now, let us focus on a different issue.

A monopolist capable of perfect price discrimination is generally assumed to face two options: (1) set a single price and reduce output to the monopoly level, or (2) set a range of prices to different customers. The equilibria yielded by these two options are depicted in Figure 2, below.

Figure 2.

[219] *See infra* notes 221–22.

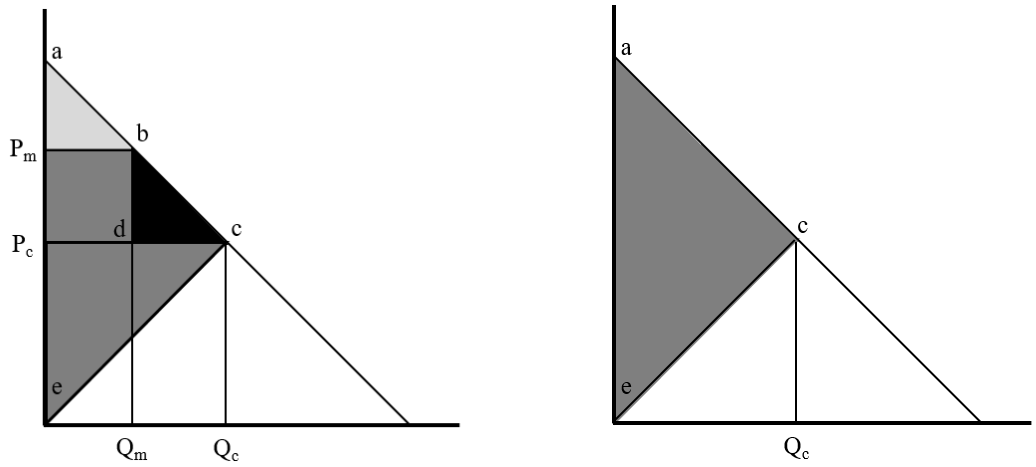
[220] *See infra* note 222.

[221] Since 2000, the sole agency action relating to price-discrimination litigation has been an FTC amicus brief urging the Seventh Circuit to dismiss a private plaintiff's claim. *See generally* Brief of Amicus Curiae the Federal Trade Comm'n in Support of Defendants and Reversal, Woodman's Food Mkt., Inc. v. Clorox Co., 833 F.3d 743 (7th Cir. 2016) (No. 14-cv-00734-slc) (supporting reversal of motion to dismiss in Robinson–Patman case).

[222] Grimes notes this school of thought, while going on to critique it. Warren S. Grimes, *Tying: Requirements Ties, Efficiency and Innovation*, DEP'T OF JUST. & FED. TRADE COMM'N (Nov. 20, 2006), https://www.justice.gov/sites/default/files/atr/legacy/2007/01/04/219982.pdf [https://perma.cc/JY88-DUHK] ("Perfect price discrimination could result in higher output and, in this sense, be procompetitive.").

[223] *See* DIRECTORATE FOR FIN. AND ENTER. AFFS.: COMPETITION COMM. & OECD, ROUNDTABLE ON "PRICE DISCRIMINATION": NOTE BY THE UNITED STATES 6 (2016) https://www.justice.gov/atr/case-document/file/979211/download [https://perma.cc/UP88-PG6H] ("Though the Robinson[–]Patman Act once was a mainstay of U.S. enforcement, a shift in emphasis based on economic analysis resulted in a significant reduction in enforcement actions brought by the Agencies under the Robinson[–]Patman Act.").

[224] *See infra* Part III.C.1.



Perfect monopoly is depicted on the left. Output (Q_m) is lower than it would be under competitive conditions. Price (P_m) is higher. Consumer surplus comprises the area within triangle abP_m. Producer surplus comprises both square P_mbdP_c and triangle P_cce.[225] Triangle *bcd* comprises a deadweight loss. First-degree, or "perfect," price discrimination is depicted on the right. Output (Q_c) is higher than under monopoly conditions (Q_m). The deadweight loss disappears. But the producer has captured all of the consumer surplus ("welfare") within triangle *ace*.[226] Even relative to monopoly price and output levels—even if the orthodox benchmark were always correct, which it is not[227]—such price discrimination reduces consumer welfare.[228]

7. Cognitive Exploitation

By exploiting the nature of human cognition, firms can increase output while reducing consumer welfare.[229] By preventing such exploitation, firms can simultaneously *decrease* output and *increase* welfare. One frequent example of cognitive exploitation is over-selling and its corollary, overconsumption.[230] A restraint of trade can limit overconsumption, thereby lowering output yet leaving consumers better off. The U.S. Supreme Court recognized this as a potentially

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[225] As Grimes explains, "Most, perhaps all, of the seller's increased revenue from a requirements tie will be in the form of a wealth transfer loss to buyers." Grimes, *supra* note 221.

[226] *See* Einer Elhauge & Barry Nalebuff, *The Welfare Effects of Metering Ties*, 33 J.L. ECON. & ORG. 68, 72 (2016) ("Perfect (or first-degree) price discrimination charges each buyer a price for the tying product that precisely equals its valuation of that product. This clearly reduces consumer welfare (by taking all consumer surplus) . . . .").

[227] *See infra* Part III.C.1.

[228] Carlton and Israel emphasize that this result does not necessarily hold when competition is introduced. Carlton & Israel, *supra* note 217, at 13.

[229] For example, one field study involved subjecting actual car buyers to decision fatigue by presenting them with a vast array of options, arranged sequentially so as to require serial decision-making. Jonathan Levav, Mark Heitmann, Andreas Herrmann & Sheena S. Iyengar, *Order in Product Customization Decisions: Evidence from Field Experiments*, 118 J. POL. ECON. 274, 282–96 (2010). Buyers subjected to decision fatigue ultimately spent thousands of dollars more than non-fatigued buyers. *Id.* at 290, 293–95.

[230] One example of overconsumption is addictive products. *See generally, e.g.*, JAMES NIELS ROSENQUIST, FIONA M. SCOTT MORTON & SAMUEL N. WEINSTEIN, ADDICTIVE TECHNOLOGY AND ITS IMPLICATIONS FOR ANTITRUST ENFORCEMENT (2021) (explaining the overconsumption of social media platforms stemming from their addictive qualities).

valid procompetitive justification in its 1999 *California Dental* opinion.[231] As the Court explained, misleading advertisements by medical professionals pose an especially high risk of harm in part because of "[p]atients' attachments to particular professionals, *the rationality of which is difficult to assess* . . . ."[232] In other words, patients' trust in their healthcare providers renders them especially susceptible to unscrupulous providers.[233] Justice Souter, writing for the majority, reasoned that preventing exploitation of that trust can be a cognizable procompetitive justification.[234] This was so despite the obvious likelihood that the challenged restraint decreased output. Here, yet again, the Output–Welfare Fallacy fails to account for a leading antitrust decision.[235]

These are not the only two types of cognitive exploitation that can be relevant to antitrust analysis. Certain types of advertising (e.g., ads for unhealthy food targeted at young children) are designed to increase output, yet harm consumers.[236] Harmful advertising is not a classic antitrust violation,[237] but agreements among rivals to *limit* harmful advertisements can attract—and have attracted—antitrust scrutiny.[238] In such cases, courts and enforcers must decide whether the conduct should be condemned.[239] Perhaps so, perhaps not—but analysis cannot defensibly proceed by simply assuming that because the relevant conduct reduces output, it must harm consumers.[240]

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[231] *See* Cal. Dental Ass'n v. FTC, 526 U.S. 756, 773 (1999) ("The existence of such significant challenges to informed decision[ ]making by the customer for professional services immediately suggests that advertising restrictions arguably protecting patients from misleading or irrelevant advertising call for more than cursory treatment as obviously comparable to classic horizontal agreements to limit output or price competition.").

[232] *Id.* at 772 (emphasis added).

[233] An information asymmetry is often at play in such relationships as well, but the Court's reference to "rationality" suggests a distinct issue relating to human cognition, one that can be salient even in an information-rich environment. *See id.*

[234] *Id.* at 772–75.

[235] For another example of this dynamic, consider educational-accreditation organizations, whose members are often themselves accredited colleges and universities. A decision to deny or withdraw accreditation can reduce output of education. If output reductions really are the supreme evil of antitrust, then such decisions would be uniformly suspect. But such conduct can increase consumer welfare—indeed, the assumption that it does so provides the entire *raison d'être* of accreditation bodies. *See, e.g.*, *Accreditation in the United States*, U.S. DEP'T OF EDUC. (Jul. 29, 2021), https://www2.ed.gov/admins/finaid/accred/accreditation.html [https://perma.cc/HGZ6-D3HT] ("The goal of accreditation is to ensure that institutions of higher education meet acceptable levels of quality."). Courts have been reluctant to condemn denials of accreditation, suggesting that—yet again—outputism fails to account for important parts of actual antitrust doctrine. *See generally, e.g.*, Mass. Sch. of L. at Andover, Inc. v. Am. Bar Ass'n, 846 F. Supp. 374 (E.D. Pa. 1994) (dismissing in part allegations by an unaccredited law school that the ABA's accreditation standards were anticompetitive).

[236] *See* Carlin Sheridan, *United States: Food Advertising and the Rise of Childhood Obesity*, YALE GLOB. HEALTH REV. (Mar. 17, 2016), https://yaleglobalhealthreview.com/2016/03/17/united-states-food-advertising-and-the-rise-of-childhood-obesity [https://perma.cc/7C2Y-CJGQ]. For a comprehensive revisiting of the FTC's ill-fated attempt to limit some ads to children in the 1970s, see generally Luke Herrine, *The Folklore of Unfairness*, 96 N.Y.U.L. REV. 431 (2021) (detailing the struggles of the FTC in defining "unfairness" in consumer markets).

[237] *But see* Ramsi A. Woodcock, *The Obsolescence of Advertising in the Information Age*, 127 YALE L.J. 2270, 2321 (2018) (arguing that persuasive advertising violates the Sherman Act § 2).

[238] *See, e.g.*, United States v. Nat'l Ass'n of Broads., 536 F. Supp. 149, 153 (D.D.C. 1982).

[239] *See, e.g.*, John M. Newman, *Procompetitive Justifications in Antitrust Law*, 94 IND. L.J. 501, 506 (2019).

[240] In its 1999 *CECED* decision, the European Commission was receptive to a procompetitive justification based on protecting consumers from making unwise purchasing decisions. Commission Decision 2000/475, 2000 O.J. (L 187) 47 (EC).

In that case, a group of washing-machine manufacturers agreed to stop producing their cheapest, least-efficient machines. Commission Decision 2000/475, 2000 O.J. (L 187) 47 (EC). The primary justification was that higher-

8. Customer and Consumer Coordination

Downstream coordination can decrease output, yet increase consumer welfare. If a group of consumers gains buying power and demands lower prices, standard economic theory predicts that output will fall.[241] At the same time, the standard assumption is that those consumers' welfare will increase—or else they would not have entered into the agreement in the first place. A consumer cartel will almost certainly increase consumer welfare.[242] The upshot is that, here again, output can decrease while consumer welfare increases.

This is no mere peripheral issue. In every single labor market, for example, employers are the consumers, just as they are the consumers of other inputs like electricity, office spaces, and the like.[243] Thus, an agreement among employers to depress wages will have the decoupled effects described above. Output of a relevant product (labor) will go down, but the employer-consumers' welfare will presumably increase, or else they likely would not have entered the agreement.[244] Should such agreements—and buyer-side agreements more generally—be condemned as output-reducing or praised for increasing consumer welfare?[245] The Fallacy offers no ready answers. In practice, antitrust has often condemned such conduct, sometimes criminally.[246] Yet at the very same time, courts have held that a horizontal wage-fixing

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quality (but more expensive) machines yield enough savings on electricity and water costs that consumers would actually be better off. Commission Decision 2000/475, 2000 O.J. (L 187) 47 (EC).

[241] This is the inverse of the supplier coordination discussed in, e.g., John B. Kirkwood, *Collusion to Control a Powerful Customer: Amazon, E-Books, and Antitrust Policy*, 69 U. MIAMI L. REV. 1, 25 (2014).

[242] Jonathan M. Jacobson, Another Take on the Relevant Welfare Standard for Antitrust, for Chair's Showcase: Rethinking Antitrust Economics for the 21st Century, (Apr. 16, 2015) 8–9. (explaining that a cartel of intermediate customers might indirectly yield less consumer welfare, but will not necessarily do so).

[243] *See, e.g.*, Clarett v. Nat'l Football League, 306 F. Supp. 2d 379, 399 (S.D.N.Y. 2004). Of course, employers usually also produce something else—"widgets"—but widgets are not "reasonable substitutes" for inputs like electricity or labor. *Id.* at 407. Consequently, they constitute different antitrust relevant markets. Effects involving different markets are generally said to be irrelevant to partial-equilibrium analysis. *See* John B. Kirkwood & Robert H. Lande, *The Fundamental Goal of Antitrust: Protecting Consumers, Not Increasing Efficiency*, 84 NOTRE DAME L. REV. 191, 203 (2008).

[244] *See* Gregory Day, *Anticompetitive Employment*, 57 AM. BUS. L.J. 487, 491–93 (2020) (explaining labor cartels' benefit to consumers and thus why antitrust agencies are reluctant to condemn them).

[245] *See, e.g.*, Hovenkamp, *supra* note 46, at 22. Professor Hovenkamp contends that, at least as a general matter, "both consumers and labor are harmed when output is anticompetitively suppressed." This is presumably a reference to consumers of some product other than labor, however—more particularly, consumers of whatever it is that the relevant employer makes and sells. Kirkwood and Lande use the example of natural gas pipelines merging, which eases the tension—pipelines do not consume gas in the same way that a factory consumes inputs like labor or electricity—but that is a fairly unusual context. Kirkwood & Lande, *supra* note 242, at 233–34.

[246] *See, e.g.*, U.S. DEP'T OF JUST. ANTITRUST DIV. & FED. TRADE COMM'N, ANTITRUST GUIDANCE FOR HUMAN RESOURCE PROFESSIONALS 3–4 (2016), https://www.justice.gov/atr/file/903511/download [https://perma.cc/EXG2-LCXT]; Press Release No. 10-1076, U.S. Dep't of Just., Justice Department Requires Six High Tech Companies to Stop Entering into Anticompetitive Employee Solicitation Agreements (Sept. 15, 2014), https://www.justice.gov/opa/pr/justice-department-requires-six-high-tech-companies-stop-entering-anticompetitive-employee [https://perma.cc/E9QB-SAKK]; Peter C. Carstensen, *Buyer Cartels Versus Buying Groups: Legal Distinctions, Competitive Realities, and Antitrust Policy*, 1 WM. & MARY BUS. L. REV. 1, 34 (2010).

agreement may be justified by effects on consumers in a different market.[247] Here again, the supposed coherence and universality of outputist antitrust are revealed to be a mirage.[248]

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A broad array of strategic conduct can cause output and consumer welfare to move in opposite directions. Thus, the Output–Welfare Fallacy rests on a descriptively incorrect foundation; it does not reflect reality across a variety of important settings. Moreover, courts have repeatedly condemned output-enhancing conduct and blessed output-reducing conduct—directly contrary to the prescriptions of outputism. Thus, the Fallacy also fails to describe substantial portions of contemporary doctrine and practice. Even so, the Fallacy continues to pervade antitrust commentary and recently reared its head in a high-stakes Supreme Court opinion. We are left with a modern antitrust paradox: output-reducing conduct is both the supreme evil of antitrust and also frequently treated as procompetitive, while output-enhancing conduct is both antitrust's supreme good and frequently condemned. The primary instrumental argument offered in favor of outputism is that it has "rationalized" all of antitrust into a "coherent," unified whole.[249] But if left to continue its spread, the Output–Welfare Fallacy actually threatens to render broad swaths of antitrust law contradictory.

B. Simultaneous and Conflicting Output and Welfare Effects

Whenever strategic conduct involves two or more products, it can simultaneously put upward and downward pressure on output levels *while also* simultaneously putting upward and downward pressure on welfare. This "Push/Pull" effect poses an even more fundamental problem for outputism—in cases where it is present, the entire Output–Welfare framework simply collapses into incoherence. And again, these are not peripheral examples. To the contrary, the Push/Pull effect can be present in markets for online search, social media, payment networks, college education, and student–athletes' labor, all of which lie at the very center of today's antitrust enforcement efforts and policy debates.

1. "Push/Pull" Effects: Conduct Affecting Multiple Products

Conduct that affects multiple products can increase output of one product while decreasing output of another. Simultaneously, the same conduct can push welfare in opposite, conflicting directions. Effects on the output(s) of different products are incommensurable—one cannot equate

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[247] *See, e.g.*, O'Bannon v. Nat'l Collegiate Athletic Ass'n, 802 F.3d 1049, 1072–73 (9th Cir. 2015).

[248] *See* Kirkwood & Lande, *supra* note 242, at 235 (noting that courts are somewhat divided over how to analyze buy-side market power).

[249] *See, e.g.*, BORK, *supra* note 2, at 50 ("Antitrust policy cannot be made rational until we are able to give a firm answer to one question: What is the point of the law . . . . Only when the issue of goals has been settled is it possible to frame a coherent body of substantive antitrust rules."); Thomas B. Nachbar, *Antitrust and the Politics of State Action*, 60 WM. & MARY L. REV. 1395, 1433 (2019) (describing the "movement with its origins in the Chicago and Harvard Schools" as "one that has generally led to more rationalized antitrust doctrine").

output of apples with output of oranges.[250] And effects on the welfare of consumers of different products are incommensurable and practicably unmeasurable.

To illustrate these dual Push/Pull effects in a familiar context, consider the facts of *Lorain Journal*.[251] In that case, a small-town newspaper controlled the local markets for news (sold to readers) and advertisements (sold to advertisers).[252] To combat the nascent threat of a nearby radio station, the dominant newspaper began refusing to sell advertising space to any customers who bought advertising time from the radio station.[253] Thus, the conduct—which drew an antitrust challenge—was intended to reduce output of advertisements.[254] It presumably left local advertisers worse off, i.e., reduced their welfare. At the same time, however, the conduct tended to create the opposite effects as to readers. Readers, for the most part, do not like advertisements.[255] A reduction of ads tends to leave readers better off and increase sales of news content.

As to such cases, the Output–Welfare Fallacy offers no useful guidance. Again, the Fallacy states that the sole task of antitrust is to analyze whether conduct has increased output (good) or restricted output (bad). Its disjunctive framing neglects the fact that conduct can do both at the same time. Proponents might try to argue that "net" output effects should govern such cases, but it is impossible to compute net output effects as to two different products. Suppose as a baseline that a newspaper sells 10 papers each week with 5 ads per paper. The newspaper engages in anticompetitive conduct that results in 2 fewer ads per paper, but 5 additional papers sold. Has total output decreased by 5 (ads) or increased by 5 (papers)? Both are equally accurate statements. And it is impossible to calculate some sort of net output effect. How many ads does it take to equal one paper, or vice versa? The question is nonsensical. One might as well ask how many apples it takes to equal an orange.[256]

Outputist analysis will tend to yield systematically incorrect outcomes or, at best, squander scarce judicial resources on a fruitless inquiry. Suppose the Supreme Court had fallen for the Output–Welfare Fallacy in *Lorain Journal*. It would have required the plaintiff to prove that the

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[250] *See generally* Allensworth, *supra* note 216 (addressing incommensurable outputs); *see also* Smith v. Pro Football, Inc., 593 F.2d 1173, 1186 (D.C. Cir. 1978) ("The draft is anticompetitive in its effect on the market for players' services . . . . The draft is allegedly 'procompetitive' in its effect on the playing field . . . . Because the draft's 'anticompetitive' and 'procompetitive' effects are not comparable, it is impossible to 'net them out' in the usual rule-of-reason balancing."); *In re* Nat'l Collegiate Athletic Ass'n Athletic Grant-in-Aid Cap Antitrust Litig., 958 F.3d 1239, 1269–70 (9th Cir. 2020) (Smith, J., concurring) ("Jurists faced with weighing the anticompetitive effects in one market with the procompetitive effects in another cannot simply 'net them out' mathematically." (quoting *Smith*, 593 F.2d at 1186)). On the problems inherent to cross-comparisons using price data, see note 218 and accompanying text.

[251] Lorain Journal Co. v. United States, 342 U.S. 143, 145–49 (1951).

[252] *Id.* at 147.

[253] *Id.* at 148–49.

[254] *Id.*

[255] *Cf.* Kimberlee Morrison, *Consumers Don't Like and Don't Trust Digital Advertising*, ADWEEK (May 5, 2017), https://www.adweek.com/digital/consumers-dont-like-and-dont-trust-digital-advertising-infographic [https://perma.cc/W275-GT5E] (stating that online consumers prefer websites with less or no advertisements); Jon Gitlin, *74% of People Are Tired of Social Media Ads—But They're Effective*, SURVEYMONKEY (last updated Sept. 14, 2021), https://www.surveymonkey.com/curiosity/74-of-people-are-tired-of-social-media-ads-but-theyre-effective [https://perma.cc/376P-2JSQ] ("Nearly 3 out of every 4 users (74%) think there are too many ads.[ ]The number grows to 78% for adults 35+ years old.").

[256] As to the problems inherent in any attempt to do so by using price data, see note 166 and accompanying text. For examples of judges identifying the impossibility of the task, see note 249 and accompanying text.

defendant's conduct reduced output. Demanding proof of a net output reduction—an impossibility—would have meant dismissing a meritorious case, allowing harmful conduct to go unremedied. Alternatively, the Court could have accepted proof of reduced output of advertisements, then shifted the burden to the defendant to prove that its conduct actually increased output. The defendant likely could have done so via proof that printing fewer ads made its papers more attractive to readers. The Court would have been left right where it started, having wasted substantial judicial and litigant resources on an analytical snipe hunt. Fortunately, the *Lorain Journal* Court avoided this trap.[257] When that case was decided in 1951, outputism had not yet begun to take hold. Not all subsequent courts have fared so well.[258]

As this example illustrates, outputism can force judges and enforcers to ask the wrong questions. In cases like these, both the output reduction *and* the demand increase resulted from anticompetitive conduct. No trade-off is required, for there is nothing to "trade off."[259]

2. Application: Online Search, Social Media, and More

Push/Pull effects are of much more than academic interest. This dynamic can be present in a wide variety of multiproduct settings, and it will always be present in barter markets. Online search, social networks, college education and student–athlete labor, a variety of broadcast and digital content—all of these are commonly exchanged via barter transactions.[260] They are also at the center of high-profile contemporary antitrust litigation and policy debates.

Attention markets, for example, commonly involve barter exchanges. Humans produce attention, which we can trade to intermediaries in exchange for products like online search and social media, broadcast content, mapping applications, email services, news, entertainment, and more.[261] The exchange takes the form of product-for-product instead of the more familiar money-for-product. As to general search services, for example, users trade their attention (a product) to firms like Google.[262] In exchange, firms deliver search results (another product) to users.[263] The firms then convert the attention to cash by selling it to advertisers, who ultimately consume it.[264]

Because attention markets necessarily involve two products, they can and often will exhibit Push/Pull effects. Suppose all three general-search providers were to agree with one another to carry fewer advertisements. The agreement would obviously reduce output vis-à-vis

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[257] *See generally Lorain Journal*, 342 U.S. (recognizing traits of a monopoly without undertaking this circular analysis).

[258] *See infra* Part IV.A (discussing the *AmEx* Court's errors).

[259] *Cf.* Easterbrook, *supra* note 195, at 155–56 (making the inverse point that where a reduction in intrabrand competition spurs interbrand competition, both effects are in some sense "procompetitive," such that analysts need not try to balance the incommensurable values).

[260] *See generally* John M. Newman, *The Myth of Free*, 86 GEO. WASH. L. REV. 513, (2018) (debunking the popular misconception that these products are "free").

[261] *See, e.g.*, John M. Newman, *Antitrust in Zero-Price Markets: Foundations*, 164 U. PA. L. REV. 149, 151–53 (2015).

[262] *See, e.g.*, Complaint at 9–10, United States v. Google LLC, No. 1:20-cv-03010 (D.D.C. Oct. 20, 2020).

[263] *Id.*

[264] *See* John M. Newman, *Antitrust in Attention Markets: Definition, Power, Harm* 21–22 (Univ. Mia. Legal Stud. Rsch. Paper No. 3745839, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3745839 [https://perma.cc/D6TJ-7CEP].

advertisers, leaving them worse off. Yet fewer digital advertisements often yields both more users and more usage by current users.[265] Internet users, for the most part, do not like advertisements.[266] Thus, the agreement would simultaneously tend to increase output of search results and leave users better off. Again, the Output–Welfare Fallacy offers no guidance on how to trade off simultaneous upward and downward output effects *and* simultaneous upward and downward welfare effects.

For another example, consider college education and student-athlete labor. Many student-athletes trade their labor and licensing rights to colleges and universities.[267] In exchange, the schools offer college education, housing, and food.[268] Student–athletes produce labor and licensing rights, which schools consume as one of the inputs into their production of college athletic events (much like schools consume electricity to power stadium lights, for example).[269] At the same time, schools produce college education, which is consumed by student–athletes.[270] A group of schools has agreed to fix wages paid to student–athletes at zero—these are the "amateurism" rules that were at issue in *O'Bannon v. NCAA*[271] and *NCAA v. Alston*.[272] That type of agreement leaves some consumers of one product (college education) worse off. But it also leaves consumers of two different products (labor and licensing rights) better off. Meanwhile, effects on output of college education are indeterminate. It will tend to decrease the output of labor and licensing rights. Finally, the challenged restraint *might* also increase output of yet another product: live and televised college sports.[273] To the extent it increases viewer appreciation of college sports (a contested issue), it would also tend to benefit that group of consumers.

For those keeping score, then, the restraint would simultaneously have indeterminate effects on output of one product, reduce output of two different products, and potentially increase output of a fourth product. It would also benefit consumers of two products, harm consumers of a third product, and possibly benefit consumers of a fourth product. Yet again, outputism simply collapses. Even if output of each of these products could be quantified, the conflicting results would yield no meaningful policy prescriptions.

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[265] Christopher Hendrickson, *Less Is More: How Fewer Ads Can Make You More Money*, ADWEEK (Mar. 22, 2018), https://www.pubexec.com/post/fewer-ads-means-more-money [permalink] ("[P]oor user experiences brought about by ads can turn away users . . . .").

[266] *See supra* note 254 and accompanying text.

[267] *See, e.g.*, O'Bannon v. Nat'l Collegiate Athletic Ass'n, 7 F. Supp. 3d 955, 973 (N.D. Cal. 2014), *rev'd in part on other grounds*, 802 F.3d 1049 (9th Cir. 2015) ("In the complex exchange represented by a recruit's decision to attend and play for a particular school, . . . [t]he recruit provides his athletic performance and the use of his name, image, and likeness.").

[268] *Id.* ("[T]he school provides tuition, room and board, fees, and book expenses . . . .").

[269] *See id.* at 996 ("[S]chools . . . compete . . . as sellers in the college education market or consumers in the market for recruits' athletic services and licensing rights."); Banks v. Nat'l Collegiate Athletic Ass'n, 977 F.2d 1081, 1098 (7th Cir. 1992) (Flaum, J., concurring in part and dissenting in part) ("[P]eople who watch college football . . . certainly are consumers in the college football *product* market, but the market at issue here is the college football *labor* market, and the NCAA member colleges are consumers in that market.").

[270] *O'Bannon*, 7 F. Supp. 3d at 973.

[271] O'Bannon v. Nat'l Collegiate Athletic Ass'n, 802 F.3d 1049, 1053 (9th Cir. 2015).

[272] Nat'l Collegiate Athletic Ass'n v. Alston, 141 S.Ct. 2141, 2152 (2021).

[273] *See O'Bannon*, 802 F.3d at 1061–62.

Outputism offers no affirmative value to antitrust analysis of conduct involving barter markets. Its failure in this regard alone might well be disqualifying. These markets lie at the very core of antitrust policy and practice. *United States v. Google LLC*, filed in October 2020, is the highest profile Sherman Act Section 2 case brought by the Justice Department in decades.[274] *Fed. Trade Comm'n v. Facebook, Inc.* and *New York v. Facebook, Inc.* followed closely on its heels.[275] The U.S. Supreme Court recently issued a narrow ruling in *NCAA v. Alston*, and litigation appears likely to continue.[276] If outputism cannot speak to these matters—and it cannot—one is left to wonder how it could possibly form the backbone of antitrust.

C. Harm Absent Output Effects

Multiple types of conduct can reduce consumer welfare without affecting output levels. Price discrimination is one such category.[277] The orthodox position incorrectly assumes that the alternative to price discrimination is always supracompetitive price and output levels. But by preventing inframarginal customers from protecting marginal customers, price discrimination can reduce welfare without reducing output. The second category comprises conduct affecting customers whose demand is inelastic below a walkaway price (or sellers whose supply is inelastic above a walkaway price).[278] Here again, output can diverge from welfare.

According to outputist logic, none of this conduct should violate the antitrust laws, because none of it reduces output. Yet, as the following discussion makes clear, these types of conduct actually can constitute violations in the real world. In fact, some of them are viewed as *per se* illegal, and even criminal. Thus, yet again, the Output–Welfare Fallacy fails to reflect important portions of contemporary antitrust doctrine and practice.

1. Price Discrimination with Marginal Customers

Many contemporary commentators view price discrimination as benign, even desirable. That position stems from the economic assumption that price discrimination is output-increasing, and that output-increasing conduct is *ipso facto* efficient. Posner's view is representative: "There is no need to worry about price discrimination . . . . [P]rice discrimination brings the monopolist's output closer to that of a competitive market and reduces the misallocative effects of monopoly."[279] Both the DOJ and the FTC have made similar statements.[280] This assumes that without the ability

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[274] *See* Complaint at 2–7, United States v. Google LLC, No. 1:20-cv-03010 (D.D.C. Oct. 20, 2020).

[275] Complaint at 50–51, Fed. Trade Comm'n v. Facebook, Inc., No. 1:20-cv-03590-JEB (D.D.C. Jan. 13, 2021); Complaint at 6, New York v. Facebook, Inc., No. 1:20-cv-03589-JEB (D.D.C. Dec. 9, 2020).

[276] *Alston*, 141 S.Ct. 2141 at 2165–66.

[277] *See infra* Section III.C.1.

[278] *See infra* Section III.C.2.

[279] Richard A. Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. Rev. 925, 926 (1979).

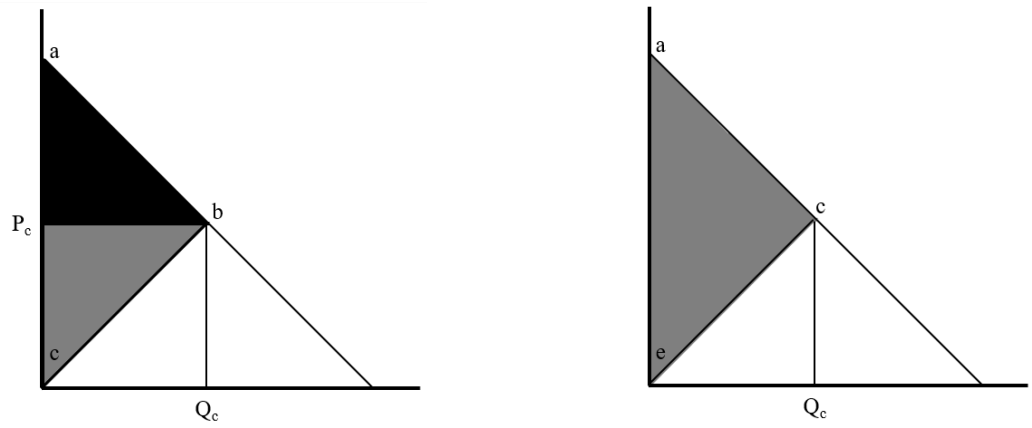
[280] DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS COMPETITION COMMITTEE, PERSONALIZED PRICING IN THE DIGITAL ERA – NOTE BY THE UNITED STATES 4 (Nov. 21, 2018), https://one.oecd.org/document/DAF/COMP/WD(2018)140/en/pdf [https://perma.cc/95FM-8LZG] (Organisation for Economic Co-operation and Development submission) ("[F]irst-degree price discrimination unambiguously increases total welfare. . . . [A] firm engaging in first-degree price discrimination expands output and eliminates the deadweight loss associated with market power.")

to price discriminate, a monopolist will restrict output and raise price across-the-board. In other words, the prevailing view assumes that supracompetitive price and output levels are the alternative to price discrimination.

But the alternative to price discrimination is often *not* supracompetitive price and output levels. The key insight is that demand is always heterogeneous, at least in every market that might plausibly involve price discrimination. Suppose there are two groups of buyers: a "marginal" low-demand group and an "inframarginal" high-demand group. Absent price discrimination, a powerful seller faces two options: set a high price and lose the marginal group, or set a lower price and sell to both groups.[281] Whenever the marginal customer group is substantial enough, the seller will choose the lower price to avoid losing too many sales.[282] In this way, low-demand customers can protect more vulnerable high-demand customers. Price and output will not reach monopoly levels. Prices are lower, output is higher, and consumers are better off. The alternative to price discrimination can be competitive-like conditions, rather than monopolistic ones.[283]

Price discrimination prevents marginal consumers from protecting inframarginal customers. Thus, price discrimination does not necessarily increase output, *contra* the orthodox assumption. Instead, it may leave output levels unaffected, while transferring surplus ("welfare") away from consumers. Real-world empirical research supports this intuition.[284] The dynamic is depicted in Figure 4, below.

Figure 4.



[281] *See, e.g.*, SULLIVAN ET AL., *supra* note 108, at 843 (using the example of a manufacturer that sells to high-end boutiques and discount stores).

[282] *Cf.* United States v. Engelhard Corp., 126 F.3d 1302, 1306 (11th Cir. 1997) ("[I]t is possible for only a few customers who switch to alternatives to make the price increase unprofitable, thereby protecting a larger number of customers who would have acquiesced in higher . . . prices.").

[283] Bork's very earliest work recognized that price discrimination will not always increase output, though he thought that output increases "seem[] more likely." Bork, *supra* note 61, at 198.

[284] Shepard examined price discrimination by gas stations offering both self-service and full-service gasoline. *See generally* Andrea Shepard, *Price Discrimination and Retail Configuration*, 99 J. POL. ECON. 30 (1991) (exploring price discrimination in gas stations). Such stations were able to price discriminate, unlike stations offering only one or the other. *Id.* at 42. Crucially, she found that prices for full-service gas were $0.09 to $0.11 higher at price-discriminating stations than at full-service stations unable to discriminate. *Id.* at 44–45. This is consistent with marginal customers protecting inframarginal ones at the non-discriminating stations.

Absent price discrimination, the marginal customers (P_cbc) may be able to protect the inframarginal customers (abP_c) from paying higher prices. As a result, abP_c represents consumer surplus.[285] Output is Q_c, and price is P_c. But notice what happens when price discrimination is introduced, as on the right. Marginal customers can no longer protect inframarginal ones. All of the consumer welfare vanishes, although the output level (Q_c) has not changed. Price discrimination has substantially reduced consumer welfare without a corresponding output reduction.

This is relevant not only to price-discrimination law itself, but also to the analysis of tying arrangements and (to a somewhat lesser extent) vertical mergers. In a model with heterogeneous demand, for example, Professors Erik Hovenkamp and Herbert Hovenkamp suggest that "metering" ties benefit low-demand customers.[286] The intuition is that such customers would not purchase the tying good if it were provided separately, on the assumption that the separate-provision price will be higher than the tying-condition price.[287] But if the low-demand customer group is substantial enough to protect other customers, the price of the tying good will be driven lower, perhaps even to cost.[288] As a result, Hovenkamp and Hovenkamp's analysis necessarily holds only when the seller offers the tying good at below-cost prices—a practice that case law suggests is rare.[289] Tying arrangements that facilitate price discrimination are likely more harmful than the prevailing view suggests.[290]

2. Inelastic Demand/Supply Below/Above a Walkaway Price

Conduct can also be harmful without reducing output when demand (or supply) is inelastic below (or above) a walkaway price. Suppose, for example, a city needs one additional downtown parking garage. The city calculates the net present value of benefits to its citizens at $10 million over the lifespan of the garage. Thus, the city's is willing to spend up to $10 million—its walkaway price—on the project. Under competitive conditions, the garage would cost the city $8.5 million to complete.[291] But suppose local general contractors agree to rig bids, such that the lowest bid

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[285] For readability, the marginal-cost curve is not explicitly labeled; it is line *cb*.

[286] Erik Hovenkamp & Herbert Hovenkamp, *Tying Arrangements*, *in* THE OXFORD HANDBOOK OF INTERNATIONAL ANTITRUST ECONOMICS 335–36 (Roger D. Blair & D. Daniel Sokol eds., 2015).

[287] *Id.*

[288] *See* Salop & Stiglitz, *supra* note 134, at 494 ("[I]f there are enough informed agents, the market price will settle down to the perfectly competitive price."). Salop and Stiglitz focus on differential search costs, but their results are generalizable to heterogenous preferences. *Id.* at 493.

[289] *See* Grimes, *supra* note 221 ("[T]his gain will occur only if the seller lower's the price of the tying product, something that the case law suggests may not occur at all.").

[290] Hilton's foundational work similarly appears to assume the relevant benchmark for comparison is monopoly price levels. *See* George W. Hilton, *Tying Sales and Full-Line Forcing*, 81 WELTWIRTSCHAFTLICHES ARCHIV 265, 270 (1958) ("[If] tying arrangements are prohibited, . . . the prohibition is equivalent to requiring a monopolist to desist from discriminating and to begin charging a single monopoly price."). The present analysis also underscores that Posner was wrong to declare that the introduction of price discrimination always increases allocative efficiency. *See* Posner, *supra* note 278, at 926. There is no deadweight loss under either alternative in Figure 4.

[291] *See How Much Does It Cost To Build a Parking Garage?*, FIXR (Aug. 26, 2021), https://www.fixr.com/costs/build-parking-garage [https://perma.cc/9NSA-75JE].

submitted is $10 million.[292] The city, none the wiser, accepts the bid, and the garage is built. The contractors' conduct did not affect output, yet it left the buyer $1.5 million poorer.[293]

In such situations, outputist logic would dictate finding that no violation has occurred. But in the real world, courts often do not require plaintiffs to prove output effects.[294] The challenged conduct is generally treated as *per se* illegal, and even criminal. Consider, for example, the defendants in *Seville Industrial Machinery*, who "agreed . . . not to bid against one another" at a government bankruptcy auction.[295]

All of the bankrupt firm's assets were sold at the rigged auction, albeit at substantially lower prices than would have been reached in a competitive auction.[296] Despite the lack of any output effect, the conspirators were criminally indicted, and the court treated their conduct as *per se* illegal.[297] Similarly, in *Bensinger Co.*, a group of defendants were criminally charged after conspiring to fix the price of a commercial refrigerator.[298] After receiving the (fixed) bids, the targeted customer declined to accept any of them and subsequently bought the refrigerator from a non-conspirator; thus, output was not affected. Nonetheless, the bid-riggers' conduct was treated as *per se* illegal and criminal.[299] Yet again, the Output–Welfare Fallacy fails to describe actual case law.[300]

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In sum, a vast amount of marketplace activity can have decoupled or ambiguous output and welfare effects. Strategic conduct can increase output while reducing welfare. The inverse is also true: firms acting alone or in concert can reduce output in order to increase welfare. Conduct can simultaneously push output in conflicting directions and welfare in conflicting directions. Some conduct has no effect on output, but harms welfare. As all of this makes clear, output and welfare are not interchangeable. Output is not a reliable stand-in for welfare. The Output–Welfare Fallacy is just that, a fallacy.

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[292] Bid-rigging is quite common, even in larger cities. *See, e.g.*, Press Release, U.S. Dep't of Just., Commercial Flooring Contractor Agrees To Plead Guilty to Bid Rigging (Aug. 27, 2020), https://www.justice.gov/opa/pr/commercial-flooring-contractor-agrees-plead-guilty-bid-rigging [https://perma.cc/X98J-Y7XC] (describing a nearly decade-long bid-rigging conspiracy in Chicago).

[293] One might object that the city now has less to spend on other projects, but the city may not need any other projects completed in the near term.

[294] *See, e.g.*, *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150, 224–25 n.59 (1940) ("It is the . . . 'restraint of trade' . . . which § 1 of the Act strikes down, whether the concerted activity be wholly nascent or abortive on the one hand, or successful on the other.").

[295] *United States v. Seville Indus. Mach. Corp.*, 696 F. Supp. 986, 988 (D.N.J. 1988).

[296] *Id.* Following the public auction, the defendants held a private auction that generated more than $75,000 more in revenue than had the (rigged) public auction. *Id.*

[297] *Id.* at 989–90.

[298] United States v. Bensinger Co., 430 F.2d 584, 587 (8th Cir. 1970).

[299] *Id.* at 589.

[300] Although these examples involve the application of the *per se* rule, under which proof of actual marketplace effects is generally not required, harm without output effects can also occur in the context of vertical restraints or unilateral exclusionary conduct. In such cases, proof of effects is generally required.

In practice, the Output–Welfare Fallacy would yield bizarre outcomes in some cases, systematically biased outcomes in others, and is nonsensical and unworkable in still others. Under outputist logic, the very same conduct can be both the supreme good and the supreme evil of antitrust—a modern antitrust paradox. Where the Fallacy is deployed, it causes massive societal harm. Fortunately, it has not yet taken hold of the entire antitrust enterprise. Its incomplete victory will make it easier to excise from antitrust doctrine, discourse, and practice.

IV. ESCAPING THE NEW ANTITRUST PARADOX

Recognizing the Output–Welfare Fallacy as such offers immense payoffs. First, harmful outputist decisions—most pressingly the Supreme Court's 2018 *AmEx* opinion—warrant swift overruling, whether judicially or via legislation.[301] At the very least, it can quietly be relegated to the dustbin of history, as often happens to especially shoddy antitrust opinions.[302] Second, evolving beyond outputism allows a much-needed correction of antitrust law's substantive burdens of proof. Analysis of market power, anticompetitive effects, and procompetitive justifications can all be improved considerably.

A. Burying *AmEx*: Bad Law, Worse Economics

The Output–Welfare Fallacy reached its apex in the Supreme Court's recent *AmEx* opinion. *AmEx* began as a suit by the United States against the three largest credit-card companies, Visa, AmEx, and MasterCard. The Government sought to enjoin "anti-steering" rules contractually imposed by these networks on all card-accepting merchants.[303] The rules forbid merchants from presenting any network in a differentiated way to customers. Merchants cannot offer discounts for using a particular brand of card, tell customers "[w]e prefer" a certain card, or inform customers of the costs associated with each brand.[304] Visa and MasterCard quickly settled, but AmEx—which generally charged the highest merchant fees—fought to keep its rules in place.[305]

At trial, the Antitrust Division proved that AmEx's no-steering rules had stifled competition and increased card-acceptance prices across all networks.[306] When Discover tried to compete by lowering prices to merchants, for example, AmEx's rules prevented those merchants from encouraging their customers to pay with Discover's less-expensive cards.[307] Discover predictably abandoned its efforts to compete and instead raised card-acceptance fees—which it

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[301] *See* STAFF OF H. SUBCOMM. ON ANTITRUST, 116TH CONG., INVESTIGATION OF COMPETITION IN DIGIT. MKTS 398–99 (Comm. Print 2020).

[302] Again, it may be worth recalling that two of Justice Thomas's previous forays into antitrust are regarded by at least some observers as especially problematic. *See* Baker, *supra* note 122, at 365–67 (discussing *Baker Hughes*); *see also* Sagers, *supra* note 122, at 393 (discussing *Dagher*).

[303] United States v. Am. Express Co., 88 F. Supp. 3d 143, 163–65 (E.D.N.Y. 2015).

[304] *Id.* at 165.

[305] *Id.* at 150.

[306] *Id.* at 215.

[307] *Id.* at 216.

"was able to [do] with . . . impunity," again due to AmEx's restraints.[308] Facing higher across-the-board acceptance costs, merchants passed along some of those costs to consumers "in the form of higher [across-the-board] retail prices."[309] In other words, AmEx's restraints increase the cost of nearly every good and service sold to consumers in the United States.[310]

Despite abundant evidence of harm in the trial record, a divided U.S. Supreme Court declared that the Government had failed to carry its burden. Justice Thomas, writing for the majority, began by quoting the leading treatise for the proposition that "[m]arket power is the ability to raise price profitably *by restricting output*."[311] (Thomas added the emphasis.) The majority opinion begrudgingly admitted that AmEx's restraints had caused higher prices.[312] Nonetheless, credit-card usage—i.e., output—had increased over the relevant time period.[313] As a result, the Court held for the defendant.[314] Justice Thomas' opinion also endorsed "consumer welfare" as antitrust's goal.[315] Thus, for the first time in a Supreme Court decision, the conflation of output with welfare—the Output–Welfare Fallacy—was on clear display.[316]

Not only did *AmEx* embrace the Output–Welfare Fallacy, it did so in exactly the type of case where output and welfare can and will diverge. The facts implicated at least three of the categories discussed above: the challenged restraints (1) maintained an information asymmetry; (2) externalized costs; and (3) caused conflicting output effects and simultaneously caused conflicting welfare effects, an example of the Push/Pull dynamic that can arise in multi-product settings.[317]

First, AmEx's merchant restraints maintained an information asymmetry.[318] Credit-card networks and merchants know how much it costs to accept credit cards, but AmEx's contractual

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[308] *Id.*

[309] *Id.*

[310] *Id.*

[311] Ohio v. Am. Express Co., 138 S. Ct. 2274, 2288 (2018) (quoting PHILLIP AREEDA & HERBERT HOVENKAMP, FUNDAMENTALS OF ANTITRUST LAW §5.01 (4th ed. 2017) (internal quotation marks omitted)). Thomas also cited *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 464 (1992). But *Kodak* had not defined "market power" quite so narrowly; it quoted earlier statements to the effect that market power is "the ability of a single seller to raise price and restrict output." *Eastman Kodak Co.*, 504 U.S. at 464 (internal citation omitted).

[312] *Am. Express Co.*, 138 S. Ct. at 2289.

[313] *Id.* at 2288 ("The output of credit-card transactions grew dramatically from 2008 to 2013, increasing 30%.").

[314] *Id.* at 2290.

[315] This was admittedly an off-handed endorsement, coming as it did in a parenthetical characterization of the Court's 2007 *Leegin* decision: "(recognizing that vertical restraints can . . . enhance competition and consumer welfare)." *Am. Express Co.*, 138 S. Ct. at 2289–90 (quoting *Leegin Creative Leather Prods., Inc., v. PSKS, Inc.*, 551 U.S. 877, 886 (2007)). More squarely, Thomas also stated that "[t]he goal [of the rule of reason] is to 'distinguis[h] between restraints with anticompetitive effect that are harmful to the consumer and restrains stimulating competition that are in the consumer's best interest.'" *Id.* at 2284 (quoting *Leegin Creative Leather Prods., Inc., v. PSKS, Inc.*, 551 U.S. 877, 886 (2007)). The author thanks Jack Kirkwood for flagging the latter reference.

[316] *Am. Express Co.*, 138 S. Ct. at 2302 (Breyer, J., dissenting) ("[T]he majority retreats to saying that even net price increases do not matter after all, absent a showing of lower output . . . .").

[317] *See supra* Part III.

[318] United States v. Am. Express Co., 88 F. Supp. 3d 143, 209 (E.D.N.Y. 2015). The district court found that the AmEx-enforced information asymmetry impacted demand, i.e., output, though it did not identify the direction of the effects. *Id.* As the Supreme Court did not hold this finding of fact to be an abuse of discretion on appeal, it presumably stands as part of the record in the case. *See Am. Express Co.*, 138 S. Ct. at 2288–89 (majority opinion).

restrictions prevented merchants from communicating that information to their customers.[319] Such restraints can increase output, yet reduce welfare.[320] By keeping cardholders in the dark about acceptance costs, AmEx's restraints propped up demand for its products. Indeed, AmEx conceded that if its cardholders were given accurate information about acceptance costs, at least some of them would decrease their usage of AmEx cards or switch to a different network.[321] Some would likely switch to less costly forms of payment, like debit cards. Per standard assumptions regarding revealed preferences, that output reduction would have *increased*, not decreased, consumer welfare. Thus, the lack of a demonstrable output reduction did not undercut the plaintiffs' case—if anything, the fact that credit-card usage increased during the relevant time period buttressed the theory of harm.

Second, AmEx's challenged restraints allowed both it and its cardholders to externalize costs.[322] This can harm consumers writ large; it can also harm consumers of the relevant product.[323] By stifling competition among card networks, the restraints increase costs for merchants. Yet AmEx's restraints prevent merchants from passing the additional costs on to the cardholders who trigger them. As a result, merchants are forced to raise prices to *all* of their customers, including those who pay with cash, checks, money orders, and food stamps.[324] AmEx's merchant restraints allow it to stimulate demand for its product by externalizing the costs of credit-card rewards onto other, more vulnerable segments of society.

Moreover, AmEx's restraints effectively turn credit cards into a "combatant good."[325] Faced with the choice between paying higher retail prices without receiving any rewards and paying higher prices while receiving some rewards, each individual consumer is incentivized to "defect" and begin using credit cards. But AmEx does not pass all of its supracompetitive profits to cardholders as rewards. Thus, the rewards paid out will not necessarily fully offset the retail price increases—*even for cardholders*. Especially in sectors where fewer non-cardholders are available to subsidize rewards points, even cardholders can suffer.[326] Again, the lack of a demonstrable output reduction in *AmEx* did not signal that the restraints were procompetitive—to the contrary, it was perfectly consistent with the theory of harm.

Third, the challenged restraints are of a type that will simultaneously push output higher and lower—the Push/Pull Effect. Credit-card networks offer different services to merchants and cardholders, such that the two are not economic substitutes. A merchant faced with higher

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[319] *Am. Express Co.*, 88 F. Supp. 3d at 165 ("The [challenged restraints] disable merchants from . . . [p]osting a sign that discloses the merchant's actual cost of accepting each network's cards or that compares the relative costs of acceptance across card brands, even if such information is accurate and truthful . . . .").

[320] *See supra* Section III.A.1.

[321] This might alternatively be thought of as maintaining an information "imperfection." Joseph E. Stiglitz, *Information and the Change in Paradigm in Economics*, 92 AM. ECON. REV. 460, 473 (2002) ("[I]t [is] not just information asymmetries, but information imperfections more generally, that [a]re relevant.").

[322] *Am. Express Co.*, 88 F. Supp. 3d at 209 ("[W]ith the [challenged restraints] in place, customers do not internalize the full cost of their payment choice . . . .").

[323] *See supra* Section III.A.

[324] *See supra* Section III.A.

[325] *See* Nagler, *supra* note 166, at 396–97.

[326] Different merchants encounter different mixes of payment methods. Most online merchants, for example, transact almost exclusively via credit and debit networks.

interchange fees cannot "substitute" to carrying a credit card, nor can a cardholder paying high interest rates "substitute" to accepting credit-card payments.[327] AmEx's restraints increased the price of card-acceptance services for merchants.[328] This, in turn, put *downward* pressure on output of those services. Thus, for example, a massive program of merchant price increases caused some merchants to stop accepting AmEx cards.[329] Yet the restraints also allowed AmEx to pass some—though not all—of its supracompetitive profits on to its cardholders as rewards points. By increasing the incentive to pay with credit cards, the restraints put *upward* pressure on output of cardholder services.[330]

Nonetheless, Justice Thomas's opinion required the plaintiffs to prove that AmEx's restraints caused a net output reduction.[331] But the Push/Pull Effect meant that overall output effects were necessarily indeterminate as to the core question of harm.[332] And, given that the challenged restraints maintained an information asymmetry *and* facilitated a negative externality, the fact that credit-card usage had been increasing actually supported—or was at least consistent with—the plaintiffs' theory of harm.

AmEx is a shoddy opinion. Unless and until it is overruled, it will continue to have harmful consequences for the real-world individuals who bear the brunt of the challenged conduct. In the interim, the antitrust enterprise can safely disregard it as bad law, based on bad economics. Antitrust, more so than most other areas of law, is willing to treat especially bad judicial opinions as lacking any force.[333] *AmEx* should meet a similar fate.

This dark cloud may carry a silver lining. *AmEx* may continue to be useful as a *negative* illustration. The majority opinion's double mistake makes it a perfect illustration of why the Output–Welfare Fallacy should be rejected. Not only did Thomas assume that output is the exclusive criterion for analyzing welfare effects, he did so in a case that actually exhibited not just one, but *three* separate factors that can cause output to diverge from welfare. From the perspective of those who endorse outputism, Thomas and his brethren could hardly have picked

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[327] Substitutability—or lack thereof—has always been how antitrust analysis identifies separate products. Thus, at least according to most serious observers, the facts of *AmEx* involved two unique products. *See, e.g.*, Herbert Hovenkamp, *Platforms and the Rule of Reason: The* American Express *Case*, 2019 COLUM. BUS. L. REV. 35, 56–57 (2019); *see also* Kirkwood, *supra* note 36, at 1809–12. Justice Thomas's majority opinion declared instead that AmEx sells a single product called "transactions." Ohio v. Am. Express Co., 138 S. Ct. 2274, 2287 (2018). Under this view, AmEx sells "transactions" to merchants and also sells the same "transactions" to cardholders. *See id.* One obvious and fatal flaw in that line of reasoning is that "transactions" are not an actual product that is sold to anyone.

[328] United States v. Am. Express Co., 88 F. Supp. 3d 143, 216 (E.D.N.Y. 2015).

[329] *Id.* at 196–97 ("[A]mong . . . millions of small merchants . . . , American Express appears to have concluded that Value Recapture was profitable on the whole, even though the network observed higher rates of cancellation and card suppression . . . .").

[330] *See supra* note 169–71 and accompanying text (describing the combatant good effect).

[331] *Am. Express Co.*, 138 S. Ct. at 2290.

[332] Katz & Melamed, *supra* note 127, at 2097–98 ("It is unclear whether on balance the no-steering provisions increase or decrease output.").

[333] *See generally, e.g.*, Daniel A. Crane, *Antitrust Antitextualism*, 96 NOTRE DAME L. REV. 1205 (2021) (discussing the atypical judicial relationship with antitrust law); Sanjukta Paul, *Recovering the Moral Economy Foundations of the Sherman Act*, 131 YALE L.J. (forthcoming XXXX), (Apr. 15, 2020), https://papers.ssrn.com/sol3/papers.cfm?
abstract_id=3564452.

a worse case in which to formally embrace it. The *du Pont* case of an earlier era was flawed, but it is still used in classrooms to illustrate its own mistake—the (in)famous "Cellophane Fallacy."[334] *AmEx* can similarly be used as a teaching tool to exemplify its own error—the "*AmEx* Fallacy."

B. Revising Burdens of Proof

The Output–Welfare Fallacy makes for misguided antitrust policy. Doctrinally, it manifests via burdens of proof. Plaintiffs' initial burden often entails proving that the defendant(s) had "market power"—sometimes defined as the power to "reduce output."[335] Where plaintiffs must demonstrate anticompetitive effects, the Fallacy would require proof that the challenged conduct tended to reduce marketwide output.[336] If an antitrust plaintiff is able to make out a *prima facie* case, the burden generally shifts to defendants to offer a procompetitive justification.[337] In such cases, the Fallacy would force defendants to prove that their conduct actually increased output. But outputist prescriptions rest on a flawed foundation. The following discussion identifies superior alternatives.

1. Market Power As Control

It is bad policy to define "market power" narrowly as the power to "reduce output."[338] Instead, "market power" can more usefully be defined as the power to "*control*" a relevant aspect of marketplace competition.[339] This more flexible definition avoids the inherent illogic of outputism; it will also allow judges to avoid wasting scarce judicial resources and improve decisional outcomes.

The outputist framing assumes that reducing output is the only way to exercise market power, or, at the very least, that an exercise of market power must be accompanied by an output reduction.[340] Consider, for example, the following appellate court's holding: "The plaintiffs

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[334] *See generally* United States v. E.I. du Pont de Nemours & Co., 351 U.S. 377 (1956) (finding no illegal cellophane monopoly); Herbert Hovenkamp, *Response: Markets in IP and Antitrust*, 100 GEO. L.J. 2133, 2146 n.60 (2012).

[335] *See infra* notes 337–44 and accompanying text.

[336] *See supra* Section IV.A and note 330.

[337] *See* Newman, *supra* note 238, at 506–09 (explaining the burden-shifting framework that characterizes most of modern antitrust analysis).

[338] For representative examples, *see* Brief for Amici Curiae, *supra* note 6, at *40 ("[M]arket power is defined as the ability to restrict market-wide output . . . ."); *see* Ball Mem'l Hosp., Inc. v. Mut. Hosp. Ins., Inc., 784 F.2d 1325, 1335 (7th Cir. 1986) ("Market power comes from the ability to cut back the market's total output . . . ."); *see also* Geneva Pharms. Tech. Corp. v. Barr Lab'ys Inc., 386 F.3d 485, 500 (2d Cir. 2004) (rejecting evidence that defendant had lowered prices in response to entry as "ambiguous" absent proof of an output restriction).

[339] United States v. Grinnell Corp., 384 U.S. 563, 571 (1966) (emphasis added). This definition offers the added historical advantage of having been endorsed by the U.S. Supreme Court on multiple occasions. *See, e.g.*, United States v. Grinnell Corp., 384 U.S. 563, 571 (1966) ("[W]e define[] monopoly power as 'the power to control prices or exclude competition.'") (quoting *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 391 (1956)); *see also, e.g.*, United States v. Dentsply Int'l, Inc., 399 F.3d 181, 187 (3d Cir. 2005) ("[M]onopoly power . . . has been defined as the ability 'to control prices or exclude competition.'" (quoting *Grinnell*, 384 U.S. at 571)).

[340] *See, e.g.*, Brief for Amici Curiae, *supra* note 6, at *15 ("[P]rice effects . . . are only associated with the exercise of market power when they are accompanied by a reduction in output.").

submitted evidence that [the defendant] routinely charged higher prices than other [firms] while reaping high profits. With no accompanying showing of restricted output, however, the plaintiffs have failed to present direct evidence of market power."[341] But a powerful firm or cartel need not reduce output to increase profits above the competitive level. To the contrary, a powerful firm or group of firms might *increase* output to increase profits. For example, the defendants in *Indiana Federation of Dentists* colluded to artificially prop up demand.[342] The defendant in *AmEx* imposed contractual restraints that did the same.[343] And so forth. Output is not the only way to exercise market power, nor are exercises of market power always accompanied by output reductions.

As a practical matter, the outputist definition is inefficient and likely to force costly mistakes. To illustrate, suppose a powerful firm in a highly concentrated market imposed contractual restraints that (1) stifled the flow of accurate-but-negative information about its product, and (2) externalized the costs of its product onto others.[344] Such restraints put upward pressure on output. Yet the outputist framing of the market-power inquiry ("power to *reduce* output") would force a judge to turn away from the facts at hand.[345] Instead, it would require her to ask, "In a hypothetical world, would this firm have the power to do something that both parties agree it did not actually do in the real world?" This is outputism *ad absurdum*.

A commonly used alternative definition of market power is "the ability to raise price profitably above the competitive level."[346] But this suffers from similar defects as the outputist version. First, it implicitly assumes and/or suggests that raising price is the only way to exercise market power. But firms can exercise market power in a variety of ways. In zero-price markets—which account for an ever-increasing amount of economic activity[347]—firms are generally unlikely to exercise power by raising prices.[348] Even in positive-price markets, firms can exercise power in ways that lower, rather than increase, prices. Suppose, for example, that a seller cartel agreed to use a lower-cost, lower-quality input.[349] Such an agreement can yield lower market prices, while simultaneously being profitable for the sellers and harmful to consumers.[350] Moreover, an "increase-prices" test for market power (wrongly) suggests that antitrust is not concerned with buyer power. It would also necessitate a carve-out, or exception, for such cases.

The better definition asks instead whether the defendant(s) can "*control*" a relevant aspect of marketplace competition. This more robust framing allows consideration of the best evidence

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[341] Forsyth v. Humana, Inc., 114 F.3d 1467, 1476 (9th Cir. 1997).

[342] *See supra* notes 136–40 and accompanying text.

[343] *See supra* Section IV.A.

[344] This example is, of course, based on the facts of *AmEx*. *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2282–83 (2018).

[345] *See supra* note 330 and accompanying text.

[346] John B. Kirkwood, *Market Power and Antitrust Enforcement*, 98 B.U. L. REV. 1169, 1172, 1172 n.12 (2018) ("This definition is so widely used it is canonical.").

[347] Newman, *supra* note 260, at 151.

[348] John M. Newman, *Antitrust in Zero-Price Markets: Applications*, 94 WASH. U. L. REV. 49, 71–73 (2016).

[349] *See generally* Nat'l Macaroni Mfrs. Ass'n v. FTC, 345 F.2d 421 (7th Cir. 1965) (agreement to stop using 100% durum wheat flour).

[350] One might object that "quality-adjusted prices" have gone up, but actually identifying a "quality-adjusted price" is often next-to-impossible in the real world. *See supra* note 140 and accompanying text.

in a given case to inform the analysis. It avoids the need to send litigants and judges down a metaphysical rabbit-hole of hypotheticals and counterfactuals. It avoids the need for exceptions and carve-outs to address zero-price markets and buyer-power cases. And, as noted, this definition has already been used multiple times by the Supreme Court.[351]

2. Plaintiffs Need Not Prove That Output Decreased

Insisting that antitrust plaintiffs prove one particular type of effect—an output reduction—is bad law based on bad economics. Judges need not evaluate conduct through such a narrow set of blinders.[352] Nothing in the legislative history underlying the Sherman or Clayton Acts would suggest that this crabbed version of antitrust is appropriate.[353]

The *AmEx* case provides a ready example of the injury that can arise when this artificial bar is imposed. Indeed, it is difficult to think of a more harmful restraint than one that has endured for decades in a highly concentrated market, that extracts wealth from the least well-off members of society and redistributes it to the already-affluent, and that increases the cost of nearly every good and service sold in the United States.[354] The Output–Welfare Fallacy was deployed to justify these harmful effects.

Without a course correction, such harms will be multiplied. Proponents of the Fallacy describe it as extending across all of antitrust.[355] Suppose it were to be invoked in a case involving Google or Facebook, both of which operate in markets that can exhibit the Push/Pull Effect.[356] Regardless of the actual merits, the Output–Welfare Fallacy would militate in favor of dismissal; at best, it would be a waste of judicial resources. A myriad of other cases would present similar problems. But the point is well-established; let us not belabor it further. Restricting antitrust adjudication to whether the plaintiff has demonstrated an output reduction is unjustified, unnecessary, inefficient, and yields costly errors.

Where does that leave antitrust doctrine? Three initial points emerge: (1) an output reduction can be a cognizable anticompetitive effect, (2) an output increase can also be a

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[351] *See* sources cited *supra* note 338; *see also* Eastman Kodak Co. v. Image Tech. Servs., Inc., 504 U.S. 451, 464 (1992) (defining market power as "the power 'to force a purchaser to do something that he would not do in a competitive market'") (quoting *Jefferson Parish Hosp. Dist v. Hyde*, 466 U.S. 2,14 (1984)). *But see* Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 235 (1993) (defining market power as the "power [to] raise . . . prices above a competitive level"); NCAA v. Bd. of Regents of the Univ. of Okla., 468 U.S. 85, 109 n.38 (1984) (defining market power as "the ability to raise prices above those that would be charged in a competitive market").

[352] As we have seen, a number of judges have declined to do so. For additional examples, see Clarett v. Nat'l Football League, 306 F. Supp. 2d 379, 398 (S.D.N.Y. 2004) ("Such a rigid 'price or output' rule finds little support in the case law."); O'Bannon v. NCAA, 802 F.3d 1049, 1070 (9th Cir. 2015) ("[A] 'reduction in output is not the *only* measure of anticompetitive effect.'") (quoting AREEDA & HOVENKAMP, *supra* note 99, at ¶ 1503b(1)).

[353] *See, e.g.*, John B. Kirkwood, *The Essence of Antitrust: Protecting Consumers and Small Suppliers from Anticompetitive Conduct*, 81 FORDHAM L. REV. 2425, 2433–39 (2013).

[354] After Australia prohibited no-steering rules like the one at issue in *AmEx*, retail prices nationwide declined so much that it noticeably lowered the country's overall Consumer Price Index. *See* Brief for Amicus Curiae Australian Retailers Ass'n in Support of Petitioners, at *19 ("Importantly, these benefits to consumers have often gone to those most in need.").

[355] *See supra* Section II.C.

[356] *See supra* Section III.B.2.

cognizable anticompetitive effect, and (3) it is inappropriate to insist on proof of output effects in every case. As to the first, suppose, for example, that a plaintiff alleges that a group of powerful defendants entered into an output-restricting agreement to enrich themselves at the expense of their less-powerful trading partners. This was the primary theory in *NCAA v. Board of Regents*, for example.[357] In such a case, it makes obvious sense to require proof of an output reduction.[358] That was the plaintiffs' own theory of harm.

But in other cases, plaintiffs' allegations do not center on reduced output.[359] Here, plaintiffs' initial burden should not include proving an output reduction. Instead, adjudicators should focus at this stage on whether the plaintiffs have adequately proven their actual theory of harm. To borrow a phrase from the Supreme Court, "[w]hat is required . . . is an enquiry meet for the case."[360] Where the theory of harm centers some effect other than output, that ought to be the primary focal point. Where the theory of harm involves an output *increase*, that should invite analysis of whether the theory holds water, rather than a knee-jerk dismissal. For example, plaintiffs often plausibly allege that a defendant engaged in coercion via threats or tying, engaged in anticompetitive deception, etc.[361] In such cases, an output increase can and should be cognizable as an anticompetitive effect.

To illustrate how this more flexible, robust approach can facilitate analysis, consider *NCAA v. O'Bannon*. On appeal, the NCAA tried to invoke the Output–Welfare Fallacy, arguing that the plaintiff student–athletes failed to prove an output reduction.[362] But the Ninth Circuit rightly rejected that argument.[363] The plaintiffs' theory of the case revolved around wage suppression, not output effects. Because the evidence overwhelmingly indicated that wages were negatively affected, the court held that the plaintiffs had carried their initial burden. Forcing the student–athletes to prove an output reduction (of what, exactly?) would have wasted their—and the court's—time and resources. *O'Bannon* was not perfect,[364] but it is instructive on this point.

3. Defendants Need Not Prove an Output Increase

It would be equally misguided to require all antitrust defendants to demonstrate an output increase in order to justify their conduct. Such a requirement would invite harmful errors. It could,

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[357] NCAA v. Bd. of Regents of Univ. of Okla., 468 U.S. 85, 105–06 (1984). Even so, the Court did not focus single-mindedly on output; it discussed price effects as well. *See id.* at 99–100.

[358] *See id.* at 103 (applying the rule of reason instead of the *per se* illegality rule).

[359] For an early example of a case in which output was said to be relevant but not dispositive, see Standard Oil Co. v. United States, 221 U.S. 1, 52 (1911) (referring to "limitation on production" as one of multiple types of antitrust-relevant effects).

[360] Cal. Dental Ass'n v. FTC, 526 U.S. 756, 781 (1999).

[361] *See supra* Section III.A.

[362] O'Bannon v. NCAA, 802 F.3d 1049, 1064, 1070 (9th Cir. 2015) ("First, [the NCAA] argues that because the plaintiffs never showed that the rules reduce output in the college education market, the plaintiffs did not meet their burden of showing a significant anticompetitive effect.").

[363] *Id.* at 1070.

[364] Indeed, some have criticized it for partially endorsing the defendant's argument that the restraints were justified by their impact on viewer demand for televised college sports. *See O'Bannon*, 802 F.3d at 1061–62; *see supra* note 272 and accompanying text.

for example, lead to condemnation of virtually all professional-association rules against false or misleading advertising, like the one at issue in *California Dental*.[365] Such rules can prevent professionals from abusing their informational advantage and relationship of trust to oversell services to their clients.[366] Of course, some professional-association rules are harmful, but many such rules benefit consumers and society at large. The Output–Welfare Fallacy would flatly condemn even beneficial rules, on the mistaken assumption that less output is always bad.

For another example of the far-ranging ill effects that would arise from outputist procompetitive-justification analysis, consider educational-accreditation bodies like the American Bar Association, American Dental Association, American Veterinary Medicine Association, and dozens more. In antitrust litigation arising out of negative accreditation decisions, the Output–Welfare Fallacy would require the accreditor to prove that its actions *increased* overall output of education, a difficult—and often impossible—task.[367] This, in turn, would effectively force accreditors to grant status to all applicants, even rapacious sham universities.[368]

Or consider the various strikes launched by gig-economy workers in Spring 2020 as an effort to improve working conditions amidst the rapidly spreading coronavirus pandemic.[369] Many such workers are classified as independent contractors, potentially exposing them to antitrust scrutiny.[370] Thus, their coordinated work stoppages could be viewed as inherently suspect horizontal output reductions.[371] If an employer or ideologically motivated enforcement agency had responded with an antitrust lawsuit, the Output–Welfare Fallacy would have forced the workers to prove that their conduct increased output—again, a difficult, perhaps impossible, task. Outputism would amount to an open hunting season on such workers.[372] If antitrust law can

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[365] *See generally* Cal. Dental Ass'n v. FTC, 526 U.S. 756 (1999) (involving the guidelines of a voluntary nonprofit association of dental societies).

[366] *Id.* at 772–73.

[367] *See supra* notes 214–16 and accompanying text.

[368] Perhaps in the long run, such standards do increase output—but how would the defendant possibly prove as much? Here, the *Brooke Group* Court made a valid point: "Such a counterfactual proposition is difficult to prove in the best of circumstances . . . ." Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 233 (1993). One might also speculate that the standards increase quality-adjusted short-run output, but that is far from clear, and the same response applies with equal or greater force. Finally, perhaps the reader believes accreditation standards are unjustified, but that is not the point—the question is whether an antitrust nostrum based on fallacious reasoning should be used to overturn those standards wholesale.

[369] *See, e.g.*, Cyrus Farivar, *Instacart Workers Slam Pandemic Working Conditions, Call for Work Stoppage*, NBC NEWS (Mar. 27, 2020, 12:58 PM), https://www.nbcnews.com/tech/tech-news/instacart-workers-slam-pandemic-working-conditions-call-work-stoppage-n1170566 [https://perma.cc/Y3CP-N4A4] (detailing grocery store shoppers and labor activist groups protesting an online shopping service's working conditions).

[370] *See, e.g.*, Marshall Steinbaum, *Uber's Antitrust Problem*, PROSPECT (May 11, 2016), https://prospect.org/labor/uber-s-antitrust-problem [https://perma.cc/N6HZ-3PPX] (analyzing Uber's role in the gig economy and current antitrust litigation).

[371] A majority of the Court characterized a similar strike as such in *FTC v. Superior Ct. Trial Laws. Ass'n*, 493 U.S. 411, 430–33 (1990) (condemning the strike as *per se* illegal).

[372] Not all such coordination is subject to antitrust scrutiny. *See generally, e.g.*, Susan Schwochau, *The Labor Exemptions to Antitrust Law: An Overview*, 21 J. LAB. RSCH. 535 (2000) (discussing union activities that courts may not declare illegal under antitrust law). For a somewhat analogous example, *see generally FTC v. Superior Ct. Trial Laws. Ass'n*, 493 U.S. 411 (1990) (serving as an antitrust case with lawyers who organized and participated in a boycott).

be used to force workers to undertake hazardous conditions amidst a global pandemic, surely the antitrust enterprise must stop and ask whether it has lost its way.

In sum, the Output–Welfare Fallacy—which here would require all defendants to demonstrate increased output—invites condemnation of a wide variety of prosocial conduct. A different starting point is needed. Greater output *may* help to indicate that the challenged conduct is justified, but lower output can also indicate that the challenged conduct is justified. Defendants, like plaintiffs, should not be forced into the straitjacket of output-only analysis.

It should be sufficient for a defendant to demonstrate that (1) the relevant market actually exhibited a cognizable source of failure,[373] and (2) the challenged conduct in fact alleviated that failure, such that any apparently anticompetitive effects were more than offset.[374] This flexibly structured analytical framework has served antitrust well in a number of cases.[375] Of course, just as it is for plaintiffs, actual evidence is required.[376]

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Output cannot be the "touchstone,"[377] the "*sine qua non*,"[378] or the "Holy Grail"[379] of antitrust law. Just as it is inappropriate to consider particular aspects of conduct in isolation instead of as a whole,[380] it is wrong to cabin all of antitrust analysis to a particular type of effect. Proof of an output reduction (or the power to reduce output) should not be required of all plaintiffs. Proof of increased output should not be required of all defendants. Instead, courts and enforcers should be free to consider the relevant facts at hand, using the best evidence available.

V. CONCLUSION

For decades, the Output–Welfare Fallacy has spread throughout antitrust doctrine and discourse. It traces its roots to, accompanied, and facilitated the paradigm shift toward the consumer-welfare standard. By making what might otherwise have been a bitter pill easier to

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[373] *See, e.g.*, Nat'l Collegiate Athletic Ass'n v. Bd. of Regents of Univ. of Okla., 468 U.S. 85, 119–20 (1984) (rejecting the justification premised on fear that viewers would prefer televised over in-person athletic events).

[374] *See, e.g.*, *id.* at 97, 117–20 (rejecting the justification premised on "promoting athletically balanced competition" because the challenged restraint did not actually do so). On the market-failure framework generally used by contemporary courts, *see* Newman, *supra* note 238, at 509–13.

[375] *See* Newman, *supra* note 238, at 522–26.

[376] Despite scattered suggestions to the contrary, the overwhelming bulk of Supreme Court precedent requires more than mere "assertions" from defendants to whom the burden has shifted. *See, e.g.*, Eastman Kodak Co. v. Image Tech. Servs., Inc., 504 U.S. 451, 485–86 (1992) ("None of Kodak's *asserted* business justifications . . . [we]re sufficient to *prove* that Kodak [wa]s 'entitled to a judgment as a matter of law' . . . .") (emphasis added); FTC v. Ind. Fed'n of Dentists, 476 U.S. 447, 462–63 (1986) (rejecting dental association's proffered "quality of care" justification as being factually unsupported); *Bd. of Regents*, 468 U.S. at 119–20.

[377] Brief for Amici Curiae, *supra* note 6, at *3.

[378] *Id.*

[379] Crane, *supra* note 23, at 341.

[380] *See, e.g.*, Cont'l Ore Co. v. Union Carbide & Carbon Corp., 370 U.S. 690, 699 (1962) ("[I]n a case like the one before us [involving Sherman Act Section 1 and Section 2 claims], the duty of the jury was to look at the whole picture and not merely at the individual figures in it.") (citation omitted).

swallow, the Fallacy played a crucial role in facilitating the widespread embrace of Chicagoan goals and methodologies. One cannot understand contemporary antitrust without first grasping the importance of outputism.

At the same time, the Output–Welfare Fallacy contributed to serious defects at the heart of the antitrust enterprise. The resulting body of doctrine and discourse is incoherent, opaque, and prone to harming those it purports to protect. The Fallacy threatens to render antitrust a policy at war with itself. Moving beyond the narrowed confines of outputism allows a simpler and more accurate—and therefore less costly and more beneficial—approach to antitrust decision-making.