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ARTICLE

FRAMING THE CHICAGO SCHOOL OF ANTITRUST
ANALYSIS

HERBERT HOVENKAMP[†] & FIONA SCOTT MORTON^{††}

The Chicago School of antitrust has benefitted from a great deal of law office history, written by admiring advocates rather than more dispassionate observers. This essay attempts a more neutral examination of the ideology, political impulses, and economics that produced the School and that account for its durability.

The origins of the Chicago School lie in a strong commitment to libertarianism and nonintervention. Economic models of perfect competition best suited these goals.

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The early strength of the Chicago School was that it provided simple, convincing answers to everything that was wrong with antitrust policy in the 1960s, when antitrust was characterized by over-enforcement, poor quality economics or none at all, and many internal contradictions.

The Chicago School's greatest weakness is that it did not keep up. Its leading advocates either spurned or ignored important developments in economics that gave a better accounting of an economy that was increasingly characterized by significant product differentiation, rapid innovation, networking, and strategic behavior. The Chicago School's protest that newer models of the economy lacked testability lost its credibility as industrial economics experienced an empirical renaissance, nearly all of it based on models of imperfect competition.

What kept Chicago alive was the financial support of firms and others who stood to profit from less intervention. Properly designed antitrust enforcement is a public good. Its beneficiaries—consumers—are individually small, numerous, scattered, and diverse. Those who stand to profit from nonintervention were fewer in number, individually much more powerful, and much more united in their message. As a result, the Chicago School went from being a model of enlightened economic policy to an economically outdated but nevertheless powerful tool of regulatory capture.

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INTRODUCTION

The Chicago School has had an important place in antitrust analysis since the 1960s. While its influence has waned considerably among scholars, it continues to find support among conservatives in business, politics, and the federal judiciary. This Article attempts to put some historical perspective on

the Chicago School, focusing on its ideology as well as its microeconomic and legal antitrust analysis.

One well-known account of the Chicago School's development is a panel discussion edited by Ed Kitch of the University of Virginia in a program honoring Aaron Director and Ronald Coase.¹ His article bore the revivalistic title "The Fire of Truth," and it spoke of a religious movement, of people who "gathered to bear witness" to a remarkable event.²

Kitch attempted to locate the roots of the Chicago School in the rise of Legal Realism in the 1920s, with its efforts to examine how the law actually operates, rather than focusing purely on legal doctrine.³ It was an unpromising comparison, as Kitch himself apparently realized.⁴ Alternative accounts have found more plausible origins for the Chicago School of analysis in the thought of Friedrich Hayek or Frank Knight.⁵ Kitch did properly fault the Legal Realists for compiling a great deal of observation with very little unifying theory or methodology.⁶ Kitch's account is also notable for what it omitted. There was no mention of Robert L. Hale, the pioneering Columbia law and economics scholar who wrote about the relationship between economics and the legal system.⁷ Nor did he mention Walton Hamilton's influential 1929 article in the *American Economic Review*, entitled *Law and Economics*, which first gave that discipline a name and attempted to set it on a more institutional path.⁸ Another commentator made a single but uninformative mention of Thurman Arnold,⁹ the Legal Realist who in 1938 became head of the Antitrust Division and became that Agency's most

¹ See Edmund W. Kitch, *The Fire of Truth: A Remembrance of Law and Economics at Chicago, 1932-1970*, 26 J.L. & ECON. 163 (1983).

² *Id.* at 163. William E. Kovacic also comments on the religious fervor. See William E. Kovacic, *The Chicago Obsession in the Interpretation of US Antitrust History*, 87 U. CHI. L. REV. 459, 459, 461 & n.5, 462 (2020) ("[T]he Chicago School's leading figures and their followers are portrayed as ideological extremists, religious zealots, cult-like fanatics, or carriers of a disease.").

³ Kitch, *supra* note 1, at 164-65.

⁴ *Id.* at 165.

⁵ See Rob Van Horn & Philip Mirowski, *The Rise of the Chicago School of Economics and the Birth of Neoliberalism*, in *THE ROAD FROM MONT PELERIN* 139, 140 (Philip Mirowski & Dieter Plehwe eds., Harvard Univ. Press paperback ed. 2015) (recognizing that the traditional view on the origins of the Chicago School often diminishes or neglects the importance of figures like Frank Knight and Friedrich Hayek).

⁶ Kitch, *supra* note 1, at 164-65.

⁷ See Robert L. Hale, *Coercion and Distribution in a Supposedly Non-Coercive State*, 38 POL. SCI. Q. 470, 470 (1923) (noting that because "statesmen cannot avoid interfering with economic matters," "[t]here is accordingly a need for the development of economic and legal theory to guide them in the process").

⁸ See Walton L. Hamilton, *Law and Economics*, 19 AM. ECON. REV. 56 (1929); see also HERBERT HOVENKAMP, *THE OPENING OF AMERICAN LAW* 121 (2015) (discussing Hamilton's institutional view); *id.* at 364 n.16 (collecting sources).

⁹ Kitch, *supra* note 1, at 174.

aggressive antitrust enforcer.¹⁰ Chicago, if anything, became the *anti*-Thurman Arnold.

Also missing from Kitch's discussion was the single most important question that divided the Chicago School from most of its alternatives, the Legal Realists in particular: are markets similar, or do they differ from one another in fundamental ways? That issue sharply separated the Chicago ("similar") and Harvard ("differ") School approaches to industrial organization economics and antitrust policy. The residue of that division, which remains to this day, showed up in numerous ways. One was Chicago economists' and later lawyers' hostility toward the antitrust enforcement implications of both oligopoly theory and monopolistic competition theory.¹¹ Another was Chicago's narrow view of market failure and thus of the appropriate scope of public intervention, such as Pigouvian taxes¹² or price regulation.¹³ Yet another was its continued efforts to de-emphasize the significance of market structure in both regulatory and antitrust decisionmaking. Chicago economist George Stigler devoted considerable intellectual capital to both criticizing the theory of monopolistic competition¹⁴ and weakening the theory of oligopoly so as to make it no more than a special case of collusion.¹⁵ This came through loudly in the popularizing scholarship of Robert Bork, who viewed oligopoly as something

¹⁰ See HOVENKAMP, *supra* note 8 at 200-01 (describing Arnold's pursuit of patent abuse cases). See generally Spencer Weber Waller, *The Antitrust Legacy of Thurman Arnold*, 78 ST. JOHN'S L. REV. 569 (2004).

¹¹ "Monopolistic competition" is often used as a shorthand for all cases of imperfect competition that are not monopoly. On Chicago School scholar Robert H. Bork's attitudes toward oligopoly and monopolistic competition, see Herbert Hovenkamp, *Whatever Did Happen to the Antitrust Movement?*, 94 NOTRE DAME L. REV. 583, 612 (2018), which describes Bork's antistructuralist view that "virtually denied the existence of oligopoly or any other problematic form of market structure other than single-firm monopoly or express collusion."

¹² See, e.g., R.H. Coase, *The Problem of Social Cost*, J.L. & ECON. 1, 28-42 (1960) (critiquing Pigou's book *The Economics of Welfare*); see also HOVENKAMP, *supra* note 8, at 104-05 (discussing the history of Pigouvian taxes and their treatment by the Supreme Court).

¹³ See, e.g., George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3, 6 (1971) (discussing public policies related to price controls).

¹⁴ GEORGE J. STIGLER, *Monopolistic Competition in Retrospect*, in THE ORGANIZATION OF INDUSTRY 309, 309-21 (1968) (criticizing Edward Chamberlin's theory of monopolistic competition); see also CRAIG FREEDMAN, *The Chicago School of Anti-Monopolistic Competition: Stigler's Scorched Earth Campaign Against Chamberlin*, in IN SEARCH OF THE TWO-HANDED ECONOMIST 165, 165-342 (2016) (analyzing the motives and methods behind Stigler's pointed critique of Chamberlin's theory).

¹⁵ See George J. Stigler, *A Theory of Oligopoly*, 72 J. POL. ECON. 44, 47-48 (1964).

that existed only in economics textbooks¹⁶ and who completely ignored the theory of monopolistic competition.¹⁷

Imperfect competition theories threatened the core commitment to nonintervention in Chicago School work. Joseph Schumpeter was prescient in his 1934 review of Joan Robinson's *The Economics of Imperfect Competition*.¹⁸ If her work were to be taken seriously, he wrote, it would completely undermine the strong presumption against intervention.¹⁹ Rather, the circumstances under which governmental action could increase welfare "becomes so extended as to make these cases the rule rather than more or less curious exceptions."²⁰ Built into Chicago School doctrine was a strong presumption that markets work themselves pure without any assistance from government. By contrast, imperfect competition models gave more equal weight to competitive and noncompetitive explanations for economic behavior.

The rejection of inconvenient advances in economics became a hallmark of Chicago School analysis. Its followers were libertarians who were committed on ideological grounds to less intervention by the state. The classical liberal Mont Pelerin Society claimed not only Friedrich Hayek and Frank Knight among its founding members, but also George Stigler, Aaron Director, Fritz Machlup, Milton Friedman, James M. Buchanan, and Gary Becker.²¹ Many of them were also economists, however, and they liked competitive markets. Of course, an ideological commitment to nonenforcement and a desire for competitive markets can come into tension

¹⁶ ROBERT H. BORK, *THE ANTITRUST PARADOX* 221 (1978); see Hovenkamp, *supra* note 11, at 612 (discussing Bork's "serious doubts that oligopoly behavior existed except in economics textbooks").

¹⁷ See Richard S. Markovits, *Monopolistic Competition, Second Best, and The Antitrust Paradox: A Review Article*, 77 MICH. L. REV. 567, 594 (1979) (book review) (examining the implications of "Bork's failure to deal with monopolistic competition").

¹⁸ See Joseph A. Schumpeter & A.J. Nichol, *Robinson's Economics of Imperfect Competition*, 42 J. POL. ECON. 249 (1934) (reviewing JOAN ROBINSON, *THE ECONOMICS OF IMPERFECT COMPETITION* (1933)).

¹⁹ *Id.* at 250-51.

²⁰ *Id.* at 251.

²¹ See ANGUS BURGIN, *THE GREAT PERSUASION* 25, 44-45, 157, 204, 285 n.80 (2012) (discussing the Society and its members); Brian Doherty, Book Review, *POLICY*, Autumn 2013, at 61, 61-63 (analyzing the libertarian roots of the Society's founders); *A Short History of the Mont Pelerin Society*, MONT PELERIN SOC'Y, <https://www.montpelerin.org/about-mps> [<https://perma.cc/X8UB-LZTW>] (last visited Apr. 15, 2020) (describing the Society's founding). On Fritz Machlup as a founding member of the Mont Pelerin Society, see his Cato Institute obituary. Gottfried Haberler, *Fritz Machlup: In Memoriam*, 3 CATO J. 11, 13 (1983). On the relationship between the Mont Pelerin society and neoliberal thought, see R.M. HARTWELL, *The Mont Pelerin Society and the Revival of Liberalism*, in *A HISTORY OF THE MONT PELERIN SOCIETY* 191-217 (1995). See generally *THE ROAD FROM MONT PELERIN*, *supra* note 5. Robert Van Horn has analyzed the Society's influence on Chicago economics' attitudes toward business concentration. See Robert Van Horn, *Chicago's Shifting Attitude Toward Concentrations of Business Power (1934-1962)*, 34 SEATTLE U. L. REV. 1527, 1537-40 (2011).

whenever firms use the profits from market power to obtain and keep that market power.

Because a firm has a financial incentive to use the profit from market power in order to maintain it, economic theory predicts that this would occur often. The Chicagoans thus needed an additional critical assumption: markets are inherently self-correcting and if left alone, they will work themselves pure. For example, cartels are naturally unstable, there are few entry barriers, monopoly attracts disruptive entry, mergers almost never produce anything except reduced costs, and vertical integration and contracting are unmitigated goods. With these assumptions in hand, government intervention in the form of antitrust enforcement is not needed to deliver competitive markets.²²

This combination of beliefs found fertile ground in U.S. antitrust policy at mid-twentieth century. Enforcement at that time was excessively interventionist. Courts often either used no economics or poor economics to make decisions.²³ For example, the Court famously applied the per se rule to a competitively harmless joint venture because the rule of reason would “leave courts free to ramble through the wilds of economic theory in order to maintain a flexible approach.”²⁴

Here was a place where the Chicago School call to use economics in antitrust analysis would generate less enforcement—and have the handy side effect of being correct. For example, its first proposed reductions in enforcement attacked decisions condemning very small horizontal mergers²⁵ or competitively harmless vertical contracting.²⁶ The changes that resulted very likely increased consumer welfare and efficiency.

This side effect of being correct was critical to bringing the bulk of academic economists on board the Chicago movement.²⁷ The attractive feature of the movement was not the ideology of less enforcement regardless of the facts, but rather the idea of using economics to analyze business conduct in an effort to maximize social welfare. The economics angle was the marketing genius of the

²² See, e.g., Frank H. Easterbook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 15-16 (1984) (“[T]he economic system corrects monopoly more readily than it corrects judicial errors.”).

²³ See Herbert Hovenkamp, *Progressive Antitrust*, 2018 U. ILL. L. REV. 71, 85-87 (“Most noticeable was [the Warren Court’s] treatment of economic efficiency almost as an affirmative evil rather than a goal to be pursued.”).

²⁴ *United States v. Topco Assocs.*, 405 U.S. 596, 609 n.10 (1972).

²⁵ See, e.g., *Brown Shoe Co. v. United States*, 370 U.S. 294, 344 (1962) (condemning merger on very small market shares, in part because it reduced the merging firms’ costs); see also *United States v. Von’s Grocery Co.*, 384 U.S. 270, 273-74 (1966) (similar).

²⁶ See, e.g., *Albrecht v. Herald Co.*, 390 U.S. 145, 148-49 (1968) (ruling that setting maximum resale prices was per se illegal); *United States v. Arnold, Schwinn & Co.*, 388 U.S. 365, 379 (1967) (prohibiting a bicycle manufacturer from preventing distributors from selling outside approved territories).

²⁷ Indeed, one of the authors remembers being taught in graduate school in 1989 that economics was not used in antitrust prior to the Chicago revolution and that it led to the current consumer welfare standard used by courts.

Chicago School, but it was a means to an end, not the end itself, as would later become clear when the School began to disavow later developments in economics. In the late 1970s, economically weak antitrust decisions from the 1960s and earlier provided plenty of low hanging fruit.

This movement sowed the seeds of its own intellectual decline, although its influence continued for decades. As economic reasoning was incorporated into court decisions, the marginal antitrust case became less offensive to good economics. Conduct that fell right on the (moving) line became more anticompetitive over time. Arguing that this more anticompetitive conduct was still benign became more difficult. Thus, as litigated cases trended, defendants' conduct became more difficult to justify economically. The practical success of the intellectual movement weakened its argument for reducing enforcement any further. Indeed, more up-to-date economic analysis revealed anticompetitive conduct and called for greater enforcement.²⁸ Making the problem worse, about this time (1980s) the economics profession developed applied game theory and there was a spate of sophisticated models of imperfect competition.²⁹ Now many more patterns of anticompetitive conduct could be explained and understood, particularly those in oligopoly markets.

While Bork's influential book *The Antitrust Paradox* was based largely on work he published in the 1960s,³⁰ it came out in 1978,³¹ well after the game theory revolution and advances in modeling monopolistic competition and

²⁸ See George L. Priest, *The Limits of Antitrust and the Chicago School Tradition*, 6 J. COMPETITION L. & ECON. 1, 4-5 (2010) (recounting how Ronald Coase disliked an article the author wrote that found the Supreme Court should have been more interventionist). Others called for greater enforcement as well. See Janusz A. Ordover et al., *Equilibrium Vertical Foreclosure*, 80 AM. ECON. REV. 127, 131-40 (1990) (showing how vertical integration may result in downstream firms being cut off from suppliers); Michael A. Salinger, *Vertical Mergers and Market Foreclosure*, 103 Q.J. ECON. 345, 355 (1988) (describing the "per se legal[ity]" of vertical mergers as having "a shaky theoretical and no empirical foundation"); Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 AM. ECON. REV. 837, 837-41 (1990) (examining the anticompetitive effects of tying).

²⁹ For an overview of this issue see Ian Ayres, *Playing Games with the Law*, 42 STAN. L. REV. 1291 (1990) (book review). See also Avinash Dixit, *A Model of Duopoly Suggesting a Theory of Entry Barriers*, 10 BELL J. ECON. 20 (1979); Avinash Dixit, *The Role of Investment in Entry-Deterrence*, 90 ECON. J. 95 (1980); Drew Fudenberg & Jean Tirole, *Capital as a Commitment: Strategic Investment to Deter Mobility*, 31 J. ECON. THEORY 227 (1983); David M. Kreps et al., *Rational Cooperation in the Finitely Repeated Prisoners' Dilemma*, 27 J. ECON. THEORY 245 (1982); A. Michael Spence, *The Learning Curve and Competition*, 12 BELL J. ECON. 49 (1981).

³⁰ See, e.g., Robert H. Bork, *Anticompetitive Enforcement Doctrines Under Section 7 of the Clayton Act*, 39 TEX. L. REV. 832 (1961); Robert H. Bork, *Contrasts in Antitrust Theory: I*, 65 COLUM. L. REV. 401 (1965); Robert H. Bork & Ward S. Bowman, Jr., *The Crisis in Antitrust*, 65 COLUM. L. REV. 363 (1965); Robert H. Bork, *The Rule of Reason and the Per Se Concept: Price Fixing and Market Division*, 75 YALE L.J. 775 (1966); Robert H. Bork, *Resale Price Maintenance and Consumer Welfare*, 77 YALE L.J. 950 (1968).

³¹ See BORK, *supra* note 16.

imperfect information were underway.³² Bork did not consider these new economic tools. His book was also quaint and old fashioned in other ways. By 1980 the role of intellectual property, networks, and information technologies was becoming well established in antitrust policy.³³ Bork's book barely mentioned them, and almost completely ignored patents. His view of technology was entirely backward-looking. *The Antitrust Paradox* is peopled largely by the conventional manufacturers and dealers that dominated antitrust policy prior to 1970, and where much of the excessive intervention had occurred.

Combined with this old economics was an important legal default: when the conduct at issue admitted of any doubt, government should not intervene. By placing the burden of proof onto the government or plaintiff to show that a course of conduct was anticompetitive, any conduct that could not be analyzed or explained became effectively legal. This key antitrust enforcement default drove the Chicago School's attitude toward economics.

Increasingly, a characteristic of the Chicago School became its inability to change the enforcement answer in response to changes in the economic environment created by advances in the discipline such as game theory and advanced estimation techniques. Recall the Chicago default: if the conduct cannot be proven anticompetitive, the right answer is no enforcement. But new tools explain conduct; given a situation, they can demonstrate if conduct is anticompetitive or procompetitive. Thus, the application of tools will yield some proportion of cases that require enforcement. A movement that was formed in order to reduce enforcement had no incentive to adopt modern economic tools if these tended—because they created clarity—to justify greater intervention in some cases. It quickly became clear that “Chicago Economics” was defined by the outcome it delivered, not any coherent set of principles or techniques.

As time went on, more unrealistic assumptions were needed in order to justify nonenforcement. For example, in *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.* the Supreme Court declared that recoupment is not

³² See, e.g., Michael Rothschild & Joseph Stiglitz, *Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information*, in *UNCERTAINTY IN ECONOMICS* 257, 259-80 (Peter Diamond & Michael Rothschild eds., 1978); John F. Nash, *Equilibrium Points in n-Person Games*, 36 *PROC. NAT'L ACAD. SCI. U.S.* 48, 48-49 (1950); Reinhard Selten, *The Chain Store Paradox*, 9 *THEORY & DECISION* 127 (1978).

³³ See, e.g., *Broad. Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1, 23-24 (1979) (declining to characterize a blanket licensing scheme for copyrighted music as per se illegal); *United States v. Am. Tel. & Tel. Co.*, 552 F. Supp. 131, 142-43 (D.D.C. 1982) (describing a consent decree containing the terms surrounding the breakup of AT&T), *aff'd sub nom. Maryland v. United States*, 460 U.S. 1001 (1983).

possible in oligopoly markets.³⁴ The game theory literature published in the fifteen years prior to the decision stands out for its contributions showing just the opposite.³⁵ The decision in *California Dental Ass'n v. Federal Trade Commission* seemed hopelessly naïve about the threat of collusion in markets with imperfect information.³⁶ Antitrust enforcement in the United States today displays this history of a growing separation between court decisions and economic reasoning.³⁷

Exacerbating the failure to keep up with developments in economics was the influence of parties who stood to profit from reduced antitrust enforcement. Conservative institutions were funded by firms that profited from nonintervention.³⁸ They organized education and influence programs targeting academics and the judiciary.³⁹ In addition, funding sources are often

³⁴ *Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 219 (1993) (affirming the Court of Appeals' view that "rely[ing] on the characteristics of an oligopoly to assure recoupment of losses from a predatory pricing scheme after one oligopolist has made a competitive move is . . . economically irrational").

³⁵ See Dilip Abreu, *Extremal Equilibria of Oligopolistic Supergames*, 39 J. ECON. THEORY 191 (1986); William A. Brock & José A. Scheinkman, *Price Setting Supergames with Capacity Constraints*, 52 REV. ECON. STUD. 371 (1985); Ariel Rubinstein, *Equilibrium in Supergames with the Overtaking Criterion*, 21 J. ECON. THEORY 1 (1979).

³⁶ *Cal. Dental Ass'n v. Fed. Trade Comm'n*, 526 U.S. 756, 774-75 (1999) (finding it was not obvious that a producer-enforced ban on price advertising would have an anticompetitive effect).

³⁷ See *infra* Part II; see also Herbert Hovenkamp, *The Looming Crisis in Antitrust Economics*, B.U. L. REV. (forthcoming 2020) (manuscript at 2), https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=3153&context=faculty_scholarship [<https://perma.cc/T8YS-4QJM>] (observing that advocates at both poles of the political spectrum misplace the role of economics in antitrust enforcement).

³⁸ A 2004 report by the National Committee for Responsive Philanthropy, a watchdog group, found that Koch Industries' philanthropy "give[s] money to nonprofit organizations that do research and advocacy on issues that impact the profit margin of Koch Industries." See JANE MAYER, DARK MONEY 180 (2017).

³⁹ See, e.g., Jane Mayer, *How Right-Wing Billionaires Infiltrated Higher Education*, CHRON. HIGHER EDUC. (Feb. 12, 2016), <https://www.chronicle.com/article/How-Right-Wing-Billionaires/235286> [<https://perma.cc/9D7P-FLJ7>] (describing how the conservative Olin Foundation's "most significant beachheads . . . were established in America's law schools . . ."); see also David Dayen, *Corporate-Funded Judicial Boot Camp Made Sitting Federal Judges More Conservative*, THE INTERCEPT (Oct. 23, 2018, 6:00 AM), <https://theintercept.com/2018/10/23/federal-judiciary-henry-manne-law-economics> [<https://perma.cc/9YZZ-GAP5>] (describing how over forty percent of federal judges had attended economics bootcamps organized by the Law and Economics Center at its peak). Additional important conservative donors to academia across the decades include Scaife, Volker, Bradley, DeVos, and Mercer, among others. See Daniel Bice, *Hacked Records Show Bradley Foundation Taking Its Conservative Wisconsin Model National*, MILWAUKEE J. SENTINEL (May 5, 2017), <https://projects.jsonline.com/news/2017/5/5/hacked-records-show-bradley-foundation-taking-wisconsin-model-national.html> [<https://perma.cc/7T8U-7HS9>]; Robert G. Kaiser & Ira Chinoy, *Scaife: Funding Father of the Right*, WASH. POST (May 2, 1999), <https://www.washingtonpost.com/wp-srv/politics/special/clinton/stories/scaifemain050299.htm> [<https://perma.cc/3PUN-Q6S8>]; Jane Mayer, *Betsy DeVos, Trump's Big-Donor Education Secretary*, NEW YORKER (Nov. 24, 2016), <https://www.newyorker.com/news/news-desk/betsy-devos-trumps-big-donor-education-secretary> [<https://perma.cc/GF5U-RGAM>]; David Gindis, *Law and Economics Under the Palms: Henry Manne at the University of Miami, 1974-1980* (Working Paper, Mar. 13, 2020), <https://papers.ssrn.com>

hidden, and some influences cannot be seen, such as authors who receive but do not disclose financing for their research. While the American Economic Association has had a central disclosure policy since 2012,⁴⁰ the law reviews do not. And economic theory demonstrates that funding for antitrust research will naturally be lopsided; there is no equivalent financial incentive to fund interventionist policy work because the benefits of antitrust enforcement accrue to consumers, who are very diffuse, not particular companies or institutions. Antitrust enforcement turns monopoly markets into competitive ones, corporate profit into consumer surplus, and is therefore a public good. As with any public good, it tends to be underprovided.

This background explains why the United States well overshot the mark in reducing antitrust enforcement after the late 1970s.⁴¹ Markups have risen steadily since the 1980s.⁴² The profit share of the economy has risen from 2% to 14% over the last three decades.⁴³ The economic literature has come down solidly against the key early assumption of the Chicago thinkers that markets will self-correct. To the contrary, the evidence demonstrates that eliminating antitrust enforcement likely results in monopoly prices and monopoly levels of innovation in many markets.⁴⁴ The higher prices (or lower quality) caused by lack of enforcement are paid by all consumers, while the profits accrue to

/sol3/papers.cfm?abstract_id=3567105 (detailing Henry Manne's program of financing conservative law and economics); Jim Zarroli, *Robert Mercer is a Force to Be Reckoned With in Finance and Conservative Politics*, NPR (May 26, 2017, 1:30 PM), <https://www.npr.org/2017/05/26/530181660/robert-mercer-is-a-force-to-be-reckoned-with-in-finance-and-conservative-politic> [<https://perma.cc/CE56-9MFD>].

⁴⁰ See Dan Berrett, *Economists Adopt New Disclosure Rules for Authors of Published Research*, CHRON. HIGHER EDUC. (Jan. 6, 2012), <https://www.chronicle.com/article/Economists-Adopt-New/130257>; *Disclosure Policy*, AM. ECON. ASS'N, <https://www.aeaweb.org/journals/policies/disclosure-policy> [<https://perma.cc/26PD-BKTL>] (last visited May 9, 2020).

⁴¹ See Fiona Scott Morton, *Modern U.S. Antitrust Theory and Evidence amid Rising Concerns of Market Power and Its Effects*, WASH. CTR. FOR EQUITABLE GROWTH (May 29, 2019), <https://equitablegrowth.org/research-paper/modern-u-s-antitrust-theory-and-evidence-amid-rising-concerns-of-market-power-and-its-effects> [<https://perma.cc/879H-9QBK>] ("Since the 1970s, the range of conduct that would be condemned by courts as anticompetitive has decreased significantly . . .").

⁴² See, e.g., Jan De Loecker & Jan Eeckhout, *The Rise of Market Power and the Macroeconomic Implications* 2-3 (Nat'l Bureau of Econ. Research, Working Paper No. 23687, 2017), <https://www.nber.org/papers/w23687.pdf> [<https://perma.cc/35JR-74ZU>] (describing how average markups rose from 18% to 67% from 1980 to 2014).

⁴³ See Simcha Barkai, *Declining Labor and Capital Shares* 34 fig.3 (Univ. of Chi. Stigler Ctr. for the Study of the Econ. & the State, New Working Paper Series No. 2, 2016) <https://research.chicagobooth.edu/-/media/research/stigler/pdfs/workingpapers/257.pdf> [<https://perma.cc/YZ53-9MVW>].

⁴⁴ For a discussion of innovation, see Giulio Federico et al., *Antitrust and Innovation: Welcoming and Protecting Disruption* (Nat'l Bureau of Econ. Research, Working Paper No. 26005, 2019). There is anticompetitive conduct in many markets. See generally Scott Morton, *supra* note 41 (compiling the recent literature).

equity holders, disproportionately to a very small percentage at the top.⁴⁵ Four decades of underenforcement has contributed to rising inequality, and a reaction is appearing in the current political debate as populism.⁴⁶

Today, Chicagoans still conflate their underenforcement ideology with the use of economics itself. However, economics is a neutral tool. It may predict a need for greater enforcement in some areas but less in others. The Chicagoans embraced economics when it would achieve their anti-enforcement ends, but largely ignored its advances in theory and empirical technique after 1970 because those tools sometimes proved that anticompetitive conduct had occurred, and that enforcement was needed. The movement created what might be called “Opportunistic Economics” by using economic analysis when it delivered the desired answer and ignoring it when it did not.

The remainder of this article examines briefly the role of the Chicago School in the making of antitrust law, focusing on the most fundamental issues, including: (1) the nature of markets, entry barriers, theory of competition and error cost analysis; (2) economic versus legal theories of competitive harm, focusing on leverage and foreclosure; (3) the Chicago and Harvard Schools, divergence, coalescence, and relative influence; and (4) the importance of antitrust welfare tests.

I. MARKETS AND STRUCTURE

A. *Market Diversity and Regulation*

One important contribution of the marginalist revolution in economics was the idea that markets differ from one another in fundamental ways.⁴⁷ Important contributors to market diversity were the variable presence of fixed costs and economies of scale, more complex theories about how sellers interact with one another, and the increasing role of spatial and product differentiation in descriptions of the economy. Along with this came the view that market failure is more common than classicists from Adam Smith

⁴⁵ See Joshua Gans et al., *Inequality and Markets Concentration, When Shareholding is More Skewed Than Consumption* 1 (Ctr. for Applied Macroeconomic Analysis, Working Paper No. 62/2018, 2018), https://cama.crawford.anu.edu.au/sites/default/files/publication/cama_crawford_anu_edu_au/2018-12/62_2018_gans_leigh_schmalz_triggs.pdf [<https://perma.cc/5LE3-BET5>] (showing that in the United States, people in the top income quintile hold thirteen times more equity than those in the bottom three quintiles combined).

⁴⁶ See, e.g., Carl Shapiro, *Antitrust in a Time of Populism*, 61 INT’L J. INDUS. ORG. 714, 715 (2018) (“American politicians are calling on antitrust to solve an array of problems associated with the excessive power of large corporations in the United States.”).

⁴⁷ See Herbert Hovenkamp, *Regulation and the Marginalist Revolution*, 71 FLA. L. REV. 455, 492-93 (2019) (discussing the relationship between market failure and market diversity).

through John Stuart Mill had allowed, and that the optimal amount and type of regulatory intervention varies from one market to another.⁴⁸ The result was an increasingly institutional approach to industrial organization economics that focused on differences among industries. For example, the large series of academic “industry studies” that formed the core of industrial organization research at Harvard stretched over a half century.⁴⁹ Justice Brandeis’s well known decision in *Chicago Board of Trade v. United States*, with its call to adjudicate antitrust cases by studying the entire history of the industry, was an early reflection of this approach in antitrust law. This approach required a rule of reason analysis that looked at the “facts peculiar to the business” and “[t]he history of the restraint, the evil believed to exist, [and] the reason for adopting the particular remedy.”⁵⁰

The Chicago School’s answer to this conception of market diversity reached beyond antitrust to issues of regulatory policy generally. Their main effort was to develop a common theory of competition that would cut across market structures—something the economics profession increasingly understood to be impossible.⁵¹ The result was not only suspicion of the aggressive antitrust policy of the New Deal and after, but also a general assault on New Deal regulatory policy, with its sector-specific agencies and diverse approaches for different markets.

The Chicago School critique of regulation began from a baseline of perfect competition, just as it did for issues of price theory. It identified perfect competition as optimal and regulatory departures as a consequence of political processes—namely “capture” by special interest groups. George Stigler’s well-known article on “The Theory of Economic Regulation”⁵² never spoke in the traditional regulatory terminology of natural monopoly, high fixed costs, entry barriers, or bottlenecks. Rather, regulation was the outcome of political struggles under which different interest groups competed to see who could benefit the most from a particular government policy. “A central

⁴⁸ See HOVENKAMP, *supra* note 8, at 279-81 (explaining that market failures necessitate varied interventions). Marginalism also had an effect on twentieth century regulatory policy. See Hovenkamp, *supra* note 47, at 457-58, 484-85 (describing how the marginalist approach lent itself to a mixed economy perspective of regulation).

⁴⁹ See Herbert Hovenkamp, *The Antitrust Movement and the Rise of Industrial Organization*, 68 TEX. L. REV. 105, 112-13 (1989) (describing the Harvard economics department as “heavily committed to the historical case-study method”).

⁵⁰ *Bd. of Trade of Chi. v. United States*, 246 U.S. 231, 238 (1918).

⁵¹ See Richard Schmalensee, *Inter-Industry Studies of Structure and Performance*, in 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 951, 952 (Richard Schmalensee & Robert Willig eds., 1989) (“[C]ross-section studies rarely if ever yield consistent estimates of structural parameters . . .”); Liran Einav & Jonathan Levin, *Empirical Industrial Organization: A Progress Report*, 24 J. ECON. PERSP. 145, 145 (2010) (explaining that the field moved away from “attempts to relate aggregate measures across industries”).

⁵² Stigler, *supra* note 13.

thesis of this paper,” he wrote, “is that, as a rule, regulation is acquired by the industry and is designed and operated primarily for its benefit.”⁵³

The message was that regulation is not a consequence of deficiencies in markets, but rather of *political* imperfections that permit interest groups to control markets for their own benefit. Further, markets should be viewed as similar in most fundamental particulars. Whenever possible, deviations from equilibrium outcomes should be addressed through private bargaining rather than state control.⁵⁴ With this framing, analysis of the details of competition in a market was unnecessary. The *au courant* views of oligopoly and monopolistic competition were seen as greatly exaggerating the extent to which markets deviated from competitive norms.⁵⁵ Today a standard lesson in an industrial organization economics class is that almost every market is imperfectly competitive in some way, whether it be due to economies of scale, imperfect information, impediments to entry, or one of many other reasons. When those imperfections are especially large, it can be better for society to regulate—also imperfectly—than allow unrestrained monopoly.

B. *Oligopoly, Monopolistic Competition, and Appropriate Antitrust Responses*

During the first half of the twentieth century, theories of imperfect competition played an increasing role in industrial organization analysis. One result was the rise of structuralism in the Harvard School, leading eventually to proposals by Donald Turner and others to break up large firms.⁵⁶ This was very likely the high point of oligopoly determinism in antitrust policy.⁵⁷ George J. Stigler’s severe redefinition of oligopoly and his aggressive attacks on monopolistic competition remain defining contributions of the Chicago School. So too was the Chicago School’s firm rejection of game theory,⁵⁸ a

⁵³ *Id.* at 3.

⁵⁴ See, e.g., Coase, *supra* note 12, at 15-28 (describing the costs associated with governmental regulation and arguing that such regulation can reflect the government’s self-interest).

⁵⁵ See GEORGE J. STIGLER, *Competition*, in THE ORGANIZATION OF INDUSTRY 5, 5-23 (1968) (dividing American industries into competitive and monopolized); see also ROBERT H. BORK, *Monopoly and Oligopoly: The Problem of Horizontal Size by Internal Growth*, in THE ANTITRUST PARADOX, *supra* note 16, at 163, 163-97 (acknowledging monopoly and competition but disputing the policy relevance of anything in between).

⁵⁶ See, e.g., Donald F. Turner, *The Definition of Agreement Under the Sherman Act: Conscious Parallelism and Refusals to Deal*, 75 HARV. L. REV. 655, 671 (1962); see also *infra* notes 70-71 and accompanying text.

⁵⁷ See *infra* notes 70-71 and accompanying text; see also HERBERT HOVENKAMP, *Structuralism in Competition Policy*, in THE OPENING OF AMERICAN LAW, *supra* note 8, at 206, 206-19 (tracing the rise of oligopoly theory and structuralism in U.S. antitrust policy).

⁵⁸ George Stigler was well-known for his rejection of this field. See, e.g., STIGLER, *supra* note 14; see also BORK, *supra* note 16, at 175; Harold Demsetz, *George J. Stigler: Midcentury Neoclassicalist with a Passion to Quantify*, 101 J. POL. ECON. 793, 799 (1993) (observing that Stigler “neither endorsed nor participated” in game theory, even though “a key rationale for using game theory to analyze

necessary tool for understanding markets with only a few competitors. The reliance on price theory and inability to appreciate oligopoly account for much of the skepticism that Chicago School antitrust writing has had towards theories of harm that interact with market structure.

Cournot's oligopoly theory postulated that each firm in a market for an undifferentiated product would take the output of rivals as given and then set its own output by equating its marginal cost and its own marginal revenue over the remaining ("residual") demand.⁵⁹ Edward Chamberlin's advance was to allow for differentiated products and endogenous entry.⁶⁰ The Chamberlain problem is very complex compared to the simpler Cournot setting and could not be solved before the advances of the 1970s through 1990s.⁶¹ A second important advance in oligopoly theory was the game theory revolution of the 1970s and 1980s.⁶² This work demonstrated that more collusive equilibria were possible if the dynamic nature of the competitive interaction was taken into account.⁶³ Competitors could sustain higher prices in the short run by realizing that any deviation would lead to a collapse of friendly cooperation in the long run.⁶⁴ The literature shows that under particular conditions (such as valuing profit in the future) each firm will adhere to the higher price.

In earlier work Stigler listed various reasons why he thought cartel agreements or tacit collusion would break down: oligopolists would find the contemporaneous gains from cheating on the cartel price larger than the gains from adhering. In some situations, depending on the size distribution of firms, the number of customers that would move, and other factors, cheating could be profitable in some cases but not others.⁶⁵ Stigler also listed a variety of transaction costs faced by cartels attempting to agree on a collusive course

microeconomic problems was neoclassical price theory's inability to shed light on the functioning of oligopolistic markets").

⁵⁹ See AUGUSTIN COURNOT, RESEARCHES INTO THE MATHEMATICAL PRINCIPLES OF THE THEORY OF WEALTH 79-89 (Nathaniel T. Bacon trans., The MacMillan Co. 1897) (1838).

⁶⁰ See EDWARD CHAMBERLIN, THE THEORY OF MONOPOLISTIC COMPETITION 71-116, 130-73 (8th ed. 1962).

⁶¹ See G. Steven Olley & Ariel Pakes, *The Dynamics of Productivity in the Telecommunications Equipment Industry*, 64 *ECONOMETRICA* 1263 (1996); see also Demsetz, *supra* note 58.

⁶² See e.g., Joseph Farrell & Garth Saloner, *Standardization, Compatibility, and Innovation*, 16 *RAND J. ECON.* 70 (1985); Drew Fudenberg & Jean Tirole, *A "Signal-Jamming" Theory of Predation*, 17 *RAND J. ECON.* 366 (1986); Drew Fudenberg & Jean Tirole, *Learning-by-Doing and Market Performance*, 14 *BELL J. ECON.* 522 (1983); Edward J. Green & Robert H. Porter, *Noncooperative Collusion under Imperfect Price Information*, 52 *ECONOMETRICA* 87 (1984); David M. Kreps & Robert Wilson, *Reputation and Imperfect Information*, 27 *J. ECON. THEORY* 253 (1982); see also *supra* notes 29, 32.

⁶³ See *supra* notes 32, 61.

⁶⁴ See *supra* note 32.

⁶⁵ See generally Stigler, *supra* note 15, at 44 ("[C]ollusion is much more effective in some circumstances than in others."). For excellent commentary, see Dennis W. Carlton & Sam Peltzman, *Introduction to Stigler's Theory of Monopoly*, 6 *COMPETITION POL'Y INT'L* 237 (2010).

of action.⁶⁶ Markets will vary in their information flows and transparency and the difficulty of detecting defections will vary accordingly. The subsequent game theory literature incorporated these observations and recognized them as reasons why some markets may be able to sustain higher collusive prices than others.⁶⁷

Chicago School legal scholars picked up on Stigler's critique of oligopoly in different ways. Posner's nuanced, progressive 1969 essay on oligopoly and the antitrust laws was a tour de force that actually promised to strengthen enforcement of the law against price fixing.⁶⁸ He began with Stigler's theory that concentrated market structures gave firms differential incentives to deviate from an oligopoly equilibrium, and that the factors causing these differential incentives could provide a basis for identifying actionable "tacit collusion."⁶⁹

Posner's foil was Donald F. Turner, who had just left his position as head of the Antitrust Division to return to Harvard.⁷⁰ Turner began with the position that high price-cost margins in concentrated industries were largely inevitable, and that the only workable solution was legislation breaking up larger firms.⁷¹ Today many economists would hesitate to break up oligopolistic firms if they had arrived at that market structure by competitive means because their high fixed costs very likely entail that restructuring would do more harm than good.⁷² By contrast, consumers might benefit from breaking up firms in an oligopoly that was created by an anticompetitive horizontal merger or other conduct. Posner followed Stigler's approach that market structure is no more than another factor that each oligopolist must take into account as it evaluates the profitability of a particular price or output decision.⁷³ As a result, antitrust policy could approach tacitly colluding oligopolists by looking at the structure and actions that promise to make price

⁶⁶ See Stigler, *supra* note 15, at 45-46 (listing factors including agreeing on price structure and enforcing the agreement).

⁶⁷ See, e.g., Joseph E. Harrington, Jr., *The Determination of Price and Output Quotas in a Heterogeneous Cartel*, 32 INT'L ECON. REV. 767 (1991).

⁶⁸ See Richard A. Posner, *Oligopoly and the Antitrust Laws: A Suggested Approach*, 21 STAN. L. REV. 1562 (1969); see, e.g., *id.* at 1590 (arguing for both remedial and punitive damages in price-fixing enforcement).

⁶⁹ *Id.* at 1566-67; see also Richard A. Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925 (1979) [hereinafter Posner, *Chicago School*]; Richard A. Posner, *Oligopolistic Pricing Suits, The Sherman Act, and Economic Welfare: A Reply to Professor Markovits*, 28 STAN. L. REV. 903 (1976).

⁷⁰ Posner, *supra* note 68, at 1562.

⁷¹ See Turner, *supra* note 56, at 671. An important precursor was Carl Kaysen. See Carl Kaysen, *Collusion Under the Sherman Act*, 65 Q.J. ECON. 263, 269-70 (1951) (discussing enforcement in oligopolistic markets).

⁷² See JEAN TIROLE, *THEORY OF INDUSTRIAL ORGANIZATION* (1989) (discussing the loss of economies of scale or network effects).

⁷³ Posner, *supra* note 68, at 1564-65 ("Oligopolists are . . . 'interdependent' in their pricing.").

increases profitable, such as the ability to raise price without detection, the likely duration of cheating and the difficulty of detecting cheaters and likely success of punishing them, the height of entry barriers, the availability and effects of price discrimination, the difficulty of discouraging new market entrants, and the like.⁷⁴

Robert Bork's proposal was far more ham-handed. He simply denied the existence of oligopoly as a serious antitrust problem.⁷⁵ While he appreciated Posner's idea that individual behaviors could be used to establish tacit collusion in concentrated markets, he doubted their workability. More importantly, however, he doubted "that tacit collusion is an important phenomenon, or even that it is a real phenomenon."⁷⁶ Today, Bork's bottom line conclusion that nothing can be done about oligopoly seems quaint, simplistic, and wrong. Bork's view that oligopoly simply be disregarded was never taken seriously by either mainstream writers or the courts. First, although the attack on market concentration based on evidence of high accounting profits has been largely repudiated, today it seems equally clear that increases in concentration can result in anticompetitive outcomes like increased margins and higher prices. While subsequent revisions of the original 1968 Merger Guidelines de-emphasized purely structural evidence,⁷⁷ mergers are the main example of a discrete change in market structure that can reduce competition. Therefore, structure continues to play an essential role in Horizontal Merger Guidelines revisions all the way through the current 2010 Guidelines.⁷⁸ An abundance of empirical literature supports the usefulness of the structural presumption in preventing both adverse unilateral effects and market structures likely to succumb to tacit collusion.⁷⁹

Posner's more refined proposals concerning oligopoly have had some impact in antitrust adjudication. They were taken more seriously than Bork's because Posner recognized a real problem that is well supported by the evidence. His ideas have had considerable impact on merger review. The risk of coordinated effects (tacit collusion) is higher when concentration increases,

⁷⁴ See 6 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶¶ 1428-1436 (4th ed. 2017) (expanding on these proposals and their application in the case law and literature).

⁷⁵ See BORK, *supra* note 16, at 196 ("[I]t looks very much as though there is a high probability, amounting in fact to a virtual certainty, that dissolving any oligopolistic firm that grew to its present size would inflict a serious welfare loss.").

⁷⁶ *Id.* at 175.

⁷⁷ Cf. U.S. DEP'T OF JUSTICE, *MERGER GUIDELINES* (1968), <https://www.justice.gov/sites/default/files/atr/legacy/2007/07/11/11247.pdf> [<https://perma.cc/ES5W-Q26B>].

⁷⁸ See 4 AREEDA & HOVENKAMP, *supra* note 74, ¶ 926(c) (discussing the historical development of the Department of Justice's guidelines). See generally *id.* ¶¶ 925-928.

⁷⁹ See, e.g., Herbert Hovenkamp & Carl Shapiro, *Horizontal Mergers, Market Structure, and Burdens of Proof*, 127 *YALE L.J.* 1996, 2001-08 (2018) (surveying the literature).

particularly when there is already evidence in the industry of some existing or attempted tacit collusion.⁸⁰

Nevertheless, identifying tacit behaviors that can be condemned under the Sherman Act's "contract, combination . . . or conspiracy" language has proven difficult.⁸¹ Courts almost never find a violation in the absence of more explicit and conventional communications among the defendants.⁸² Even the "[u]nfair methods of competition" language in the FTC Act,⁸³ which contains no agreement requirement, has largely proven unworkable.⁸⁴ More than forty years after making his proposal, Judge Posner drew back, mainly because the conduct it described seemed to be beyond an effective remedy.⁸⁵

This naturally places a burden on merger policy, which is "prophylactic" in the sense that it is intended to prevent anticompetitive performance that might occur after the merger, but that collusion policy itself cannot reach.⁸⁶ Even a Chicago judge such as Posner recognized in *Hospital Corp. of America v. FTC* that fewer competitors in a market would make it "easier . . . for them to coordinate their pricing without committing detectable violations of section 1 of the Sherman Act."⁸⁷ In sharp contrast, Bork argued that incipiency tests for mergers had "no value whatever."⁸⁸ In practice, enforcers do rely heavily on the likelihood of successful tacit collusion in assessing merger cases.⁸⁹ The important difference between collusion policy under the

⁸⁰ See *infra* note 89 and accompanying text.

⁸¹ 15 U.S.C. § 1 (2018).

⁸² See 6 AREEDA & HOVENKAMP, *supra* note 74, ¶ 1433(a) ("The courts are nearly unanimous in saying that mere interdependent parallelism does not establish the contract, combination, or conspiracy . . ."). See generally *id.* ¶¶ 1431-1435.

⁸³ 15 U.S.C. § 45(a)(1) (2018).

⁸⁴ See, e.g., *In re Ethyl Corp.*, 101 F.T.C. 425, 536-40 (1983) (interpreting the "unfair methods of competition" clause broadly to cover parallel behavior in oligopoly), *rev'd sub nom.* *E.I. du Pont de Nemours & Co. v. Fed. Trade Comm'n*, 729 F.2d 128 (2d Cir. 1984) (interpreting the clause narrowly by affirming that "the mere existence of an oligopolistic market structure in which a small group of manufacturers engage in consciously parallel pricing of an identical product does not violate the antitrust laws"); see also HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY § 4.6d (6th ed. 2020) ("[T]he Commission's efforts to use the FTC Act to attack collusion or oligopoly facilitators in the absence of agreement have not been encouraging").

⁸⁵ Richard A. Posner, *Review of Kaplow*, Competition Policy and Price Fixing, 79 ANTITRUST L.J. 761, 763 (2014) (book review) (reanalyzing his former position and finding force in the counterargument that one should have "doubts about the feasibility of an antitrust remedy for tacit collusion").

⁸⁶ See generally Herbert Hovenkamp, *Prophylactic Merger Policy*, 70 HASTINGS L.J. 45 (2018) (evaluating tests used for evaluating mergers involving firms in incipiency).

⁸⁷ *Hosp. Corp. of Am. v. Fed. Trade Comm'n*, 807 F.2d 1381, 1387 (7th Cir. 1986).

⁸⁸ BORK, *supra* note 16, at 131.

⁸⁹ See U.S. DEPT OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES § 7 (2010) [hereinafter 2010 HMG] (classifying a range of behaviors as "[c]oordinated interaction"); see also Nathan H. Miller et al., *Oligopolistic Price Leadership and Mergers: The United States Beer Industry* (June 14, 2019) (unpublished manuscript),

Sherman Act and merger policy is that the “may . . . substantially . . . lessen competition” language of Section 7 of the Clayton Act encompasses any behavior that might lead to noncompetitive outcomes,⁹⁰ without getting waylaid by the “contract, combination, or conspiracy” requirement.

Stigler’s critique of monopolistic competition was more aggressive but also more defensive. He argued that Chamberlin’s theory was not testable,⁹¹ a point developed a few years later by Milton Friedman.⁹² By contrast, in 1967 Paul Samuelson believed that while the tools to test monopolistic competition and oligopoly theories were not yet developed, they together represented a much more fulsome description of markets.⁹³ Through the 1960s and 1970s the model became more mainstream and applied to a variety of market structures.⁹⁴ Subsequently, other researchers brought the literature forward with new game theoretic models featuring asymmetric information, unobserved types, endogenous entry and exit, stochastic shocks, and more.⁹⁵ This literature also included advances in empirical techniques to allow estimation and testing.⁹⁶ Indeed, because there are vanishingly few perfectly competitive markets, the models and methods that accommodate imperfect and monopolistic competition are the most commonly used in the empirical literature.

https://www.ftc.gov/system/files/documents/public_events/1494697/weinbergmillersheu.pdf [<https://perma.cc/4CCH-RUFN>] (featuring a simulation of the ABI-Modelo merger using retailer scan data to evaluate the likelihood of collusion).

⁹⁰ 15 U.S.C. § 18 (2018).

⁹¹ See GEORGE J. STIGLER, *Monopolistic Competition in Retrospect*, 12, 12-24, in FIVE LECTURES ON ECONOMIC PROBLEMS (1949) (“Professor Chamberlin did not reduce his picture of reality to a manageable analytical system.”).

⁹² See MILTON FRIEDMAN, *The Methodology of Positive Economics*, in ESSAYS IN POSITIVE ECONOMICS 3, 15, 38-39 (1953) (criticizing the theory of monopolistic competition developed by Chamberlin and Robinson). Friedman believed that in its search for descriptive realism, monopolistic competition had rendered itself untestable. *Id.* at 38-41.

⁹³ See Paul A. Samuelson, *The Monopolistic Competition Revolution*, in MONOPOLISTIC COMPETITION THEORY, at 105, 108 n.5 (Robert E. Kuenne ed., 1967).

⁹⁴ See, e.g., Avinash K. Dixit & Joseph E. Stiglitz, *Monopolistic Competition and Optimum Product Diversity*, 67 AM. ECON. REV. 297, 308 (1977) (analyzing firms facing different cost structures and demand elasticities); Steven C. Salop, *Monopolistic Competition with Outside Goods*, 10 BELL J. ECON. 141, 141 (1979) (examining an example of a two-industry economy with a second commodity).

⁹⁵ See, e.g., Steven Berry et al., *Do Increasing Markups Matter? Lessons from Empirical Industrial Organization*, 33 J. ECON. PERSP. 44, 44-45 (2019) (using modern game theory to incorporate, inter alia, firm entry conditions); Aviv Nevo, *Mergers with Differentiated Products: The Case of the Ready-to-Eat Cereal Industry*, 31 RAND J. ECON. 395, 400 (2000) (adjusting for unobserved product characteristics); see also Timothy F. Bresnahan & Richard Schmalensee, *The Empirical Renaissance in Industrial Economics: An Overview*, 35 J. INDUS. ECON. 371 (1987) (discussing the empirical progress that had already occurred by the 1980s).

⁹⁶ See, e.g., Steven Berry et al., *Automobile Prices in Market Equilibrium*, 63 ECONOMETRICA 841 (1995).

Models of imperfect competition are also now used to estimate the unilateral price effects likely to result from a merger.⁹⁷ A classic setting is an oligopoly where each firm produces a portfolio of differentiated products such as cereal, beer, automobiles, or media. Modern techniques—with appropriate data—can measure how closely the products of the merging firms compete with one another. Mergers of products that consumers judge to be closer substitutes permit larger price increases, all else equal. When detailed data or the right setting are not available, the plaintiff can generate an estimate of likely harm by using simpler calculations such as UPP (“upward pricing pressure”) which relies on the theory of monopolistic competition but requires a knowledge only of margin and diversion or market shares.⁹⁸

C. Barriers to Entry

Harvard School economist Joe S. Bain had done pioneering work on entry barriers in the 1950s.⁹⁹ Bain defined entry barriers as any market factor that blocked entry while yet permitting the firms in the market to charge above cost prices.¹⁰⁰ That definition was completely indifferent to whether the source of the entry barrier or the defendant’s conduct was socially desirable. Bain wanted to know only whether the conditions of entry tended to shelter the exercise of monopoly power.

By contrast, the Stigler/Chicago School definition of entry barriers was much more normative, describing them as “a cost of producing . . . which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry.”¹⁰¹ One difference between the Bain and Stigler approaches occurs in the presence of fixed costs plus economies of scale,

⁹⁷ These models generally do not track the orthodox theory of monopolistic competition because they do not presume that entry is free. Indeed, they condemn mergers only if entry barriers are sufficient to suggest that higher post-merger prices will not be disciplined by new entry. See 2010 HMG, *supra* note 89, § 9 (“A merger is not likely to enhance market power if entry into the market is so easy that the merged firm and its remaining rivals in the market . . . could not profitably raise price . . . compared to the level that would prevail in the absence of the merger.”).

⁹⁸ Joseph Farrell & Carl Shapiro, *Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition*, 10 B.E. J. THEORETICAL ECON. 1, 1 (2010) (making the case for using UPP as a “simple and speedy indicator” of whether a proposed merger is likely to raise prices).

⁹⁹ See JOE S. BAIN, BARRIERS TO NEW COMPETITION 1 (2d prtng. 1962) (examining “the character and significance of the ‘condition of entry’ to manufacturing industries”). Bain was educated at Harvard but spent most of his career at the University of California at Berkeley. See HOVENKAMP, *supra* note 8, at 213.

¹⁰⁰ See BAIN, *supra* note 99, at 3 (defining entry barriers as “the extent to which established sellers can persistently raise their prices above a competitive level without attracting new firms to enter the industry”).

¹⁰¹ STIGLER, *supra* note 14, at 67; see also *United States v. Microsoft Corp.*, 253 F.3d 34, 56 (D.C. Cir. 2001) (*per curiam*) (noting the difference between the two tests but finding it unnecessary to resolve the question).

which may give a decisive advantage to incumbent firms. For example, if minimum efficient scale in a market is 30% of sales at the competitive price, three firms already in that market can collectively charge above cost prices without incurring entry. This makes scale economies a qualifying entry barrier under the Bainian definition but not the Stiglerian definition, because the difficulties faced by the fourth firm are no greater than those overcome by the first three.¹⁰² Network effects can operate in the same way, giving early—and perhaps lucky—entrants a decisive advantage.¹⁰³

Stigler's point was that there is nothing undesirable about scale economies or network effects. However, Stigler is incorrect, first because those forces will cause different effects depending on the setting, and second, the welfare economics may not be positive unless every entry barrier simply returns appropriate gains to an efficient, foresighted firm. If not, they may create cost savings or benefit increases, but they also can create higher prices, lower quality, and less innovation.¹⁰⁴ Importantly, antitrust law does not punish firms for taking advantage of high entry barriers and overcoming risk. Rather, the impact of entry barriers is relevant to antitrust because they operate as part of the environment within which conduct must be evaluated.¹⁰⁵

In Stigler's defense, he was writing against a background of structuralism and very weak requirements for anticompetitive conduct by dominant firms.¹⁰⁶ If one thinks of antitrust violations as being inherently without fault, then the Stigler definition makes more sense. In a system where conduct is evaluated from a more neutral starting point, however, it does not serve any useful purpose. For example, if a large firm in an industry subject to significant scale economies excludes a rival by filing a fraudulent patent infringement action,¹⁰⁷ the question is whether the conduct realistically

¹⁰² See Harold Demsetz, *Barriers to Entry*, 72 AM. ECON. REV. 47, 47-48 (1982) (finding that economies of scale are an entry barrier for Bain, but not for Stigler "so long as entrants have access to the same cost function"); Harold Demsetz, *Industry Structure, Market Rivalry, and Public Policy*, 16 J.L. & ECON. 1 (1973) [hereinafter Demsetz, *Industry Structure*].

¹⁰³ Gregory J. Werden, *Network Effects and Conditions of Entry: Lessons from the Microsoft Case*, 69 ANTITRUST L.J. 87, 91-92 (2001) (arguing that network effects are frequently insurmountable for new entrants, absent another substantial competitive advantage over incumbents).

¹⁰⁴ See Berry et al., *supra* note 95, at 45 (identifying welfare effects for consumers as ranging from ambiguous to altogether absent).

¹⁰⁵ For example, the 2010 Horizontal Merger Guidelines discuss the role of entry barriers in evaluating a merger. Higher entry barriers allow more exercise of any new market power by the combined firm. See 2010 HMG, *supra* note 89, § 9.

¹⁰⁶ See generally HOVENKAMP, *supra* note 8, at 206-19 (discussing structuralism and U.S. antitrust policy).

¹⁰⁷ See, e.g., *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 173 (1965) (considering whether a firm's maintenance and enforcement of a fraudulent patent against a rival can constitute a violation of Section 2 of the Sherman Act); see also 4 AREEDA & HOVENKAMP, *supra* note 74, ¶ 706 (explaining how bad faith patent infringement actions are exclusionary under Section 2).

threatens to prolong or enlarge the defendant's market power while deterring entry. Simply saying that the conduct is beyond challenge because any new firms would face the same entry costs as the dominant firm had faced serves to protect harmful monopoly.

D. Market Structure and Mergers

The Chicago School was itself divided on merger policy. Bork largely denied the theory of oligopoly and believed that all mergers except those to near monopoly should be lawful.¹⁰⁸ Posner's position was more relaxed than existing law at that time, but not nearly as extreme as Bork's. He would be more likely to condemn mergers in markets where the four largest firms accounted for more than 60% of the market.¹⁰⁹

In the 1980s both the Supreme Court and government enforcement policy began to deemphasize the role of pure structure and added other factors, including nonstructural features bearing on the risk of collusion, barriers to entry, and efficiencies.¹¹⁰ Even so, structural features have always been central to the analysis of horizontal mergers, given the fear that they might facilitate collusion or collusion-like behavior. They remain a dominant feature in the 2010 Horizontal Merger Guidelines for collusion-facilitating mergers.¹¹¹

By contrast, the dramatic rise of "unilateral effects" merger analysis¹¹² does not fit into Chicago School antitrust economics at all. As noted previously, the School was strongly resistant to monopolistic competition analysis. Under monopolistic competition theory, firms can profit by differentiating their products so as to create greater distance between themselves and their nearest competitors. Unilateral effects theory shows that firms can raise prices by merging with rivals that are close in product space, leaving a lower cross-elasticity of demand between their new set of products and their closest remaining rivals.¹¹³ Unilateral effects theory additionally requires a barrier (in the Bainian sense) such that entrants cannot enter in a

¹⁰⁸ See *supra* notes 75–76 and accompanying text.

¹⁰⁹ RICHARD A. POSNER, *ANTITRUST LAW* 112 (1976) ("There is little basis in current thinking for automatic intervention in markets in which the four largest firms have a combined market share of less than 60 percent.").

¹¹⁰ See Demsetz, *Industry Structure*, *supra* note 102, at 5 (commenting on the need to look at reasons for high concentration levels).

¹¹¹ 2010 HMG, *supra* note 89, § 7 (discussing the structural features that make a market more vulnerable to coordinated conduct).

¹¹² *Id.* § 6 (describing different ways in which the merger of two firms may, in itself, unilaterally and substantially reduce competition).

¹¹³ See 4 AREEDA & HOVENKAMP, *supra* note 74, ¶ 914.

timely, likely, and sufficient manner and incumbents cannot quickly reposition to replace the lost competition.¹¹⁴

Models of vertical relationships that include bargaining and sophisticated econometrics can be used to evaluate vertical mergers, disposing of Bork's strong conclusion that vertical mergers are virtually never anticompetitive. For example, as a result of a vertical acquisition a firm with a significant position in a primary market might be able to increase prices if revenue losses at that level are more than offset by captured sales at a secondary level. The techniques are similar to those used to evaluate the unilateral effects of horizontal mergers.¹¹⁵ The government agencies' recently released Vertical Merger Guidelines discuss several of these possibilities.¹¹⁶

As the discipline of economics has become richer and more able to reflect the true economy over time, realistic elements such as entry and mobility barriers have become better understood. The value of a brand, as well as the difficulty of creating intangible assets such as reputation for quality, internal economies of scope, organizational culture, and the like are now carefully modeled in the literature.¹¹⁷ In addition, regulatory barriers such as license requirements, intellectual property, creation of distribution channels and so forth, all combine to mean that entry barriers are common. The rise of the digital economy and the impact of scale, scope, network effects, and the power of an installed base show that entry barriers in many growing industries are getting bigger, not smaller.¹¹⁸

E. *Leverage, Foreclosure, and Exclusion*

The term "leverage" means different things, but generally refers to the idea that a firm with power in one market can use it as a "lever" to extend that power into a second market. The Chicago critique of the leverage theory rested on the premise that the demand for strong complements, such as a typewriter and a ribbon, is based on consumers' willingness to pay for the

¹¹⁴ See *supra* notes 101–03 and accompanying text.

¹¹⁵ See *supra* notes 97–98 and accompanying text.

¹¹⁶ U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, VERTICAL MERGER GUIDELINES (2020), https://www.ftc.gov/system/files/documents/reports/us-department-justice-federal-trade-commission-vertical-merger-guidelines/vertical_merger_guidelines_6-30-20.pdf [<https://perma.cc/6Y6B-26V7>] [hereinafter 2020 VMG]. Examples 3 and 6 show how vertical mergers could produce anticompetitive effects. *Id.* at 7, 9.

¹¹⁷ For further explanation of some of these concepts, see PAUL MILGROM & JOHN ROBERTS, ECONOMICS, ORGANIZATION, AND MANAGEMENT (1992) and DAVID KREPS & JAMES BARON, STRATEGIC HUMAN RESOURCES (1999).

¹¹⁸ See MARKET STRUCTURE & ANTITRUST SUBCOMM., REPORT, in FINAL REPORT 23, 119–21 (Stigler Comm. on Digital Platforms ed., 2019) (noting that "certain characteristics of digital technology" enable the creation of entry barriers).

package.¹¹⁹ The idea that someone can earn additional monopoly profits by combining complementary goods is thus an economic fallacy. The critique was aimed at decisions such as Justice Brandeis's opinion in *Carbice Corp. v. American Patents Development Corp.*, where the seller of a patented ice box required buyers to purchase its own dry ice, an essential refrigerant.¹²⁰ The tying arrangement did not exclude anyone because dry ice was a common unpatentable commodity and the ice box itself, although patented, was never shown to dominate any market.

But Brandeis was not concerned about use of the tie to exclude rivals. Rather, it was the possibility that it could produce an overcharge by enabling the patentee "to derive its profit, not from the invention on which the law gives it a monopoly but from the unpatented supplies with which it is used."¹²¹ If a monopoly could be contractually expanded in this way, Justice Brandeis opined, a patentee "might conceivably monopolize the commerce in a large part of unpatented materials used in its manufacture."¹²²

Brandeis did not invent the patent leverage theory. It originated in patent law nearly a century earlier, long before the Sherman Act was passed, in patent exhaustion cases holding that patentees "are entitled to but one royalty for a patented machine."¹²³ As a result, patent doctrine forbade a patentee from selling a patented device and then attempting to collect royalties a second time through the use of post-sale restraints.¹²⁴

In his critique of tying, Ward Bowman showed that in a very simple setting one cannot enlarge monopoly profits simply by tying two complements. Consumers would pay more for one product only if the price of the other product were proportionately reduced. This is known as the theory of One Monopoly Rent or Single Monopoly Profit. But it is a result that can easily be broken if the setting is made more realistic. For example, gains from tying can arise from second degree price discrimination. The patentee could tie overpriced dry ice, reduce the price of the box, and earn higher profits by both expanding use of the device and earning more from

¹¹⁹ Ward S. Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 *YALE L.J.* 19, 20 (1957) ("[T]he tying sale is only a means of utilizing effectively a power already possessed . . ."); see also Posner, *Chicago School*, *supra* note 69, at 929, 933-35 (1979) (arguing that consumers only care about the total price of a product's components, so a seller with a monopoly on one component cannot extract additional profit by monopolizing a second component).

¹²⁰ *Carbice Corp. v. Am. Patents Dev. Corp.*, 283 U.S. 27, 31 (1931).

¹²¹ *Id.* at 31-32 (quoting *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 517 (1917)).

¹²² *Id.* at 32.

¹²³ *Bloomer v. Millinger*, 68 U.S. (1 Wall.) 340, 350 (1863).

¹²⁴ See Herbert Hovenkamp, *United States Competition Policy in Crisis: 1890-1955*, 94 *MINN. L. REV.* 311, 364-65 (2009) (stating that the "first sale" doctrine prevented patentees from extracting additional revenue from "downstream sales").

high intensity users of the combination. Such a tie would produce uncertain but likely positive welfare effects, particularly since its effect would generally be to increase output.¹²⁵ This type of tie is extremely common.¹²⁶

While Bowman's argument is widely identified with the Chicago School's attack on leverage, the arguments had appeared much earlier in economists' disputes about vertical integration.¹²⁷ Already in the 1930s New York University economist Myron Watkins had observed that leverage as Brandeis characterized it was a fallacy: a price increase in the tying product would impose a "handicap" upon distribution of the second article.¹²⁸ The result was that any advantage from a price change in one article would be offset by a "commensurate disadvantage" in the other.¹²⁹

Under Chicago doctrine a patent is an investment which the inventor should be allowed to monetize without limit because this will efficiently stimulate more innovation. This simplistic argument does not hold up under scrutiny; in the right circumstances a patent can provide the sort of market power that can be used to carry out illegal conduct such as exclusion in other markets. The *FTC v. Qualcomm Inc.* case is an example.¹³⁰ Qualcomm would only sell chips on which it had a monopoly to handset makers who both licensed its patents and agreed not to challenge them.¹³¹ Despite having

¹²⁵ See Erik N. Hovenkamp & Herbert Hovenkamp, *Tying Arrangements and Antitrust Harm*, 52 ARIZ. L. REV. 925, 928-44 (2010) (finding that second-degree price discrimination is often welfare-increasing).

¹²⁶ Consider razors and razor blades, printers and ink cartridges, mainframes and punch cards, and coffee machines and pods.

¹²⁷ See Herbert Hovenkamp, *Robert Bork and Vertical Integration: Leverage, Foreclosure, and Efficiency*, 79 ANTITRUST L.J. 983, 987, 994 (2014) ("One of the most astute observers of vertical integration was Columbia economist John Maurice Clark, who rejected the 'leverage' or 'double monopoly profit' theory of vertical integration in 1923 in his book on the economics of fixed costs.").

¹²⁸ See MYRON WATKINS, PUBLIC REGULATION OF COMPETITIVE PRACTICES IN BUSINESS ENTERPRISE 220-21 (3d ed. 1940).

¹²⁹ See *id.* John Maurice Clark had critiqued the theory even earlier, in his 1923 book on fixed costs. See Hovenkamp, *supra* note 127, at 987-89 (discussing J. MAURICE CLARK, STUDIES IN THE ECONOMICS OF OVERHEAD COSTS 136-137 (1923)). Other economists, such as MIT's Morris Adelman, also rejected Justice Brandeis' version of the leverage theory. See M.A. Adelman, *Integration and Antitrust Policy*, 63 HARV. L. REV. 27, 45 (1949) (arguing that the primary concern with vertical integration is market foreclosure); see also William B. Lockhart & Howard R. Sacks, *The Relevance of Economic Factors in Determining Whether Exclusive Arrangements Violate Section 3 of the Clayton Act*, 65 HARV. L. REV. 913, 944 (1952) (explaining that vertical integration forecloses access to a market by competing suppliers). Writing in 1954, regulatory economist Alfred E. Kahn spoke in similar terms, describing tying arrangements as occurring on the "[b]orderline between [c]ompeting and [f]oreclosing." Alfred E. Kahn, *A Legal and Economic Appraisal of the "New" Sherman and Clayton Acts*, 63 YALE L.J. 293, 328 (1954).

¹³⁰ Fed. Trade Comm'n v. Qualcomm Inc., 411 F. Supp. 3d 658 (N.D. Cal. 2019), *rev'd*, 969 F.3d 974 (9th Cir. 2020); see also Herbert Hovenkamp, *FRAND and Antitrust*, 105 CORNELL L. REV. 1683, 1685 (2020) (explaining how Qualcomm used discriminatory patent licensing to violate antitrust laws).

¹³¹ *Qualcomm*, 411 F. Supp. 3d at 673.

signed a contract promising to license those patents on fair and reasonable terms (FRAND), it refused to license them to rival chip makers.¹³² In addition, it employed loyalty rebates to prevent customers from sourcing chips for their new products from rival chip entrants, thus preserving a monopoly in chips.¹³³ The whole strategy was monetized through supracompetitive patent royalties, all of which were bilaterally negotiated, secret, and could not be challenged in court without the handset maker losing access to chip supply. This type of more complex setting—of which there are many modeled in the modern literature—demonstrates the manifold ways that patents can be used to harm competition.

During its heyday, the leverage theory was influential and largely accounts for development of the per se rule against tying, which did not even require a showing of foreclosure, or market exclusion. It was an “extraction” theory rather than a foreclosure theory. The tying plaintiff could succeed by showing that a “substantial volume” of commerce was covered by the tie.¹³⁴ The Harvard School was not responsible for these developments. Harvard School scholars either rejected the theory or refused to defend it.¹³⁵ For example, Carl Kaysen and Donald Turner did not defend it in their 1959 book on antitrust policy, roughly contemporaneous with Bowman’s article.¹³⁶ Even before Bork published *The Antitrust Paradox*, Areeda spoke strongly against it.¹³⁷

The theory that more accurately separated the Chicago and Harvard schools was “foreclosure,” or the idea that certain types of exclusive contracting or other practices could exclude rivals or raise their costs. The dominant firm could then charge a higher price. That theory did not depend on the mistaken arithmetic of vertical leverage, although it did reflect the Harvard belief that barriers to entry were more significant and pervasive than Chicago theory acknowledged. Indeed, Bork’s critique of foreclosure largely identified it with leverage by assuming that entry would occur any time a firm attempted to charge more than the competitive price for a tied good. When

¹³² *Id.* at 671-72.

¹³³ *Id.* at 722 (“In sum, Qualcomm engaged in anticompetitive conduct toward BlackBerry by conditioning chip supply assurances on BlackBerry signing a Qualcomm patent license agreement and by paying BlackBerry chip incentive funds that functionally required BlackBerry to buy Qualcomm modem chips, to the exclusion of rivals’ modem chips.”).

¹³⁴ See 9 AREEDA & HOVENKAMP, *supra* note 74, ¶¶ 1721, 1721d3(c) (stating that the per se rule requires “power over the tying product and coverage of a ‘not insubstantial’ volume of commerce in the tied product”).

¹³⁵ *Cf.* Herbert Hovenkamp, *supra* note 124, at 366 (“[T]he leveraging theory never held a secure place in . . . the writings of Harvard School economists and lawyers . . .”).

¹³⁶ See CARL KAYSEN & DONALD F. TURNER, *ANTITRUST POLICY* (1959).

¹³⁷ See Phillip E. Areeda, *Antitrust Violations Without Damage Recoveries*, 89 HARV. L. REV. 1127, 1138 (1976) (arguing that tying product overcharges are inherently offset by price reductions in the tied product).

that assumption is relaxed, foreclosure is possible, particularly when the practice itself makes the structure of the affected market less competitive.¹³⁸ Thus, for example, while Kaysen and Turner did not embrace the “double monopoly profits” theory of tying, they did accept that tying arrangements in the presence of power served to create entry barriers in the market for the tied product.¹³⁹ Under their theory a tie raised entry barriers for the tied good “to the level of those in the market for the tying good.”¹⁴⁰ Their example was IBM’s tie of computer punch cards.¹⁴¹ While entry into the punch card market was easy, entry into computer manufacturing was not.¹⁴² They declined to extend this per se rule to exclusive dealing, because in their view an exclusive dealing contract “may provide substantial gains in certainty and ability to plan forward . . . in a market in which supplies or demands fluctuate unpredictably and widely.”¹⁴³ Kaysen and Turner exaggerated the differences between exclusive dealing and tying, both of which can involve entrepreneurial risk sharing. Indeed, today the distinction between exclusive dealing and tying often fades into the hyper-technical question whether the tie involves separate products.¹⁴⁴

The Chicago position on foreclosure was, once again, insistence that markets will work themselves pure. A firm claiming foreclosure was simply a whining loser who was unable to compete in the marketplace.¹⁴⁵ This assumption and attitude have been undermined by an enormous economics literature demonstrating the existence of profitable foreclosure strategies,

¹³⁸ See, e.g., Louis Kaplow, *Extension of Monopoly Power Through Leverage*, 85 COLUM. L. REV. 515, 524-25 (1985) (discussing how prices charged by incumbent firms can affect entry into a market); Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 AM. ECON. REV. 837, 837 (1990) (stating that tying allows a firm with a monopoly in one market to foreclose sales in a related market).

¹³⁹ KAYSEN & TURNER, *supra* note 136, at 157-58.

¹⁴⁰ *Id.* at 157.

¹⁴¹ *Id.*

¹⁴² *Id.* at 157-58.

¹⁴³ *Id.* at 159.

¹⁴⁴ See, e.g., *Jefferson Par. Hosp. Dist. v. Hyde*, 466 U.S. 2, 18-25 (1984) (analyzing whether exclusive anesthesiology contract involved separate products or a package). In the franchise context, see *Krehl v. Baskin-Robbins Ice Cream Co.*, 664 F.2d 1348, 1352 (9th Cir. 1982), in which what was essentially exclusive dealing was characterized by the plaintiffs as tying the Baskin-Robbins trademark (the alleged tying product) and ice cream (the alleged tied product).

¹⁴⁵ In *The Limits of Antitrust*, Easterbrook wrote that

every successful competitive practice has victims. The more successful a new method of making and distributing a product, the more victims, the deeper the victims’ injury. . . . It is a neverending [sic] process of weeding out the sluggish and the inefficient. Yet those who lose in the competitive struggle do not view the outcome as just.

Easterbrook, *supra* note 22, at 5.

both in theory and in the marketplace.¹⁴⁶ The government's 2020 Vertical Merger Guidelines also identify many circumstances in which foreclosure of rivals is profitable and anticompetitive.¹⁴⁷

The law of exclusionary pricing engaged two of Chicago's most cherished themes. First was its doubts about the existence and significance of entry barriers, which the law expressed in a strict "recoupment" requirement. Second was a belief that the basic practice of driving rivals out of business by charging very low prices was so risky in relation to realistic payoffs as to be irrational, which was the position that Bork took in *The Antitrust Paradox*.¹⁴⁸ An irrational practice would not be undertaken by a meritorious competitor and therefore plaintiffs must be inefficient firms using the courts to try to make up for their failings. Areeda and Turner's well known 1975 law review article on predatory pricing, which preceded *The Antitrust Paradox* by three years, reflected similar concerns, although less vehemently. Areeda and Turner first asserted a recoupment requirement, although they did not elaborate on it in much detail, except for an insistence that the defendant be a "monopolist."¹⁴⁹ They also proposed the average variable cost test for predatory pricing, which made it extremely difficult to prove.¹⁵⁰ Indeed, even Judge Posner, whose views diverged from Bork's, described the Areeda-Turner test as "toothless."¹⁵¹ The Supreme Court has adopted both prongs of the Areeda-Turner test,¹⁵² although the practical result has come very close to the Chicago School result—namely, predation plaintiffs virtually always lose.

Modern courts have made predatory pricing effectively impossible to prove. For example, *Brooke Group* assumes away all oligopoly cases in

¹⁴⁶ See Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 YALE L.J. 209, 230 (1986) (summarizing this position during the heyday of this debate).

¹⁴⁷ 2020 VMG, *supra* note 116, § 4(a) (describing scenarios in which foreclosure could be profitable and anticompetitive).

¹⁴⁸ BORK, *supra* note 16, at 144-59 (describing the theory and practice of predatory pricing with skepticism).

¹⁴⁹ See Phillip Areeda & Donald F. Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 HARV. L. REV. 697, 698 (1975) ("[T]he classically-feared case of predation has been the deliberate sacrifice of present revenues for the purpose of driving rivals out of the market and then recouping the losses through higher profits earned in the absence of competition."); see also *id. passim* (limiting discussion to "monopolists"); cf. 3A AREEDA & HOVENKAMP, *supra* note 74, ¶¶ 725-726 (arguing for structural query similar to that in monopolization cases generally, but against a specific recoupment requirement because it limits claims against defendants whose predatory pricing was irrational).

¹⁵⁰ See Areeda & Turner, *supra* note 149, at 716-18.

¹⁵¹ See RICHARD A. POSNER, ANTITRUST LAW 219 (2d ed. 2001); see also POSNER, *supra* note 109, at 188-89 (describing Posner's own theory of predatory pricing as requiring either a price below short-run marginal cost or a price below long-run marginal cost with intent to exclude).

¹⁵² See, e.g., *Weyerhaeuser Co. v. Ross-Simmons Hardwood Lumber Co.*, 549 U.S. 312 (2007) (most explicitly demonstrating the adoption of this position).

contravention of economic theory.¹⁵³ Average variable cost tests eliminate liability for all products with low or zero marginal costs like airline seats or digital goods.

F. Error Cost Analysis

One important element of the Chicago School's ideology was its analysis of error costs that put large weight on type one errors, or false positives, and very little weight on type two errors, or false negatives.¹⁵⁴ Given the Chicago assumption that markets tend to be self-correcting, type two errors—where the court fails to see anticompetitive conduct that actually exists—are not really problematic because the market itself will correct the situation.¹⁵⁵ By contrast, false identification of harmful monopoly tends not to be self-correcting because a court blocks the efficient conduct for a long time.

This argument is part and parcel with the Chicago School's belief that competitive equilibria are more robust and more durable than oligopoly, monopolistic competition, monopoly, or any alternative. But invalidating that premise largely undermines the Chicago approach to error costs. If we reverse the premise and assume that markets tend more naturally to situations of market power, then the opposite presumption is warranted. Economic theory and evidence developed over the last forty years strongly support the reversed premise. Game theory teaches us that there are many settings in which rivals find it in their interest to engage in collusion or collusion-like behavior. Simple models demonstrate that mergers to monopoly are profitable for all firms. The literature includes many profitable strategies for exclusion; these allow a (typically) larger firm to drive its rivals out of the industry or into a niche position using, for example, its profit to reward a collaborator or its market share as an inducement. Given the strong incentive that firms have to cease competing, and the strong ability they have to reduce competition in

¹⁵³ See *Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993).

¹⁵⁴ See Easterbrook, *supra* note 22, at 15 (“In which direction should these rules err? For a number of reasons, errors on the side of excusing questionable practices are preferable.”); see also Kevin A. Bryan & Erik Hovenkamp, *Startup Acquisitions, Error Costs, and Antitrust Policy*, 87 U. CHI. L. REV. 331, 334 (2020) (analyzing platform acquisitions of startups to show how false negatives can lead to monopoly); Erik Hovenkamp & Steven C. Salop, *Asymmetric Stakes in Antitrust Litigation 2-4* (Mar. 29, 2020) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3563843 (showing that litigation against dominant firms is systematically biased against challengers); cf. Jonathan B. Baker, *Taking the Error Out of “Error Cost” Analysis: What’s Wrong with Antitrust’s Right*, 80 ANTITRUST L.J. 1, 2 (2015) (arguing that antitrust conservatives “systematically overstate the incidence and significance of false positives [and] understate the incidence and significance of false negatives”).

¹⁵⁵ See, e.g., Easterbrook, *supra* note 22, at 15 (“[T]he economic system corrects monopoly more readily than it corrects judicial errors. . . . [I]n many cases the costs of monopoly wrongly permitted are small, while the costs of competition wrongly condemned are large.”).

the absence of antitrust laws, it is economically naïve to assume that markets will naturally tend toward competition.

II. INFLUENCE ON ANTITRUST JURISPRUDENCE

A. *The Chicago and Harvard Schools*

The Chicago School's influence on antitrust decision making in the federal courts has been more ideological than technical. In choosing technical rules, the Supreme Court has almost always looked to the Harvard School. One important reason for this is that Chicago School positions were stated with extreme breadth but weak evidentiary support. The main culprit here was Robert Bork, whose views often reached far beyond the evidence.

But Chicago School scholarship overreached in other ways. For example, Lester Telser's argument that resale price maintenance ("RPM") might be economically efficient by reducing the opportunities for harmful free riding was brilliant, but it described only a subset of RPM practices.¹⁵⁶ While the argument was later offered as a general explanation for RPM, by its own terms it was limited to instances where *manufacturers* would want it. An equally robust theory was the idea that RPM was instigated by dealers who were seeking a way to fix their own prices or perhaps at the behest of a powerful local dealer or dealer cartels who insisted on maintained prices for their own benefit.¹⁵⁷

Much of the Chicago School's disdain for the law of vertical restraints flows from its severe doubts about monopolistic competition. For example, members of the Chicago School rejected the idea that so-called "intra-brand" cartels were a significant problem, essentially rejecting the possibility of single brand cartels in differentiated markets.¹⁵⁸ While the Supreme Court wisely overruled the per se rules against nonprice restraints and RPM, it adopted the rule of reason advocated by the Harvard School, rather than the Chicago preference for rules of per se legality.¹⁵⁹

¹⁵⁶ Lester G. Telser, *Why Should Manufacturers Want Fair Trade?*, 3 J.L. & ECON. 86, 92 (1960) (outlining how resale price maintenance benefits manufacturers who want their retailers to offer special services such as demonstrations of the product).

¹⁵⁷ This was almost certainly true of the original *Dr. Miles* case, in which RPM was facilitated by a retail druggists' cartel. See *Dr. Miles Med. Co. v. John D. Park & Sons Co.*, 220 U.S. 373 (1911); HERBERT HOVENKAMP, *ENTERPRISE AND AMERICAN LAW, 1836-1937*, at 340-47 (1991) (describing a cartel of retail druggists that involved *Dr. Miles*, their supplier, in RPM).

¹⁵⁸ Stating the Chicago position is the late Wesley J. Liebeler. See Wesley J. Liebeler, *Intra-brand "Cartels" Under GTE Sylvania*, 30 UCLA L. REV. 1, 4-5 (1982) (arguing that intra-brand restrictions are not a concern of antitrust because they are not likely to restrict output).

¹⁵⁹ *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 901 (2007) (overruling the previous per se rule and adopting a rule of reason in retail price maintenance cases); see also 8

Overall, the Chicago School attitude toward exclusionary practices was very benign, approaching per se legality for many of them. The Supreme Court has nearly always followed the Harvard approach of applying a rule of reason but being rather strict about standards of proof.¹⁶⁰ The net result is that plaintiffs lose many cases. Litigation under the rule of reason has become extremely costly, to the point that the antitrust laws no longer effectively protect competition. An important part of any antitrust agenda for the future must be making the rule of reason more capable of balanced administration. This means that the plaintiff's prima facie case must be less elaborate and burdensome, and proof of defenses—where the information is generally in the possession of the defendant—must be more exacting.

B. Other Supreme Court Departures from Chicago Antitrust

The Chicago School has lost ground in the Supreme Court not only vis-à-vis Harvard School antitrust but in other ways as well, and even when Justices vote against enforcement. Recent examples include¹⁶¹ the majority opinion in *Ohio v. American Express Co.*,¹⁶² both opinions in *Apple, Inc. v. Pepper*,¹⁶³ and the three-Justice dissent in the *North Carolina State Board of Dental Examiners v. FTC* case.¹⁶⁴

The *AmEx* majority found that AmEx's restraint on merchants' practice of "steering" customers from high cost AmEx to cheaper cards suggested that the latter were free riding on AmEx's investment.¹⁶⁵ The free rider problem has a distinctly Chicago School origin,¹⁶⁶ but the majority completely flubbed the economics. As the dissent correctly pointed out, the majority overlooked the fact that AmEx's perks are not awarded simply for card possession; rather, they are given only for transactions actually made with the American Express

AREEDA & HOVENKAMP, *supra* note 74, ¶ 1620 (discussing the adoption of a rule of reason in *Leegin* and how it overruled the per se *Dr. Miles* rule that preceded it).

¹⁶⁰ See also Hillary Greene & D. Daniel Sokol, *Judicial Treatment of the Antitrust Treatise*, 100 IOWA L. REV. 2039, 2059 (2015) (noting a shift from the Chicago to Harvard view in the mid-1980s); Hovenkamp, *supra* note 11, at 597 ("The Supreme Court has nearly always followed the Harvard approach."); Kovacic, *supra* note 2.

¹⁶¹ See also *Cal. Dental Ass'n v. Fed. Trade Comm'n*, 526 U.S. 756 (1999); POSNER, ANTITRUST LAW (2d ed. 2001), *supra* note 151, at 30 (arguing that *California Dental* was too naïve about collusion).

¹⁶² *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2279 (2018) (Thomas, J.).

¹⁶³ *Apple, Inc. v. Pepper*, 139 S. Ct. 1514, 1518 (2019) (5-4 decision) (Kavanaugh, J.); *id.* at 1525 (Gorsuch, J., dissenting).

¹⁶⁴ *N.C. State Bd. of Dental Exam'rs v. Fed. Trade Comm'n*, 574 U.S. 494, 516 (2015) (Alito, J., dissenting).

¹⁶⁵ See *Am. Express Co.*, 138 S. Ct. at 2289-90 ("Amex's competitors have exploited its higher merchant fees to their advantage.").

¹⁶⁶ See Telser, *supra* note 156, at 91.

card.¹⁶⁷ As a result, free riding was not possible: AmEx was able to capture all of the returns for its card user perks.¹⁶⁸

In a clear assault on economics, and citing neither evidence nor argument, the Court also held as a matter of law that a relevant market must be identified in a vertical restraints case whether or not power was better proven by direct means.¹⁶⁹ The fact that all credit card transactions are digitized and recorded indicates that direct proof from observations of demand responses to price changes would be a superior device for assessing power in this market. The Court's statement of this position is regressive and discussed none of the relevant literature or arguments.¹⁷⁰

Finally, the Court stated an egregiously overgeneralized observation that on two-sided platforms, harms on one side will be offset by benefits on the other side.¹⁷¹ This amounts to assuming a conclusion of interest. In fact, the anti-steering rule at issue in this case harmed *both* sides of the market, the affected card holders as well as the merchants, by denying them the ability to make a more favorable deal.¹⁷² This was not Chicago School economics. It was economic nonsense.

Apple Inc. v. Pepper reflects similar problems.¹⁷³ In *Illinois Brick v. Illinois*, which preceded *Apple*, the Supreme Court held that only customers who purchase directly from a defendant can maintain a damages action under Section 4 of the Clayton Act.¹⁷⁴ The jurisprudence of *Illinois Brick* has focused

¹⁶⁷ See *Am. Express Co.*, 138 S. Ct. at 2304 (Breyer, J., dissenting).

¹⁶⁸ See Herbert Hovenkamp, *Platforms and the Rule of Reason: The American Express Case*, 2019 COLUM. BUS. L. REV. 35, 65 (2019) (explaining that free riding was not possible because “Amex rewards attach to *specific transactions*, not to mere possession of the card”).

¹⁶⁹ The Court's complete statement of this conclusion was contained in a single although lengthy footnote:

The plaintiffs argue that we need not define the relevant market in this case because they have offered actual evidence of adverse effects on competition—namely, increased merchant fees. . . . We disagree. The cases that the plaintiffs cite for this proposition evaluated whether horizontal restraints had an adverse effect on competition. . . . Given that horizontal restraints involve agreements between competitors not to compete in some way, this Court concluded that it did not need to precisely define the relevant market to conclude that these agreements were anticompetitive. . . . But vertical restraints are different. . . . Vertical restraints often pose no risk to competition unless the entity imposing them has market power, which cannot be evaluated unless the Court first defines the relevant market.

Am. Express Co., 138 S. Ct. at 2285 n.7 (internal citations omitted).

¹⁷⁰ *Id.*; Hovenkamp, *supra* note 168, at 50-52 (describing the Court's explanation as a “confusing statement [that] appears to do no more than assume the conclusion”).

¹⁷¹ *Am. Express Co.*, 138 S. Ct. at 2288.

¹⁷² See Erik Hovenkamp, *Platform Antitrust*, 44 J. CORP. L. 713, 741 (2019) (“In every instance in which a merchant is injured by the steering restraint, there must also be an injured cardholder.”).

¹⁷³ *Apple Inc. v. Pepper*, 139 S. Ct. 1514 (2019).

¹⁷⁴ *Ill. Brick Co. v. Illinois*, 431 U.S. 720, 735 (1977).

heavily on the difficulties of computing passed-on damages.¹⁷⁵ Several states have amended their antitrust laws so as to permit passed-on damages, and the Supreme Court has permitted such statutes.¹⁷⁶ The *Apple* majority, however, ignored the passing on issue and looked only at the fact that the plaintiffs paid money directly to the defendant.¹⁷⁷ The dissenters also ignored the economic issue. They concluded that Section 4 of the Clayton Act, which gives a damages action to “any person who shall be injured in his business or property,”¹⁷⁸ contains an implicit “proximate cause” requirement that limits damages to the first purchaser in line.¹⁷⁹ That view harkens back to pre-marginalist nineteenth century tort law that rejected the conception of multiple causation in marginalist economics.¹⁸⁰

Speaking even on those terms, however, the dissenters seemed not to understand that the largest burden of the overcharge falls to the consumer, or the *last* purchaser in line. Only they are not in a good position to pass anything on.¹⁸¹ Indeed, many intermediaries suffer no overcharge injuries at all because they operate under markup procedures that pass all costs on. That is not to say that intermediaries are not injured; rather, their injury results from reduced transaction volume, not from the overcharge. A rule that might better compensate harmed parties is to give end users an overcharge cause of action for their damages, and intermediaries an action for lost profits resulting from reduced sales.¹⁸²

Neither *AmEx* nor the *Apple* dissent reflects sound economic analysis.¹⁸³ They do represent a tortured effort to limit liability even when sound and up-to-date economics points in the other direction. While the Chicago critique

¹⁷⁵ See, e.g., 2A AREEDA & HOVENKAMP, *supra* note 74, ¶ 346, 346(a) (“The Court was concerned . . . with the problems of computing passing on, and the resulting potential for duplicative recovery . . .”). On the rationale of the decision in the economics of passing on, see William M. Landes & Richard A. Posner, *Should Indirect Purchasers Have Standing to Sue Under the Antitrust Laws? An Economic Analysis of the Rule of Illinois Brick*, 46 U. CHI. L. REV. 602 (1979). On the complexities giving rise to the *Apple* litigation, see Herbert Hovenkamp, *Apple v. Pepper: Rationalizing Antitrust’s Indirect Purchaser Rule*, 120 COLUM. L. REV. F. 14 (2020).

¹⁷⁶ See 14 AREEDA & HOVENKAMP, *supra* note 74, ¶ 2412(d) (summarizing state laws on passed-on damages and Supreme Court treatment of those laws); see also *California v. ARC Am. Corp.*, 490 U.S. 93, 105-06 (1989) (upholding state statutes allowing indirect purchasers to obtain damages).

¹⁷⁷ *Apple*, 139 S. Ct. at 1521 (“The absence of an intermediary is dispositive.”).

¹⁷⁸ 15 U.S.C. § 15(a) (2018).

¹⁷⁹ *Apple*, 139 S. Ct. at 1526-30 (Gorsuch, J., dissenting).

¹⁸⁰ See HOVENKAMP, *supra* note 8, at 134-42 (discussing the evolving conception of proximate cause in American jurisprudence).

¹⁸¹ See 2A AREEDA & HOVENKAMP, *supra* note 74, ¶ 346 (noting that intermediaries may recover for their injury and the injury they pass on, whereas the consumer, frequently the “most injured party,” typically does not have standing to recover).

¹⁸² See Hovenkamp, *supra* note 175, at 22 (proposing such a rule).

¹⁸³ See Hovenkamp, *supra* note 37, at 2-3, 12 (arguing that *Apple* was “detached from the economic issue” and *AmEx* was “economically incoherent”).

properly ridiculed the inept economics of 1960s era antitrust decisions, the *AmEx* decision and *Apple* dissent are not one whit better.

Finally, one area where the Chicago School recognized a serious threat of competitive harm was in the use of government to create monopoly. Stigler's theory of regulation saw it principally as a form of private rent seeking rather than a reasonable response to market failure.¹⁸⁴ Bork's work echoed this same theme, speaking of predation through government process.¹⁸⁵ Chicago School antitrust writers, including both Bork and Posner, advocated aggressive use of the antitrust laws in cases where the source of the restraint was government action. When Bork was Solicitor General, he advocated a liability-expanding "compulsion" requirement for antitrust's "state action" doctrine.¹⁸⁶ Posner actually advocated that there be no state action antitrust immunity for actions brought under the FTC Act.¹⁸⁷

By contrast, the Harvard School position, as developed in the original edition of the *Antitrust Law* treatise in 1978, rested on principles of federalism. It sought to distinguish the actions of a legitimate government decisionmaker from those taken at the behest of private entities. The Harvard School position did not inquire into the merits of a regulation, but only into its pedigree. The "state itself" could authorize any regulation it wished, provided that the authorization was clear. Private anticompetitive conduct would be approved, however, only if it was "actively supervised" by a government official.¹⁸⁸ In *California Retail Liquor Dealers Ass'n v. Midcal Aluminum, Inc.*, the Supreme Court adopted this test virtually verbatim, and it has governed the state action doctrine ever since.¹⁸⁹

The Chicago School would clearly have embraced the majority opinion in *North Carolina Dental* as an effective use of antitrust law to combat state-approved collusion. The dissenters suggested, however, that the case was an

¹⁸⁴ See *supra* notes 52–53 and accompanying text.

¹⁸⁵ ROBERT H. BORK, *Predation Through Governmental Processes*, in THE ANTITRUST PARADOX, *supra* note 16, at 347, 347–64.

¹⁸⁶ See Hovenkamp, *supra* note 11, at 616 ("[Bork's] position was that an anticompetitive state rule was immune from federal antitrust scrutiny only if the state actually compelled the private party to act.").

¹⁸⁷ See Richard A. Posner, *The Federal Trade Commission: A Retrospective*, 72 ANTITRUST L.J. 761, 770 (2005) (applauding FTC's attempts to deny state action immunity to actions brought under FTC Act).

¹⁸⁸ See 1 PHILLIP E. AREEDA & DONALD F. TURNER, ANTITRUST LAW ¶¶ 213–214 (1978) (proposing the state authorization and active supervision rules).

¹⁸⁹ See *Cal. Retail Liquor Dealers Ass'n v. Midcal Aluminum, Inc.*, 445 U.S. 97, 105 (1980) ("These decisions establish two standards for antitrust immunity . . . First, the challenged restraint must be 'one clearly articulated and affirmatively expressed as state policy'; second, the policy must be 'actively supervised' by the State itself.") (citations omitted); see also Hovenkamp, *supra* note 11, at 616–17 (discussing the adoption of the Harvard School position in *Midcal*).

inappropriate attempt to interfere with a state scheme that was “not structured in a way that merits a good-government seal of approval.”¹⁹⁰

This switching of sides points to a motivation unrelated to the integrity of Chicago School or any other economic theory. Its principal effect is to deliver profits to those able to capture governmental processes. “Opportunistic Economics” has too often defined the approach of Chicago School antitrust scholars when confronted with cases involving regulation that limits competition.

C. *The Chicago and Harvard Schools and Antitrust Welfare Tests*

Neoclassical antitrust economics generally relied on a welfare “tradeoff” conception that evaluated practices by netting out gains and losses.¹⁹¹ The Williamson model of mergers, which traded off consumer losses against productive efficiency gains, is a prime example.¹⁹² This conception of economic welfare was historically controlling in both Harvard and Chicago School economics literature, without significant dissent, through most of the heyday of the Harvard-Chicago debate.¹⁹³ Bork adopted that model in the late 1970s, but renamed it “consumer welfare.”¹⁹⁴

One problem with implementing the welfare tradeoff model is that it requires cardinal (i.e., quantified) measurements of productive efficiency gains and allocative efficiency losses—something courts cannot perform in any but the clearest of circumstances.¹⁹⁵ Disagreeing with Williamson, Bork as well as Posner believed that efficiencies could not be measured in specific

¹⁹⁰ N.C. State Bd. of Dental Exam'rs v. Fed. Trade Comm'n, 574 U.S. 494, 516 (2015) (Alito, J., dissenting); see also Hovenkamp, *supra* note 11, at 615-16 (comparing Justice Alito's position, “that of a committed federalist,” to the position of the Chicago School).

¹⁹¹ See, e.g., J.R. Hicks, *The Foundations of Welfare Economics*, 49 ECON. J. 696, 699 (1939) (arguing that economic evaluation of gains and losses can guide policy choices to maximize social welfare); Nicholas Kaldor, *Welfare Propositions in Economics and Interpersonal Comparisons of Utility*, 49 ECON. J. 549, 550 (1939) (discussing costs and compensation in the policymaking setting).

¹⁹² Oliver E. Williamson, *Economies as an Antitrust Defense: The Welfare Tradeoffs*, 58 AM. ECON. REV. 18, 21-22 (1968) (examining the tradeoff between cost savings and consumer losses).

¹⁹³ See Alan J. Meese, *Debunking the Purchaser Welfare Account of Section 2 of the Sherman Act: How Harvard Brought Us a Total Welfare Standard and Why We Should Keep It*, 85 N.Y.U. L. REV. 659, 690 (2010) (describing how Chicago came to embrace the total welfare standard about a decade after Harvard).

¹⁹⁴ See BORK, *supra* note 16, at 105-08.

¹⁹⁵ Herbert Hovenkamp, *Implementing Antitrust's Welfare Goals*, 81 FORDHAM L. REV. 2471, 2473-74 (2013) (describing the difficulties with a general welfare test in most cases); see also Herbert Hovenkamp, *Appraising Merger Efficiencies*, 24 GEO. MASON L. REV. 703, 733 (2017) [hereinafter Hovenkamp, *Appraising Merger Efficiencies*] (“Literal ‘balancing’ of competitive harms against efficiency gains is virtually impossible.”).

antitrust cases but must be presumed.¹⁹⁶ The strength of that presumption has wreaked havoc with sensible antitrust analysis of conduct, for it typically entails that efficiencies will be presumed while harm, as outlined above, requires strong proof.¹⁹⁷

Another problem with the welfare tradeoff model is that it permits output reducing mergers if the gains to producers exceed the losses paid by consumers. By Williamson's own calculations, a relatively modest efficiency gain from a merger would suffice to offset a large price increase.¹⁹⁸ Williamson neglected to ask whether it is common that a merger both reduces output and produces sufficient offsetting efficiencies to make the merger welfare positive. The typical merger that produces merger-specific marginal cost efficiencies increases output as well.¹⁹⁹ Under the consumer welfare principle that we currently apply, merger efficiencies will only be accepted if they are sufficient to hold the price to pre-merger levels, meaning that there is no relevant welfare tradeoff.²⁰⁰

Because protection of labor markets is a part of antitrust policy, higher output is also beneficial because it leads to competitive labor outcomes. Mergers that increase buyer market power, including for labor, will suppress wages.²⁰¹ If those mergers create market power in the product market, they may also decrease product output which itself reduces the demand for labor.²⁰²

In the original edition of the *Antitrust Law* treatise, Areeda and Turner also adopted with no discussion a total welfare test for merger efficiencies.²⁰³ They also relied on Williamson and disagreed with Bork, arguing for strict proof requirements for efficiency claims.²⁰⁴ Under their approach not only must offsetting merger-specific efficiencies be proven, but the defendant had

¹⁹⁶ See BORK, *supra* note 16, at 107-10, 128-29; POSNER, *supra* note 109, at 112 (arguing that efficiencies are practically impossible to measure); POSNER, *ANTITRUST LAW* (2d ed. 2001), *supra* note 151, at 13 (adhering to this position in 2001).

¹⁹⁷ See *supra* note 160.

¹⁹⁸ Williamson, *supra* note 192, at 22-23 (“[A] relatively modest cost reduction is usually sufficient to offset relatively large price increases even if the elasticity of demand is as high as 2, which is probably a reasonable upper bound.”). Areeda and Turner note this with apparent approval. See 4 AREEDA & TURNER, *supra* note 188, ¶ 940, at 149 n.2 (1980).

¹⁹⁹ See Hovenkamp, *Appraising Merger Efficiencies*, *supra* note 195, at 709 (“Agencies . . . [agree] that most mergers are socially beneficial because they lead to cost reductions or improved output . . .”).

²⁰⁰ See *id.*

²⁰¹ See Ioana Marinescu & Herbert Hovenkamp, *Anticompetitive Mergers in Labor Markets*, 94 IND. L.J. 1031, 1035-36, 1038 (2019).

²⁰² See *id.* at 1035-36, 1038 (describing how increased concentration can lead to coordinated decreased output and wage suppression). Ordinarily such a merger will decrease the merging firms' output; whether it results in higher prices depends on whether the firms have power in the output market.

²⁰³ 4 AREEDA & TURNER, *supra* note 188, ¶ 940, at 149 & n.2 (1980).

²⁰⁴ *Id.*

the burden of proof,²⁰⁵ with proof requirements that became quite stringent as the merger's anticompetitive potential loomed larger.²⁰⁶ The result is that few defendants have succeeded in proving the requisite efficiencies. The courts have generally followed this approach. Provable efficiencies must produce lower marginal costs and therefore prices. Subsequent editions of *Antitrust Law* largely abandoned the welfare tradeoff statement of the efficiencies defense, substituting a requirement that efficiencies must be sufficient to preclude any price increase from occurring. This amounts to a modified consumer welfare test and is the one incorporated in the current (2010) Merger Guidelines.²⁰⁷

CONCLUSION

When economic policy takes the model of perfect competition as its starting point, it has nowhere to go but downhill. If we did have a perfectly competitive economy, then of course antitrust intervention would be unnecessary. Faced with the choice of moving to models that provided greater verisimilitude and predictability, but that required more intervention, or clinging to the past, the Chicago School chose the latter. In the face of contrary evidence, the Chicago School provided a set of tools that required stringent proof burdens if only to prove the obvious, while accepting efficiency claims without serious examination. Those who stood to gain from this were firms with market power, at the expense of consumers and labor. The result was one of the most complete cases of regulatory capture in economic history, certainly far greater than any of the excesses of the New Deal. Recent decisions such as *AmEx* and the *Apple* dissent suggest that at least some Supreme Court Justices, unable to find coherent economic rationales for their positions, have abandoned antitrust economics altogether.

²⁰⁵ *Id.* ¶ 941, at 154.

²⁰⁶ *Id.* ¶ 962, at 197.

²⁰⁷ See 2010 HMG, *supra* note 89, § 10 (requiring an enforcement agency to “consider whether cognizable efficiencies likely would be sufficient to reverse the merger’s potential to harm customers in the relevant market”); see also 4A AREEDA & HOVENKAMP, *supra* note 74, ¶¶ 971-973.