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Framing the Chicago School of Antitrust Analysis

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FRAMING THE CHICAGO SCHOOL OF ANTITRUST ANALYSIS

[PRELIMINARY DRAFT SUBJECT TO CHANGE; CONSULT AUTHORS BEFORE CITING]

Herbert Hovenkamp**

Fiona Scott Morton*

Contents

INTRODUCTION.....	1
MARKETS AND STRUCTURE.....	11
<i>Market Diversity and Regulation</i>	11
<i>Oligopoly, Monopolistic Competition, and Appropriate Antitrust Responses</i>	13
<i>Barriers to Entry</i>	19
<i>Market Structure and Mergers</i>	21
<i>Leverage, Foreclosure, and Exclusion</i>	23
<i>Error Cost Analysis</i>	29
INFLUENCE ON ANTITRUST JURISPRUDENCE	30
<i>The Chicago and Harvard Schools</i>	30
<i>Other Supreme Court Departures from Chicago Antitrust</i>	32
<i>The Chicago and Harvard Schools and Antitrust Welfare Tests</i> .	36
CONCLUSION	39

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 essay attempts to put

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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. 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.¹

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 legal doctrine. It was an unpromising comparison, as Kitch himself apparently realized. Alternative accounts have found more plausible origins in the thought of Friedrich Hayek or Frank Knight.² Kitch did properly fault the Legal Realists for compiling a great deal of observation with very little unifying theory or methodology.³ Kitch's account is also notable for what it omitted. There was no mention of Robert L. Hale, the Columbia law and economics scholar who wrote about the relationship between economics and the legal system.⁴ Nor did he mention Walton Hamilton's influential 1929 article in the *American Economic Review*, entitled "law and economics," which first gave that

¹ Edmund Kitch, ed., *The Fire of Truth: A Remembrance of Law and Economics at Chicago, 1932-1970*, 26 J.L. & ECON. 163, 163 (1983). Also commenting on the religious fervor is William E. Kovacic, *The Chicago Obsession in the Interpretation of U.S. Antitrust History*, ___ UNIV. CHI. L. REV. ___ (2020).

² See Rob Van Horn and Philip Mirowski, *The Rise of the Chicago School of Economics and the Birth of Neoliberalism, 139-181*, in *THE ROAD FROM MONT PELERIN* (Philip Mirowski & Deter Plehwe, eds. 2015).

³ Kitch, *Fire of Truth*, *supra* note ___ at 165.

⁴ E.g., Robert L. Hale, *Coercion and Distribution in a Supposedly Non-coercive State*, 38 POL. SCI. Q. 470 (1923).

discipline a name and attempted to set it on a more institutional path.⁵ He made a single but uninformative mention of Thurman Arnold, the Legal Realist who in 1938 became head of the Antitrust Division and became that Agency's most aggressive antitrust enforcer. 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: Do markets 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.⁶ Another was Chicago's narrow view of market failure and thus of the appropriate scope of public intervention, such as Pigouvian taxes⁷ or price regulation.⁸ Yet another was its continued efforts to de-emphasize the significance of market structure in both regulatory and antitrust decision making. Chicago economist George Stigler devoted considerable intellectual capital to both criticizing the theory of monopolistic competition⁹ and

⁵ Walton Hamilton, *Law and Economics*, 19 AM. ECON. REV. 56 (1929). See HERBERT HOVENKAMP, *THE OPENING OF AMERICAN LAW: NEOCLASSICAL LEGAL THOUGHT, 1860-1970*, ch. 6 (2015).

⁶“Monopolistic competition” is often used as a shorthand for all cases of imperfect competition that are not monopoly.

⁷ E.g., Ronald H. Coase, *The Problem of Social Cost*, J. L. & ECON. 1 (1960). On the Pigouvian taxes debate, see HOVENKAMP, *OPENING*, supra note __ at __.

⁸ E.g., George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3 (1971).

⁹George J. Stigler, *Monopolistic Competition in Retrospect*, from GEORGE J. STIGLER, *THE ORGANIZATION OF INDUSTRY* 309-321 (1968). See also Craig Freedman, *THE CHICAGO SCHOOL OF ANTI-MONOPOLISTIC COMPETITION: STIGLER'S SCORCHED EARTH*

weakening the theory of oligopoly so as to make it no more than a special case of collusion.¹⁰ This came through loudly in the popularizing scholarship of Robert Bork, who viewed oligopoly as something that existed only in economics textbooks¹¹ and who completely ignored the theory of monopolistic competition.¹²

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 *Economics of Imperfect Competition*.¹³ If her work were to be taken seriously, he wrote, it would completely undermine the strong presumption against intervention. 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."¹⁴ 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

CAMPAIGN AGAINST CHAMBERLIN 165-342, in *IN SEARCH OF THE TWO-HANDED ECONOMIST: IDEOLOGY, METHODOLOGY AND MARKETING IN ECONOMICS* (Craig Freedman, ed, 2016).

¹⁰George J. Stigler, *A Theory of Oligopoly*, 72 *J. POL. ECON.* 44 (1964).

¹¹ROBERT H. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* 221 (1978). See Herbert Hovenkamp, *Whatever Did Happen to the Antitrust Movement*, 94 *NOTRE DAME L. REV.* 583, 612 (2018).

¹²On this point, see Richard S. Markovits, *Monopolistic Competition, Second Best, and "The Antitrust Paradox": A Review Article*, 77 *MICH. L. REV.* 567 (1979).

¹³Joan Robinson, *The Economics of Imperfect Competition* (1933).

¹⁴Joseph A. Schumpeter & A.J. Nichol, *Robinson's Economics of Imperfect Competition*, 42 *J. POL. ECON.* 249, 250-51 (1934).

the State. The classical liberal Mont Pellerin 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, Gary Becker, and George Will.¹⁵ Many of them were also economists, however, and they liked competitive markets. Of course, an ideological commitment to non-enforcement and a desire for free markets and competition can come into tension whenever firms use the profits from market power to obtain and keep it.

A firm has a financial incentive to use the profit from market power in order to maintain it, so economic theory will predict that this occurs often. The Chicagoans thus needed an additional critical assumption: markets are inherently self-correcting. 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; 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.¹⁶

The law provided the key antitrust enforcement default that drove the Chicago School's attitude toward economics. When the conduct at issue admitted of any doubt, government should not intervene. By placing the burden of proof onto the government or

¹⁵ See <https://www.montpelerin.org/about-mps/>; and see ANGUS BURGIN, *THE GREAT PERSUASION: REINVENTING FREE MARKETS SINCE THE DEPRESSION* (2013); and Brian Doherty, *Book Review*, 29 *POLICY* 61 (2013). On the relation between the Mount Pelerin society and neoliberal thought, see R.M. HARTWELL, *A HISTORY OF THE MONT PELERIN SOCIETY* (1965); *THE ROAD FROM MONT PELERIN*, *supra* note __. On 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 UNIV. L. REV.* 1527 (2011).

¹⁶ E.g. Frank H. Easterbook, *The Limits of Antitrust*, 63 *TEX. L. REV.* 1 (1984).

plaintiff to show that a course of conduct was anticompetitive, any conduct that could not be analyzed or explained became effectively legal.

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. 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 mergers¹⁷ or competitively harmless vertical contracting.¹⁸ 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.¹⁹ 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 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, conduct that fell right on the

¹⁷ *Brown Shoe Co., Inc. v. United States*, 370 U.S. 294 (1962); *United States v. Von's Grocery Co.*, 384 U.S. 270 (1966).

¹⁸ *United States v. Arnold, Schwinn & Co.* 388 U.S. 365 (1967); *Albrecht v. Herald Co.*, 390 U.S. 145 (1968).

¹⁹ Indeed, one of the authors remembers graduate school in 1989 where she was taught that antitrust before the Chicago revolution used no economics and now courts were focused on consumer welfare.

line became more anticompetitive. Arguing that this more anticompetitive conduct was still benign was 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.²⁰ Making the problem worse, about this time (1980s) the economics profession developed applied game theory and there was a spate of sophisticated models of imperfect competition. Now many more patterns of anticompetitive conduct could be explained and understood, particularly those in oligopoly markets.

While Bork's influential book *The Antitrust Paradox* was based largely on work he published in the 1960s, it came out in 1978,²¹ well after the game theory revolution and advances in modeling monopolistic competition and imperfect information were underway. 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. 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.

Increasingly, a characteristic of the Chicago School became its inability to change the enforcement answer in response to changes in the economic environment. Recall the key Chicago default above: if the conduct cannot be proven anticompetitive, the government should

²⁰George L. Priest, *The Limits of Antitrust and the Chicago School Tradition*, 6 J. COMP. L. & ECON. 1 (2010) (recounting how Aaron Director and Ronald Coase did not like an article he wrote that found the Supreme Court should have been more interventionist).

²¹ ROBERT H. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* (1978).

not interfere. But new tools explain conduct; given a situation, they can demonstrate if conduct is anticompetitive or procompetitive. 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 not enforcing. For example, in *Brooke Group* the Supreme Court declared that recoupment is not possible in oligopoly markets.²² The game theory literature published in the fifteen years prior to the decision stands out for its contributions showing just the opposite. The *California Dental* decision seemed hopelessly naïve about the threat of collusion in markets with imperfect information.²³ Antitrust enforcement in the US today displays this history of a growing separation between court decisions and economic reasoning.²⁴

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 stood to profit from non-intervention. They organized education and influence programs targeting academics and the judiciary.²⁵ In addition, funding sources are often hidden and some

²² *Brooke Group Ltd. V. Brown & Williamson Tobacco corp.*, 509 U.S. 209 (1993). “In the Court of Appeals’ view, “to rely 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.”

²³ *California Dental Assn. v. FTC*, 526 U.S. 746 (1999).

²⁴ See discussion *infra*, text at notes ____.

²⁵ E.g., Jane Mayer, *How Right-Wing Billionaires Infiltrated Higher Education* 107, *THE CHRONICLE REVIEW* (Feb. 12, 2016) (“The Olin Foundation’s most significant beachheads ... were established in America’s law schools....”) See also JANE MAYER, “DARK MONEY: THE HIDDEN HISTORY OF THE BILLIONAIRES BEHIND THE RISE OF THE

influence cannot be seen, including authors who receive but do not disclose financing for their research. While the American Economic Association has had a central disclosure policy since 2009,²⁶ 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, 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 US well overshot the mark in reducing antitrust enforcement after the late 1970s.²⁷ Markups have risen steadily since the 1980s.²⁸ The profit share of the economy has

RADICAL RIGHT (2016). 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 also David Dayen, *Corporate-Funded Judicial Boot Camp Made Sitting Federal Judges More Conservative* (The Intercept, Oct. 23, 2018). Additional important conservative donors to academia across the decades include Scaife, Volker, Bradley, DeVos, and Mercer, among others.

²⁶See <https://www.aeaweb.org/journals/policies/disclosure-policy>.

²⁷ See Fiona Scott-Morton, *Modern U.S. Antitrust Theory and Evidence Amid rising Concerns of Market Power and its Effects* (Center for Equitable Growth, May 29, 2019), available at <https://equitablegrowth.org/research-paper/modern-u-s-antitrust-theory-and-evidence-amid-rising-concerns-of-market-power-and-its-effects/>

²⁸E.g., Jan De Loecker & Jan Eeckhout, *The Rise of Market Power and the Macroeconomic Implications* (Nat'l Bureau of Econ. Research, Working Paper No. 23687, 2017), <http://www.nber.org/papers/w23687>.

risen from 3% to 14% over the last 4 decades.²⁹ 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. The higher prices (or lower quality) caused by lack of enforcement are paid by all consumers, while the profits accrue to equity-holders, disproportionately in the top 1%.³⁰ Four decades of underenforcement that has contributed to rising inequality is manifesting itself in the current political debate as populism.

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 vs. legal theories of competitive harm, focusing on leverage and foreclosure;

²⁹Simcha Barkai & Seth G. Benzell, 70 Years of U.S. Corporate Profits (Booth, 2018), available at <https://research.chicagobooth.edu/stigler/research/-/media/8ee68ec563aa4c70aa94897ee04f68b6.ashx>

³⁰Joshua Gans, *Inequality and Markets Concentration, When Shareholding is More Skewed than Consumption* (CAMA Working Paper Dec. 2018), available at https://cama.crawford.anu.edu.au/sites/default/files/publication/cama_crawford_anu_edu_au/2018-12/62_2018_gans_leigh_schmalz_triggs.pdf.

(3) the Chicago and Harvard Schools, divergence, coalescence, and relative influence; and (4) the importance of antitrust welfare tests.

Markets and Structure

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. Important contributors to market diversity were the variable presence of fixed costs and economies of scale, more complex theories about how sellers in a market 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 through John Stuart Mill had allowed, and that the optimal amount and type of regulatory intervention varies from one market to another.³¹ 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.³² Justice Brandeis’ well known *Chicago Board of Trade* decision, 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, requiring a rule of reason analysis that looked at the “facts peculiar to the business... The history of the restraint the evil believed to exist, the reason for adopting the particular remedy....”³³

³¹*See* HOVENKAMP, OPENING, *supra* note __ at 279-281. For the effect on twentieth century regulatory policy, *see* Herbert Hovenkamp, *Regulation and the Marginalist Revolution*, 71 FLA. L. REV. 455 (2019).

³²On the “case study” tradition in the Harvard School, *see* Herbert Hovenkamp, *The Antitrust Movement and the Rise of Industrial Organization*, 68 Tex. L. Rev. 105 (1989).

³³*Board of Trade of City of Chicago Board*, 246 U.S. 231, 238 (1918).

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. 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" never spoke in the traditional 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 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."³⁴

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.³⁵ 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

³⁴ George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3, 3 (1971).

³⁵E.g., Ronald H. Coase, *The Problem of Social Cost*, 3 J. POL. ECON. 1 (1960).

norms. Today a standard lesson in an industry organization economics class is that almost every market is imperfectly competitive in some way, whether it be economies of scale, imperfect information, or differentiated products. When those imperfections are especially large, it can be better for society to regulate – also imperfectly – than allow unrestrained monopoly.

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 Donald Turner's breakup proposals, which were very likely the high point of oligopoly determinism in antitrust policy.³⁶ 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, a 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 to theories of harm that interact with market structure.

Cournot's oligopoly theory³⁷ 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. Edward Chamberlin's advance³⁸ was to allow for differentiated products and endogenous entry. The Chamberlain problem is very

³⁶See discussion *infra*, text at notes ___. On structuralism in antitrust policy, see HOVENKAMP, OPENING OF AMERICAN LAW, *supra* note ___, Ch. 11.

³⁷ From ANTOINE AUGUSTIN COURNOT, RESEARCH ON THE MATHEMATICAL PRINCIPLES OF THE THEORY OF WEALTH (1838).

³⁸EDWARD CHAMBERLIN, THE THEORY OF MONOPOLISTIC COMPETITION: A RE-ORIENTATION OF THE THEORY OF VALUE (1933).

complex compared to the simpler Cournot setting and could not be solved before the advances of the 1970s through 1990s. A second important advance in oligopoly theory was the game theory revolution of the 1970s and 1980s. This work demonstrated that more collusive equilibria were possible if the dynamic nature of the competitive interaction was taken into account.³⁹ 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. The literature shows that under particular conditions (in particular, 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 adhering. In some situations, depending on the size distribution of firms and the number of customers that would move, and the like, cheating could be profitable, although perhaps not others.⁴⁰ He also listed a variety of transaction costs faced by cartels attempting to agree on a collusive course of action.⁴¹ 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.

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

³⁹See the citations in note __, *supra*.

⁴⁰George J. Stigler, *A Theory of Oligopoly*, 72 J. POL. ECON. 44 (1964). For excellent commentary, see Dennis W. Carlton & Sam Peltzman, *Introduction to Stigler's Theory of Oligopoly*, 6 COMPETITION POLICY INT'L 237 (2010), available at <https://www.competitionpolicyinternational.com/assets/0d358061e11f2708ad9d62634c6c40ad/CarltonPeltzman.pdf>.

⁴¹*Id.* at 45-46.

fixing.⁴² 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." His foil was Donald F. Turner, at that time just leaving his position as head of the Antitrust Division and returning to Harvard.

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.⁴³ 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. 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.⁴⁴ As a result, antitrust policy could approach tacitly colluding oligopolists by looking at the structure and actions that promise to make price 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, availability and effects of price discrimination, the difficulty of discouraging new market entrants, and the like.⁴⁵

⁴²Richard A. Posner, *Oligopoly and the Antitrust Laws: A Suggested Approach*, 21 STAN. L. REV. 1562 (1969).

⁴³Donald F. Turner, *The Definition of Agreement Under the Sherman Act: Conscious Parallelism and Refusals to Deal*, 75 HARV. L. REV. 655 (1962). An important precursor was Carl Kaysen, *Collusion Under the Sherman Act*, 65 Q. J. Econ. 263 (1951).

⁴⁴Posner, *supra* note __ at 1564-1565.

⁴⁵For expansion of these proposals and application in the case law and literature, see 6 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶1428-1436 (4th ed. 2017).

Robert Bork's proposal was far more ham-handed. He simply denied the existence of oligopoly as a serious antitrust problem.⁴⁶ 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."⁴⁷ Today, Bork's bottom line conclusion was that there was nothing antitrust could do 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 higher prices. While subsequent revisions of the original 1968 merger guidelines de-emphasized purely structural evidence, 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 HMG revisions all the way through the current 2010 Guidelines. 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.⁴⁸

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, particularly when there is already evidence in the industry of some existing or attempted tacit collusion.⁴⁹

⁴⁶BORK, ANTITRUST PARADOX, *supra* note __ at 21.

⁴⁷*Id.* at 175.

⁴⁸Hovenkamp and Shapiro, *supra* note __.

⁴⁹See discussion *infra*, text at notes __.

Nevertheless, identifying tacit behaviors that can be condemned under the Sherman Act's "contract, combination, or conspiracy" language has proven difficult. Courts almost never find a violation in the absence of more explicit and conventional communications among the defendants.⁵⁰ Even the "unfair methods of competition" language in the FTC Act, which contains no agreement requirement, has largely proven unworkable.⁵¹ 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.⁵²

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.⁵³ Even a Chicago judge such as Posner recognized in *Hospital Corp.* 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..."⁵⁴ In sharp contrast, Bork argued that incipiency tests for mergers had "no value whatever."⁵⁵ In practice, enforcers do rely heavily on the likelihood of successful tacit collusion in assessing merger cases.⁵⁶ The important difference between collusion policy

⁵⁰See 6 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶¶1431-1435 (4th ed. 2016)

⁵¹*E.g., In re du Pont (Ethyl)*, 101 F.T.C. 425 (1983), *rev'd sub nom.*, *E.I. Du Pont De Nemours & Co. v. FTC*, 729 F.2d 128 (2d Cir.1984). See HERBERT HOVENKAMP, *FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE* §4.6d (6th ed. 2020).

⁵² Richard A. Posner, *Review of Kaplow, Competition Policy and Price Fixing*, 79 *ANTITRUST L.J.* 761 (2014).

⁵³See Herbert Hovenkamp, *Prophylactic Merger Policy*, 70 *HASTINGS L.J.* 45 (2018).

⁵⁴*Hosp. Corp. of Am.*, 807 F.2d 1381, 1387 (7th Cir. 1986).

⁵⁵BORK, *ANTITRUST PARADOX*, *supra* note __ at 131.

⁵⁶See 2010 Horizontal Merger Guidelines, *supra* note __, §7; for example, see Nathan H. Miller, et al., *Oligopolistic Price Leadership and Mergers: The United States Beer Industry* (SSRN Working Paper

under the Sherman Act and merger policy is that the “may ... substantially lessen competition” language of §7 of the Clayton Act encompasses any behavior that might lead to noncompetitive outcomes, 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,⁵⁷ a point developed a few years later by Milton Friedman.⁵⁸ 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.⁵⁹ Through the 1960s and 1970s the model became more mainstream and applied to a variety of market structures.⁶⁰ 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.⁶¹ This literature also included advances in empirical

2019), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3239248. [(ABI – grupo modelo, AA-USAirways).]

⁵⁷ George J. Stigler, *Monopolistic Competition in Retrospect*, 12-24, in GEORGE J. STIGLER, *FIVE LECTURES ON ECONOMIC PROBLEMS* (1949).

⁵⁸ Milton Friedman, *The Methodology of Positive Economics* 15, 38-39 in *ESSAYS IN POSITIVE ECONOMICS* (1953). Friedman believed that in its search for descriptive realism monopolistic competition had rendered itself untestable. *Id.* at 38-41.

⁵⁹ Paul A. Samuelson, *The Monopolistic Competition Revolution*, in *MONOPOLISTIC COMPETITION THEORY: STUDIES IN IMPACT* 105, 108 (Robert E. Kuenne ed., 1967).

⁶⁰ E.g., A. Dixit & J. E. Stiglitz, *Monopolistic Competition and Optimum Product Diversity*, 67 *AM. ECON. REV.* 297 (1977); Steven C. Salop, *Monopolistic Competition with Outside Goods*, 10 *BELL J. ECON.* 141 (1979).

⁶¹ E.g., Steven Berry, Martin Gaynor, and Fiona Scott Morton, *Do Increasing Markups Matter? Lessons from Empirical Industrial*

techniques to allow estimation and testing. 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.

Models of monopolistic competition are also now used to estimate the unilateral price effects likely to result from a merger. A classic setting of monopolistic competition 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 which relies on the theory of monopolistic competition but requires a knowledge only of margin and diversion or market shares.⁶²

Barriers to Entry

Harvard School economist Joe S. Bain had done pioneering work on entry barriers in the 1950s.⁶³ Bain defined entry barriers as any market factor that blocked entry while yet permitting the firms in the market to charge above cost prices. That definition was completely indifferent to whether the source of the entry barrier or the

Organization, 33 J. ECON. PERSP. 44 (2019); Aviv Nevo, *Mergers with Differentiated Products: the Case of the Ready-to-Eat Cereal Industry*, 31 RAND J. ECON. 395 (2000). On the empirical progress that had already occurred by the 1980s, see Timothy F. Bresnahan & Richard Schmalensee, *The Empirical Renaissance in Industrial Economics: An Overview*, 35 J. INDUS. ECON. 371 (1987).

⁶²Joseph Farrell & Carl Shapiro, *Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition*, 10 B.E. J. THEORETICAL ECON. 1 (2010).

⁶³JOE S. BAIN, *BARRIERS TO NEW COMPETITION* (1956). Bain was educated at Harvard but spent most of his career at UC Berkeley.

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.”⁶⁴ One difference between the Bain and Stigler approaches occurs in the presence of fixed costs plus economies of scale, 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.⁶⁵ Network effects can operate in the same way, giving early – and perhaps lucky – entrants a decisive advantage.⁶⁶

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. Importantly, however, antitrust law does not punish firms for taking advantage of high entry barriers and overcoming risk.

⁶⁴GEORGE J. STIGLER, *THE ORGANIZATION OF INDUSTRY* 67 (1968). *See also* *United States v. Microsoft corp.*, 253 F.3d 34 (D.C. Cir. 2001) (noting the difference between the two tests but finding it unnecessary to resolve the question).

⁶⁵*See* Harold Demsetz, *Barriers to Entry*, 72 *Am. Econ. Rev.* 47 (1982); Harold Demsetz, *Industry Structure, Market Rivalry, and Public Policy*, 16 *J.L. & ECON.* 1 (1973).

⁶⁶Gregory J. Werden, *Network Effects and the Conditions of Entry: Lessons from the Microsoft Case*, 69 *ANTITRUST L.J.* 87 (2001).

Rather, the impact of entry barriers is relevant to antitrust because they operate as part of the environment within which conduct must be evaluated.

In Stigler's defense, he was writing against a background of structuralism and very weak requirements for anticompetitive conduct by dominant firms. 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,⁶⁷ the question is whether the conduct realistically threatens to prolong or enlarge the defendant's market power while deterring entry. Simply saying that the conduct is beyond challenge because entry barriers cannot be high serves to protect harmful monopoly.

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.⁶⁸ 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 in markets where the four largest firms accounted for more than 60% of the market.⁶⁹

In the 1980s both the Supreme Court and government enforcement policy began to de-emphasize the role of pure structure and added other factors, including nonstructural features bearing on the risk of collusion, barriers to entry, and efficiencies.⁷⁰ Even so,

⁶⁷E.g., *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.* 382 U.S. 172 (1965). See PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶706 (4th ed. 2015).

⁶⁸See discussion *supra*, text at notes ____.

⁶⁹RICHARD A. POSNER, *ANTITRUST LAW: AN ECONOMIC PERSPECTIVE* 112 (1976).

⁷⁰See Demsetz, *Industry Structure*, *supra* note ____.

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.⁷¹

By contrast, the dramatic rise of “unilateral effects” merger analysis⁷² 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 to 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 very close in product space, leaving a lower cross-elasticity of demand between their new set of products and their closest remaining rivals. Unilateral effects theory additionally requires a barrier (in the Bainian sense) such that entrants cannot enter in a timely, likely, and sufficient manner and incumbents cannot quickly reposition to replace the lost competition.

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. In addition, regulatory barriers such as license requirements, intellectual property, property acquisition, 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.

⁷¹U.S. Dept. of Justice and Federal Trade Commission, Horizontal Merger Guidelines §7 (Aug. 19, 2010), available at <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>.

⁷² Id., §6.

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 is based on consumers’ willingness to pay for the package.⁷³ The idea that someone can earn additional monopoly profits by combining complementary goods is an economic fallacy. The critique was aimed at decisions such as Justice Brandeis’ opinion in *Carbice Corp. v. American Patents Dev. Corp.*, where the seller of a patented ice box required buyers to purchase its own dry ice, an essential refrigerant.⁷⁴ The box was worthless without access to dry ice. 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.” 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.”⁷⁵

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.”⁷⁶

⁷³Ward Bowman, *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19 (1957) (“the tying sale is only a means of utilizing effectively a power already possessed”). See also Richard A. Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925, 933-35 (1979).

⁷⁴283 U.S. 27 (1931).

⁷⁵*Id.* at 32.

⁷⁶*Bloomer v. Millinger*, 68 U.S. (1 Wall.) 340, 350 (1863).

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.⁷⁷

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 high intensity users of the combination. Such a tie would produce uncertain but very likely positive welfare effects, particularly since its effect would generally be to increase output.⁷⁸ This type of tie is extremely common.⁷⁹

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.⁸⁰ Already in the 1930s NYU 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. The result was that any advantage

⁷⁷See Herbert Hovenkamp, *United States Competition Policy in Crisis: 1890-1955*, 94 MINN. L. REV. 311, 364-365 (2009).

⁷⁸Erik N. Hovenkamp and Herbert Hovenkamp, *Tying Arrangements and Antitrust Harm*, 52 ARIZ.L.REV. 925 (2010).

⁷⁹Razors and razor blades, printers and ink cartridges, mainframes and punch cards, coffee machines and pods, etc

⁸⁰ Recounted in Herbert Hovenkamp, *Robert Bork and Vertical Integration: Leverage, Foreclosure, and Efficiency*, 79 ANTITRUST L.J. 983 (2014).

from a price change in one article would be offset by a “commensurate disadvantage in the other.”⁸¹

Under Chicago doctrine a patent is an investment which the inventor should be allowed to monetize without limit. 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 *Qualcomm* case is an example.⁸² 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. Despite having signed a contract promising to license those patents on fair and reasonable terms (FRAND), it refused to license them to rival chip makers. In addition, it employed loyalty

⁸¹MYRON WATKINS, PUBLIC REGULATION OF COMPETITIVE PRACTICES IN BUSINESS ENTERPRISE 220-21 (3d ed. 1940). John Maurice Clark had critiqued the theory even earlier, in his 1923 book on fixed costs. JOHN MAURICE CLARK, STUDIES IN THE ECONOMICS OF OVERHEAD COSTS 136-137 (1923), discussed in Hovenkamp, *Bork, supra* note ___ at 987-989. Other economists, such as MIT’s Morris Adelman, also rejected Justice Brandeis’ version of the leverage theory. Morris A. Adelman, *Integration and Antitrust Policy*, 63 HARV. L. REV. 27,45 (1949) (switching the concern to foreclosure); William B. Lockhard & Howard R. Sacks, *The Relevance of Economic Factors in Determining Whether Exclusive Arrangements Violate Section 2 of the Clayton Act*, 65 HARV. L. REV. 913, 944 (1952) (same). Writing in 1954, regulatory economist Alfred E. Kahn spoke in similar terms, describing tying arrangements as occurring on the “borderline between Competing and Foreclosing.” Alfred E. Kahn, *A Legal and Economic Appraisal of the “New Sherman and Clayton Acts*, 63 YALE L.J. 293, 328 (1954).

⁸²E.g., *FTC v. Qualcomm, Inc.*, ___ F.Supp.3d, ___, 2019 WL 2206013 (N.D. Cal. May 21, 2019). See Herbert Hovenkamp, *FRAND and Antitrust*, ___ CORNELL L. REV. ___ (2020) available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3420925.

rebates to prevent customers from sourcing chips for their new products from rival chip entrants, thus preserving a monopoly in chips. The whole strategy was monetized through supra-competitive 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 sophisticated 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.⁸³ The Harvard School was not responsible for these developments. Harvard School scholars either rejected the theory or refused to defend it.⁸⁴ For example, Carl Kaysen and Donald Turner did not defend it in their 1959 book on antitrust policy, roughly contemporaneous with Bowman’s article. Even before Bork published *The Antitrust Paradox*, Areeda spoke strongly against it.⁸⁵

The theory that more accurately distinguished 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

⁸³See 9 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶1721 (4th ed. 2018).

⁸⁴Herbert Hovenkamp, *United States Competition Policy in Crisis: 1890-1955*, 94 MINN. L. REV. 311 (2009).

⁸⁵Phillip E. Areeda, *Antitrust Violations Without Damage Recoveries*, 89 HARV. L. REV. 1127, 1138 (1976) (higher price in tied product must be accompanied by offsetting price reduction in tying product).

leverage by assuming that entry would occur any time a firm attempted to charge more than the competitive price for a tied good. When that assumption is relaxed foreclosure is possible, particularly when the practice itself makes the structure of the affected market less competitive.⁸⁶ 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.⁸⁷ Under their theory a tie raised entry barriers for the tied good “to the level of those in the market for the tying good.”⁸⁸ Their example was IBM Corp’s tie of computer punch cards. While entry into the punch card market was easy, entry into computer manufacturing was not.⁸⁹ They declined to extend this per se rule to exclusive dealing, because in their view exclusive dealing contract promised “substantial gains in certainty and ability to plan forward ... in a market in which supplies or demands fluctuate unpredictably and widely.”⁹⁰ 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.⁹¹

The Chicago position on foreclosure was, once again, insistence that markets will work themselves pure. A firm claiming

⁸⁶ See, e.g., Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 AM. ECON. REV. 837 (1990); Louis Kaplow, *Extension of Monopoly Power Through Leverage*, 85 COL. L. REV. 515 (1985).

⁸⁷ KAYSEN & TURNER, ANTITRUST POLICY, *supra* note __ at 157-158.

⁸⁸ *Id.* at 157.

⁸⁹ *Id.*, 157-158.

⁹⁰ *Id.* at 159.

⁹¹ *E.g.*, *Jefferson Parish Hosp. Dist. V. Hyde*, 466 U.S. 2 (1984) (disputing whether exclusive anesthesiology contract was exclusive dealing or tying). In the franchise context, see *Krehl v. Baskin-Robbins Ice Cream Co.*, 664 F.2d 1348 (9th Cir. 1982), in which what was essentially exclusive dealing was characterized by the plaintiffs as tying, in which the Baskin-Robbins trademark was the tying product, and the ice cream was the tied product.

foreclosure was simply a whining loser who was unable to compete in the marketplace.⁹² This assumption and attitude have been undermined by an enormous economics literature demonstrating the existence of profitable foreclosure strategies, both in theory and in the marketplace.⁹³

The law of predatory 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 "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*.⁹⁴ 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's 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 it in much detail, except for an insistence that the defendant be a "monopolist."⁹⁵ They also proposed the average variable cost test for predatory pricing which

⁹² Easterbrook, *Limits of Antitrust*, *supra* note __.

⁹³ Nicely summarized during the heyday of this debate in Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price*, 96 YALE L.J. 209 (1986).

⁹⁴ BORK, PARADOX, *supra* note __ at 144-159.

⁹⁵ Phillip Areeda & Donald Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 HARV. L. REV. 697 (1975). *See id.* at 698 ("the 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 passim*, limiting discussion to "monopolists." Cf. PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶¶725-726 (4th ed. 2016) (arguing for structural query similar to that in monopolization cases generally, but against a specific recoupment requirement).

made it extremely difficult to prove. Indeed, even Judge Posner, whose views diverged from Bork's, described the Areeda-Turner test as "toothless."⁹⁶ The Supreme Court has adopted both prongs of the Areeda-Turner test, 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 contravention of economic theory. Average variable cost tests eliminate liability for all products with low or zero marginal costs like airline seats or digital goods.

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.⁹⁷ 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 will promptly fix the situation. By contrast, false identification of harmful monopoly tends not to be self-correcting because a court blocks the efficient conduct for a long time.

⁹⁶See RICHARD A. POSNER, ANTITRUST LAW 219 (2d ed. 1981). On Posner's own theory of predatory pricing, *see id.* at 188-189 (predatory pricing requires either a price below short-run marginal cost; or a price below long-run marginal cost with intent to exclude).

⁹⁷Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1 (1984); Jonathan B. Baker, *Taking the Error out of "Error Cost" Analysis: What's Wrong with Antitrust's Right*, 80 ANTITRUST L. J. 1 (2015). See also Kevin Bryan and Erik Hovenkamp, *Startup Acquisitions, Error Costs, and Antitrust Policy*, ___ UNIV. CHI. L. REV. ___ (2020) (forthcoming), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3376966 (showing how false negatives in the analysis of platform acquisitions of startups leads to monopoly).

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 supports the reversed premise. Firms have financial incentives to achieve monopoly profit since competition typically features very little profit, and both managers and shareholders prefer profit. 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 the absence of antitrust laws, it is economically naïve to assume that markets will naturally tend toward competition.

Influence on Antitrust Jurisprudence

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 might be economically efficient by reducing the opportunities for harmful free riding was brilliant, but it described only a subset of RPM

practices.⁹⁸ 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 its own benefit.⁹⁹

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.¹⁰⁰ While the Supreme Court wisely overruled the *per se* rules against nonprice restraints and resale price maintenance, it adopted the rule of reason advocated by the Harvard School, rather than the Chicago preference for rules of *per se* legality.¹⁰¹

Overall, the Chicago School attitude toward exclusionary practices was very benign, approaching *per se* legality for most of them. The Supreme Court has nearly always tended to follow the Harvard approach of applying a rule of reason but makes up that ground by being rather strict about standards of proof.¹⁰² The net

⁹⁸Lester Telser, *Why Should Manufacturers Want Fair Trade*, 3 J.L. & ECON. 86 (1960).

⁹⁹ This was almost certainly true of the original *Dr. Miles* case, in which RPM was facilitated by a retail druggists' cartel. See HOVENKAMP, ENTERPRISE *supra*, note __, 340-347.

¹⁰⁰ Stating the Chicago position is the late Wesley J. Liebeler, *Intra-brand "Cartels" Under GTE Sylvania*, 30 UCLA L. REV. 1 (1982).

¹⁰¹ *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007); see 8 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶1620 (4th ed. 2017).

¹⁰² For a fuller summary of these areas, see Hovenkamp, *Whatever Did Happen*, *supra* note __ at __; Hillary Greene & D. Daniel Sokol,

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.

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 include¹⁰³ the majority opinion in *Ohio v. American Express*;¹⁰⁴ both opinions in *Apple, Inc. v. Pepper*,¹⁰⁵ and the three-Justice dissent in the *North Carolina Dental* case.¹⁰⁶

The *American Express* 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.¹⁰⁷ The free rider problem has a distinctly Chicago School origin, 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

Judicial Treatment of the Antitrust Treatise, 100 IOWA L. REV. 2019 (2015); William Kovacic, *The Chicago Obsession in the Interpretation of U.S. Antitrust History*, __ UNIV. CHI. L. REV. __ (2019) (forthcoming).

¹⁰³Another one is *California Dental Ass'n. v. FTC*, 526 U.S. 756 (1999). See RICHARD A. POSNER, *ANTITRUST LAW* 30 (2d ed. 2001) (*California Dental* too naïve about collusion).

¹⁰⁴*Ohio v. American Express Co.*, 138 S.Ct. 2274 (2018).

¹⁰⁵*Apple, Inc. v. Pepper*, 139 S.Ct. 1514 (2019).

¹⁰⁶*North Carolina State Bd. Of Dental Examiners v. FTC*, 574 U.S. 494 (2015).

¹⁰⁷*AmEx*, 138 S.Ct. at 2289-2290.

Express card.¹⁰⁸ As a result, free riding was not possible: AmEx was able to capture all of the returns for its card user perks.¹⁰⁹

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. The fact that all credit card transactions are digitized and recorded indicates that direct proof from observations of demand responses to price changes could well 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.¹¹⁰

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.¹¹¹ 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.¹¹² This was not Chicago School economics. It was economic nonsense.

Apple v. Pepper reflects similar problems. In *Illinois Brick v. Illinois*, the Supreme Court held that only customers who purchase directly from a defendant can maintain a damages action under §4 of the Clayton Act.¹¹³ The jurisprudence of *Illinois Brick* has focused

¹⁰⁸See *id.* at 2304 (Breyer, j., dissenting).

¹⁰⁹See Herbert Hovenkamp, *Platforms and the Rule of Reason: the American Express Case*, 2019 COL. BUS. L. REV. 35 (2019).

¹¹⁰*Amex*, 138 S.Ct. at 2285 n. 7; Hovenkamp, *Platforms*, *supra* note ___ at 50.

¹¹¹*Amex*, 138 S.Ct. at 2288.

¹¹²See Erik Hovenkamp, *Platform Antitrust*, ___ J. Corp. L. ___ (2020), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3219396.

¹¹³*Illinois Brick Co. v. Illinois*, 431 U.S. 720 (1977).

heavily on the difficulties of computing passed-on damages.¹¹⁴ Several states have amended their antitrust laws so as to permit passed-on damages, and the Supreme Court has permitted such statutes.¹¹⁵ The *Apple* majority ignored the passing on issue and looked only at the fact that the plaintiffs paid money directly to the defendant. The dissenters also ignored the economic issue. They concluded that §4 of the Clayton Act, which gives a damages action to “any person who shall be injured in his business or property,”¹¹⁶ contains an implicit “proximate cause” requirement that limits damages to the first purchaser in line. That view harkens back to nineteenth century tort law that rejected the conception of multiple causation in marginalist economics.¹¹⁷

Speaking even on those terms, however, the dissenters seemed not to understand that the largest burden of the overcharge falls to the consumer, or *last* purchaser in line. Only they are not in a good position to pass anything on.¹¹⁸ 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

¹¹⁴See 2A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶346 (4th ed. 2014); 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 given rise to the *Apple* litigation see Herbert Hovenkamp, *Apple v. Pepper: Rationalizing Antitrust’s Indirect Purchaser Rule*, COL. L. REV. FORUM (forthcoming, 2020), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3394939.

¹¹⁵California v. ARC Amer. Corp, 490 U.S. 93 (1989); and see 14 HERBERT HOVENKAMP, ANTITRUST LAW ¶2412d (4th ed. 2019)

¹¹⁶15 U.S.C. §15.

¹¹⁷See HOVENKAMP, OPENING, *supra* note ___ at 134-142.

¹¹⁸See 2A AREEDA & HOVENKAMP, *supra* note ___, ¶346.

their damages, and intermediaries an action for lost profits resulting from reduced sales.¹¹⁹

Neither *AmEx* nor the *Apple v. Pepper* dissent reflects sound economic analysis. 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 properly ridiculed the inept economics of 1960s era antitrust decisions, the *AmEx* decision and *Apple* dissent are not one whit better.

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.¹²⁰ Bork's work echoed this same theme, speaking of predation through government process.¹²¹ 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.¹²² Posner actually advocated that there be no state action antitrust immunity for actions brought under the FTC Act.¹²³

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 decision maker from those taken at the behest of private entities. The Harvard School position did not inquire into

¹¹⁹See Hovenkamp, *Apple vs. Pepper*, *supra* note ____

¹²⁰See discussion *supra*, text at notes ____.

¹²¹BORK, PARADOX, *supra* note __ at 347-364.

¹²²See Hovenkamp, *Whatever Did Happen*, *supra* note __ at 616 (summarizing Bork's position).

¹²³See 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).

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.¹²⁴ In its *Midcal* decision the Supreme Court adopted this test virtually verbatim, and it has governed the state action doctrine ever since.¹²⁵

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 inappropriate attempt to interfere with a state scheme that was “not structured in a way that merits a good-government seal of approval....”¹²⁶ This points to a motivation unrelated to the integrity of Chicago School or any other economic principle, but only to deliver profits to those able to capture governmental processes. “Opportunistic Economics” well defines the approach of Chicago School antitrust scholars when confronted with cases involving regulation.

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.¹²⁷ A prime example is the Williamson model of mergers, which traded off consumer losses against productive efficiency

¹²⁴See 1 PHILLIP E. AREEDA & DONALD TURNER, ANTITRUST LAW ¶¶213 (state authorization), 214 (active supervision) (1978).

¹²⁵See *Cal. Retail Liquor Dealers Ass’n. v. Midcal Aluminum, Inc.*, 445 U.S. 97, 105 (1980); see also Hovenkamp, *Whatever Did Happen*, *supra* note __ at 616-617.

¹²⁶*North Carolina State Board of Dental Examiners v. FTC*, 574 U.S. 494, __ (2015) (Alito, j., dissenting). See Hovenkamp, *Whatever Did Happen*, *supra* note __ at 615-616.

¹²⁷See John Hicks, *The Foundations of Welfare Economics*, 49 ECON. J. 696 (1939); Nicholas Kaldor, *Welfare Propositions in Economics and Interpersonal Comparisons of Utility*, 49 ECON. J. 549 (1939).

gains.¹²⁸ 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.¹²⁹ Bork adopted that model in the late 1970s, but renamed it “consumer welfare.”¹³⁰

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 no court enjoys doing in any but the clearest of circumstances.¹³¹ Disagreeing with Williamson, Bork as well as Posner believed that efficiencies could not be measured in specific antitrust cases but must be presumed.¹³² 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.¹³³

Another problem with the welfare tradeoff model is that it permits lower output solutions where the gains to producers exceed the losses paid by consumers. By Williamson’s own calculations a relatively modest efficiency gain from a merger would be sufficient to

¹²⁸Oliver E. Williamson, *Economics as an Antitrust Defense: the Welfare Tradeoffs*, 58 AM. ECON. REV. 18, 21 (1968).

¹²⁹See 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 NYU L. REV. 659 (2010).

¹³⁰BORK, PARADOX, *supra* note __ at 105-108.

¹³¹Herbert Hovenkamp, *Implementing Antitrust’s Welfare Goals*, 81 FORDHAM L. REV. 2471 (2013); Herbert Hovenkamp, *Appraising Merger Efficiencies*, 24 GEO. MASON L. REV. 703 (2017).

¹³²BORK, PARADOX, *supra* note __ at 107-110, 128-129; RICHARD A. POSNER, *ANTITRUST LAW: AN ECONOMIC PERSPECTIVE* 112 (1976) (efficiencies practically impossible to measure); RICHARD A. POSNER, *ANTITRUST LAW* 13 (2d ed. 2001) (adhering to this position)

¹³³See discussion *supra*, text at notes __.

offset a large price increase.¹³⁴ But if those efficiencies occurred in fixed costs, such a merger would reduce output below pre-merger levels and thus result in higher prices, harming consumers. While mergers that both reduce output and increase efficiency are possible, the typical merger that produces merger-specific marginal cost efficiencies increase output as well.¹³⁵ Under the consumer welfare principle that we currently apply, merger efficiencies will be accepted only if they are sufficient to hold the price to pre-merger levels, meaning that there is no relevant welfare tradeoff.¹³⁶ 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. If those mergers create market power in the product market, they may also decrease product output which itself reduces the demand for labor.¹³⁷

In the original edition of the *Antitrust Law* treatise Areeda and Turner also adopted with no discussion a total welfare test for merger efficiencies.¹³⁸ They also relied on Williamson and disagreed with Bork, arguing for strict proof requirements for efficiency claims. Under their approach not only must offsetting merger specific efficiencies be proven, but the defendant had the burden of proof,¹³⁹ with proof requirements that became quite stringent as the merger's

¹³⁴Williamson, *Economies*, *supra* note __ at 22-23. Areeda and Turner note this with apparent approval. See 4 AREEDA & TURNER, ANTITRUST LAW (1980), *supra* note __, ¶940 at 49 [149??] n. 2.

¹³⁵See Herbert Hovenkamp, *Appraising Merger Efficiencies*, 24 GMU L. REV. 703 (2017)

¹³⁶*Ibid.*

¹³⁷ See Ioana Marinescu and Herbert Hovenkamp, *Anticompetitive Mergers in Labor Markets*, 94 IND. L.J. 1031 (2019). 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.

¹³⁸4 PHILLIP AREEDA & DONALD TURNER, ANTITRUST LAW ¶940 at 149 & n. 2 (1980).

¹³⁹*Id.*, ¶941.

anticompetitive potential loomed larger.¹⁴⁰ The result is that few defendants have succeeded in proving the requisite efficiencies. The courts have 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.¹⁴¹ To date, no United States court has permitted a presumptively anticompetitive merger because it found offsetting efficiencies.

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 proof. 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 v. Pepper* dissent suggest that at least some Supreme Court Justices, unable to find coherent economic rationales for their positions, have abandoned antitrust economics altogether.

¹⁴⁰Id., ¶962.

¹⁴¹See 4A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶971-973 (4th ed. 2015).