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How economists influence antitrust: the contributions of Tim Bresnahan, Janusz Ordover, Steve Salop, and Bobby Willig

Jonathan B. Baker[1,2,*]

[1]Washington College of Law, American University, Washington, D.C., USA
[2]Thurman Arnold Project, Yale University, New Haven, CT, USA

*Corresponding author. Washington College of Law, American University, Washington, D.C., USA.
E-mail: jbaker@wcl.american.edu

ABSTRACT

Economists influence antitrust policy through theoretical and empirical economic research, translation and synthesis of that research, direct participation in policy development, and participation in the adversarial process. To illustrate these channels, this article profiles the antitrust-related work of four industrial organization economists who have played important roles in the development of antitrust economics and policy: Tim Bresnahan, Janusz Ordover, Steve Salop, and Bobby Willig. The article also evaluates three overarching theories about the role of economics in antitrust: a public interest theory, capture by big business, and influence tied to the ascendancy of neoliberalism.

KEYWORDS: economics, antitrust, Bresnahan, Ordover, Salop, Willig
JEL CLASSIFICATIONS: K21, L4

1. INTRODUCTION

Economists influence antitrust policy through theoretical and empirical economic research, translation and synthesis of that research, direct participation in policy development, and participation in the adversarial process. To illustrate these channels, this article profiles four industrial organization economists who have played important roles in the development of antitrust economics and policy. It documents their contributions and examines the sources of their influence. The article also draws lessons for understanding the role of economics in antitrust.

Section 2 describes the channels through which individual economists influence antitrust policy. Section 3 evaluates three overarching theories about the role of economic analysis in antitrust: a public interest theory by which the best ideas rise to the top, a capture theory that views economic analysis as produced and deployed in the interests of big business, and

a theory that relates the influence of economics to the ideological ascendancy of neoliberalism during the era in which the four profiled economists worked.

These initial sections draw on the three festschrift-like essays in the subsequent sections.[1] Those essays, which were written at different times during the past 15 years, profile the antitrust-related work of four economists with whom I worked: Tim Bresnahan, Janusz Ordover, Steve Salop, and Bobby Willig. A brief final section concludes.

2. CHANNELS BY WHICH ECONOMISTS INFLUENCE ANTITRUST

Economists influence antitrust policy through multiple channels. These include economic research, the translation and synthesis of economic concepts, and direct participation in policy development or the adversarial process. These categories are not mutually exclusive, and some of the examples could reasonably be classified as also illustrating a different channel.

The work of the four profiled antitrust economists provides examples of each channel. As a group, these economists bridge theory and empirics in their research, more interventionist and less interventionist orientations in their policy views, and Republican and Democratic administrations in their government service.[2]

Economic research

Empirical and theoretical economic research that influences policy may be situated in an academic conversation, a policy conversation, or both.[3] Two types of research with substantial policy influence fall on the academic end of the continuum.

First, some economic research influencing policy is motivated primarily by the intellectual concerns of an academic community and the state of the then-current economic literature. Any influence on antitrust policy is a follow-on consequence, not the direct aim of the research.

The work of the four profiled economists provides examples.[4] These include Bresnahan's research on estimating firm conduct in the US automobile industry,[5] which was among the formative studies of the 'New Empirical Industrial Organization (NEIO)'[6]; Salop's 'circle model' of product differentiation,[7] which is routinely used today for understanding many

[1] They also draw on my own experience as an economist (and lawyer) working on antitrust issues and matters as a government official, as an academic in both economics and law, and as an economic consultant. I mention some of my work in antitrust-related research streams that industrial organization economists pursue, but largely avoid referencing my work in antitrust-related research streams more characteristic of what law professors pursue.

[2] At least half a dozen other industrial organization economists, and perhaps a dozen or more, had roughly comparable influence on antitrust policy during the period where the four profiled economists were active.

[3] Lopatka and Page emphasize the significance of economic scholarship for antitrust law without distinguishing these conversations. In its antitrust decisions, they explain, the Supreme Court 'recognizes economic authority by accepting theoretical and generalized empirical propositions as its basis for formulating or applying rules of law' and identifies those propositions 'by pragmatically examining the scholarly literature in the context of existing case law and adopting the most persuasive and plausible accounts'. John E Lopatka and William H Page, 'Economic Authority and the Limits of Expertise in Antitrust Cases' (2005) 90 Cornell L Rev 617, 632. "The lower federal courts engage in the same sort of inquiry, constrained to varying degrees by the decisions of the Supreme Court." ibid.

[4] Willig's research on measuring the consequences of changes in market structure and regulatory policy for economic welfare (eg Robert E Dansby and Robert D Willig, 'Industry Performance Gradient Indexes' (1979) 69 Am Econ Rev 249; Robert D Willig, 'Incremental Consumer's Surplus and Hedonic Price Adjustment' (1978) 17 J Econ Theory 227; Robert D Willig, 'Consumer's Surplus Without Apology' (1976) 66 Am Econ Rev 589), and his work on with John Panzar on scope economies, eg John C Panzar and Robert D Willig, 'Economies of Scope' (1981) 71 (Papers & Proceedings) Am Econ Rev 268, also fall at the academic end of the continuum, but their most important policy influence has been outside antitrust.

[5] Timothy F Bresnahan, 'Competition and Collusion in the American Automobile Industry: The 1955 Price War' (1987) 35 J Indus Econ 457; Timothy F Bresnahan, 'Departures from Marginal-Cost Pricing in the American Automobile Industry: Estimates for 1977-1978' (1981) 11 J Econometrics 201.

[6] See generally, Timothy F Bresnahan, 'Empirical Studies of Industries with Market Power' in Richard Schmalensee and Robert D Willig (eds), *Handbook of Industrial Organization*, vol 2 (North-Holland 1989) 1011–57.

[7] Steven C Salop, 'Monopolistic Competition with Outside Goods' (1989) 10 Bell J Econ 141.

competitive issues[8]; and an article co-authored by Ordover and Salop (and Garth Saloner) showing how vertical foreclosure could emerge in equilibrium.[9]

Another type of policy-influential research on the academic end of the continuum involves articles that open a new academic conversation, facilitating modelling and empirical research. Many of the most heralded contributions to academic economic research have fallen into this category.[10] Bresnahan's work on general-purpose technologies (co-authored with Manuel Trajtenberg) provides an example.[11] It explained what is special about the kinds of technologies that serve as the backbone of economic growth in an era, such as steam engines, electric motors, semiconductors, or the Internet.[12] The previously mentioned development of the NEIO, including Bresnahan's automobile studies, could also be classified here.[13]

Other academic economic research is motivated by the concerns of policymakers. Two types of research fall at the policy end of the continuum. One type is academic work that shapes research streams, but where antitrust applications are close to the surface. For example, Willig's work on contestable markets (co-authored with William Baumol and John Panzar)[14] deepened economists' understanding of the significance of concentration and firm scale for competitive outcomes (an academic concern) and highlighted the competitive significance of entry conditions for market structure and performance (an antitrust issue).[15]

[8] Salop's model addressed a technical difficulty with the well-known Hotelling model of product differentiation. In Hotelling's model, sellers are arrayed on a line, buyers are also located along the line, and it is costly to ship products from seller's location to a buyer's location. The Hotelling model explains where firms chose to place themselves relative to their rivals, given how evenly their customers are distributed. The technical problem is that firms at the ends of the line face different competitive conditions than firms located in the middle, adding complexity to the mathematical representations of the model's solutions and potentially muddling the intuitions they suggest. Salop solved the problem by placing the sellers and buyers on a circle, so all firms face the same competitive conditions. His solution became a workhorse model of product differentiation.

[9] Jansuz A Ordover and others, 'Equilibrium Vertical Foreclosure' (1990) 80 Am Econ Rev 127. Their model helped convince the economic profession that vertical agreements could have anticompetitive horizontal effects, using game-theoretic arguments to overcome the price theory presumption otherwise.

[10] A recent example not from one of the profiled economists involves the work on two-sided platforms by Rochet and Tirole. Jean-Charles Rochet and Jean Tirole, 'Platform Competition in Two-Sided Markets' (2003) 1 J Eur Econ Ass'n 990.

[11] Timothy F Bresnahan and M Trajtenberg, 'General Purpose Technologies 'Engines of Growth'?' (1995) 65 J Econometrics 83. See also Timothy Bresnahan, 'General Purpose Technologies' in Bronwyn H Hall and Nathan Rosenberg (eds), *Handbook of the Economics of Innovation*, vol 2 (Elsevier 2010) 761–91.

[12] These technologies are sources of increasing returns to scale, a key basis for economic growth. Many aspects of antitrust thinking about information technology, including remedies and enforcement, have been influenced by recognition of the significance of general-purpose technologies.

[13] Bresnahan and his academic contemporaries, particularly Robert Porter, recognized that then-recent developments in game theory made it possible to determine whether changes in industry output resulted from shifts in supply, and if so, whether the supply shift arose from changes in input prices or production technology or from a change in how aggressively firms were competing. They formulated formally (mathematically) the theoretical issue and the associated econometric identification problem and brought to bear the relevant econometric tools to estimate the role of market power and changes in market power in determining prices and output in various industry settings. See Bresnahan (n 6). The academic literature they launched is the backbone of empirical industrial organization economics today, and the basis for modern studies investigating the determinants of changes in prices and output in various industries. More broadly, it has helped shape how the industrial organization economics field approaches questions of identifying market power.

[14] William J Baumol and others, *Contestable Markets and the Theory of Industry Structure* (Harcourt Brace Jovanovich 1982).

[15] Willig's work on the efficient component-pricing rule (Robert D Willig, 'The Theory of Network Access Pricing' in HM Trebing (ed), *Issues in Public Utility Regulation* (Proceedings of the Inst. of Public Utilities 10th annual conference, 1979) 109 (originating the efficient component-pricing rule)) also falls near the policy end of the continuum but its most important policy influence has been outside antitrust. Another contemporary example not from one of the profiled economists is the initial article by Azar, Schmalz, and Tecu on common ownership, which was motivated by an academic question about the product market consequences of a major change in the structure of financial markets, raised an obvious and prominent issue for antitrust policy, and spawned a great deal of academic research. José Azar, Martin C Schmalz and Isabel Tecu, 'Anticompetitive Effects of Common Ownership' (2018) 73 J Finance 1513. For more recent surveys of the economic literature on common ownership see Martin C Schmalz, 'Recent Studies on Common Ownership, Firm Behaviour, and Market Outcomes' (2021) 66 Antitrust Bull 12; Martin C Schmalz, 'Common-Ownership Concentration and Corporate Conduct' (2018) 10 Ann R Fin Econ 413. See also Miguel Antón, Florian Ederer & Mireia Giné, 'Common Ownership, Competition, and Top Management Incentives' (2022) 5 J Pol Econ 1294.

Economic research closer to the policy end of the continuum also includes the development of tools or concepts used in the analysis of antitrust cases, possibly developed with a specific case in mind but also with broader applications. Salop's initial writing on raising rivals' costs (co-authored with David Scheffman),[16] which shaped the way exclusionary conduct is understood throughout antitrust today, was developed at a time when the FTC, where Salop worked in the Bureau of Economics, was challenging conduct that seemed to harm competition by excluding rivals[17] yet could not reasonably be characterized as predatory pricing.[18] The article was also developed as a response to Robert Bork's scepticism about predatory conduct cases[19] and influenced by an older article by Oliver Williamson on the *Pennington* decision.[20]

Bresnahan's co-authored work (with me) on estimating the gains from mergers in product-differentiated industries showed the economics profession how to think about the unilateral effects of mergers, helped lead to the incorporation of that theory in the 1992 Horizontal Merger Guidelines, and spurred the development of other empirical tools and theoretical analyses for estimating the magnitude of the loss of localized competition from mergers commonly relied on today.[21] Those later tools included the gross upward pricing pressure index (GUPPI), which was importantly based on research by Salop (with Daniel O'Brien) and has become a standard approach for quantifying unilateral effects incentives.[22] Bresnahan and Salop's co-authored work on quantifying the competitive effects of production joint ventures, which was developed when the two worked as consultants for a rival with an interest in the General Motors-Toyota joint venture evaluated by the FTC,[23]

[16] Steven C Salop and David T Scheffman, 'Raising Rivals' Costs' (1983) 73 (Papers & Proceedings) Am Econ Rev 267.

[17] These included an unsuccessful complaint challenging Maxwell House's alleged disruption of a Folger test market by selling a fighting brand at a low price, *General Foods Corp*, 103 FTC 204 (1984) (dismissing complaint brought in 1976); an unsuccessful complaint challenging alleged entry-deterring conduct by leading breakfast cereal manufacturers, including excessive product variety and shelf space plans that deterred entrants, *Kellogg Co*, 99 FTC 8 (1982) (dismissing complaint brought in 1972); and an unsuccessful complaint challenging du Pont's alleged an attempt to monopolize the titanium dioxide market by deterring entry through the creation of excess manufacturing capacity. *E.I. du Pont de Nemours & Co*, 96 FTC 653, 655 (1980) (dismissing complaint brought in 1972).

[18] The antitrust policy literature of the time was highly critical of predatory pricing cases. In 1987, two FTC Commissioners debated whether predatory pricing was better considered a 'white tiger' or a 'unicorn'. Jonathan B Baker, 'Predatory Pricing after *Brooke Group*: An Economic Perspective' (1994) 62 Antitrust LJ 585, 586.

[19] See Robert H Bork, *The Antitrust Paradox* (Basic Books 1978) 156, 346 (contending that courts should almost never credit the possibility that a firm could exclude rivals by refusing to deal with suppliers or distributors or otherwise forcing rivals to bear higher distribution costs, though accepting the possibility of predation by abuse of governmental processes and concluding that the Supreme Court had properly decided a unilateral refusal to deal case, *Lorain Journal Co v United States*, 342 US 143 (1951)).

[20] Oliver E Williamson, 'Wage Rates as a Barrier to Entry: The Pennington Case in Perspective' (1968) 82 QJ Econ 85.

[21] Jonathan B Baker and Timothy F Bresnahan, 'The Gains from Merger or Collusion in Product Differentiated Industries' (1985) 33 J Indus Econ 427. See Jonathan B Baker, 'Why Did the Antitrust Agencies Embrace Unilateral Effects?' (2003) 12 Geo Mason Univ L Rev 31, 34 n 15 (referencing other empirical approaches). See generally, Gregory J Werden and Luke M Froeb, 'Unilateral Competitive Effects of Horizontal Mergers' in Paolo Buccirossi (ed), *Handbook of Antitrust Economics* (MIT Press 2008) 43–104; Joseph Farrell and Carl Shapiro, 'Antitrust Evaluation of Horizontal Mergers: An Economic Alternative to Market Definition' (2010) 10 BE J Theor Econ 1; Tommaso Valletti and Hans Zenger, 'Mergers with Differentiated Products: Where Do We Stand?' (2021) 58 Rev Indus Org 179.

[22] Daniel O'Brien and Steven Salop, 'Competitive Effects of Partial Ownership: Financial Interest and Corporate Control' (2000) 67 Antitrust LJ 559 (defining a Price Pressure Index). See also Farrell and Shapiro ibid (defining Upward Pricing Pressure); Steven C Salop and Serge Moresi, 'Updating the Merger Guidelines: Comments' (2009) <https://scholarship.law.georgetown.edu/facpub/1662/> accessed 13 October 2024 (defining the Gross Upward Pricing Pressure Index). Some of the underlying ideas came from Shapiro's work on diversion ratios, Carl Shapiro, 'Mergers with Differentiated Products' (1996 [Spring]) Antitrust 23, which was prefigured in part by Willig's prior discussion of the interpretation of the ratio of the cross-price to own-price elasticity of demand, Robert D Willig, 'Merger Analysis, Industrial Organization Theory, and Merger Guidelines (1991) 1991 Brookings Papers on Economic Activity (Microeconomics) 281, and from Werden's work on compensating marginal cost reductions. Gregory Werden, 'A Robust Test for Consumer Welfare Enhancing Mergers Among Sellers of Differentiated Products' 1996) 44 J Indus Econ 409. Salop (with Serge Moresi) extended the GUPPI idea to help evaluate related pricing incentives resulting from vertical mergers. Serge Moresi and Steven C Salop, 'vGUPPI: Scoring Unilateral Pricing Incentives in Vertical Mergers' (2013) 79 Antitrust LJ 185.

[23] Timothy F Bresnahan and Steven C Salop, 'Quantifying the Competitive Effects of Production Joint Ventures' (1986) 4 Intl J Indus Org 155.

highlighted the significance of the distinction between financial interest and control and has been influential in the development of contemporary approaches to analysing the competitive significance of both vertical integration and common ownership.

The observation that Salop's work on raising rivals' costs responded to Robert Bork's criticism of predatory conduct cases suggests a more general point: economic research can prompt a change in the consensus within the economics profession and the antitrust community more generally about what economics teaches. The most well-known example may be the abandonment by industrial organization economists of the structure–conduct–performance (SCP) framework, along with its implication that market concentration was often close to a sufficient statistic for predicting the extent to which firms exercised market power without regard to other aspects of market structure. The SCP framework was abandoned as the primary way economists understood industry outcomes in response to research questioning its theoretical foundations[24] and its empirical utility.[25] In the industrial organization economics research literature, it has been replaced by game-theoretic modelling[26] and new empirical tools.[27] While concentration is still thought to provide valuable information for understanding industry outcomes, the dominant view today recognizes that other industry-specific and market-specific factors are also important.[28]

Translation and synthesis

Economists have also influenced antitrust by explaining and integrating research results that are relevant to antitrust policy development and to the evaluation of antitrust cases.[29] This is an important channel. When 27 US professors of antitrust law were asked to name their three favourite articles in the field *ever* written,[30] two-thirds of the articles were authored or co-authored by economists.[31] Many of these are reasonably categorized as translation and synthesis pieces. The most frequently cited work was an important law journal article by

[24] Harold Demsetz, 'Two Systems of Belief About Monopoly' in HJ Goldschmid, HM Mann and JF Weston (eds), *Industrial Concentration: The New Learning* (Little, Brown 1974) 164–84.

[25] 'The relation, if any, between seller concentration and profitability is weak statistically, and the estimated concentration effect is usually small. The estimated relation is unstable over time and space and vanishes in many multivariate studies.' Richard Schmalensee, 'Inter-Industry Studies of Structure and Performance' in Richard Schmalensee and Robert D Willig (eds), *Handbook of Industrial Organization* vol 2 (North-Holland 1989) 951–1009, 976 (Stylized Fact 4.5). The empirical relationship between concentration and price is stronger, but issues about causality and endogeneity can create interpretive problems with both kinds of studies, particularly when they are used for merger analysis. See Nathan Miller and others, 'On the Misuse of Regressions of Price on the HHI in Merger Review' (2022) 10 J Antitrust Enforcement 248.

[26] Eg Ordover and others (n 9).

[27] See n 13 and accompanying text (describing the development of the New Empirical Industrial Organization by Bresnahan and others).

[28] There is substantial continuity among industrial organization economists working during and after the dominance of the SCP framework in one respect: they all typically treat the industry as a key unit of analysis for detailed study. cf Jonathan B Baker and Timothy F Bresnahan, 'Economic Evidence in Antitrust: Defining Markets and Measuring Market Power' Mergers' in Paolo Buccirossi (ed), *Handbook of Antitrust Economics* (MIT Press 2008) (describing the NEIO as adopting the industry case study methodology previously employed fruitfully by Chicago school economists and proposing the development of antitrust rules and presumptions based on generalizations across closely related industries, to help evaluate evidence and resolve cases); Herbert Hovenkamp, *Enterprise and American Law 1836–1937* (Harvard University Press 1991) 301 (describing the heavy commitment to the historical case-study method of a leading economics department during the first two decades of the 20th century).

[29] Teaching is potentially also a way to influence antitrust policy through translation and synthesis. For example, Aaron Director's influence on antitrust policy has been attributed primarily to his teaching and his collegial interactions. Sam Peltzman, 'Aaron Director's Influence on Antitrust Policy' (2005) 48 JL & Econ 313, 314. Each of the four profiled economists had many students who went on to successful careers in antitrust, but it is hard to gauge the extent of their influence on antitrust policy through the work of these former students.

[30] Thibault Schrepel, 'Antitrust Law Professors' Favorite Articles' (2020) Network L Rev <https://www.networklawreview.org/antitrust-professors-favorite-articles/> accessed 13 October 2024. I was one of the respondents.

[31] By my count, 55 out of the 81 articles were authored or co-authored by economists, including economists who are also lawyers. (I excluded from the count occasional 'bonus' articles mentioned in some responses.) Four of my articles were listed at least once (including one that was referenced three times: Jonathan B Baker, 'Taking the Error Out of "Error Cost" Analysis: What's Wrong with Antitrust's Right' (2015) 80 Antitrust LJ 1). No other author had as many distinct articles referenced.

Salop (co-authored with Thomas Krattenmaker) that showed how to integrate antitrust doctrine with the economics of raising rivals' costs and laid the intellectual groundwork for the revival of US antitrust law's concern with exclusionary conduct.[32]

Some notable examples of translation and synthesis review a body of economic work to identify its main themes, or to identify best practices and thereby create toolkits for use in policymaking and the adversarial process.[33] Other examples go further by advocating potentially contestable points of view tied to ongoing policy arguments.[34]

The four profiled economists helped shape policy conversations and case analyses through translation and synthesis in multiple articles. In addition to the Krattenmaker and Salop article, examples include Ordover and Willig's article evaluating predatory pricing and product innovation[35]; Ordover's article (co-authored with William Baumol) on the exploitation of private rights of actions for private rent-seeking[36]; Salop's article on the competitive effects of most favoured nations and meeting competition clauses in facilitating coordination, which grew out of his work on the FTC's *Ethyl* case[37]; and Salop's survey article on strategic entry deterrence.[38] Translation and synthesis has been a goal of some of my work as well,[39] including my writing on coordinated effects analysis in antitrust[40] and on the role of innovation issues in antitrust analysis.[41]

[32] Thomas G Krattenmaker and Steven C Salop, 'Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price' (1986) 96 Yale LJ 209. Exclusionary conduct needed reviving because antitrust commentators associated with the Chicago School expressed deep skepticism about exclusion as an antitrust theory, particularly as applied to dominant firm conduct. Eg n 19. For further discussion of Salop's work on exclusionary conduct and its influence, see the profile of Steve Salop under Section 4.

[33] These include textbooks and handbook chapters. Some undergraduate textbooks in industrial organization economics have been co-authored by economists with substantial antitrust policy experience, including Dennis Carlton and FM Scherer. The antitrust law casebook that I co-authored incorporates economics (in a non-technical way) throughout. Andrew I Gavil and others, *Antitrust Law in Perspective: Cases, Concepts and Problems in Competition Policy* (5th edn, West Academic 2024). Translation and synthesis articles written for antitrust practitioners and courts are often published in law journals. Salop and I have a friendly competition over who has written the most articles for the Antitrust Law Journal. We are not sure who is ahead, but we are reasonably confident that we are each far ahead of whoever is third.

[34] In terms of the policy conversations in which they participated, the Salop articles referenced in this paragraph have a more interventionist valence and the Ordover and Willig articles have a less interventionist valence.

[35] Jansuz A Ordover and Robert D Willig, 'An Economic Definition of Predation: Pricing and Product Innovation' (1981) 91 Yale LJ 8.

[36] William J Baumol and Janusz A Ordover, 'Use of Antitrust to Subvert Competition' (1985) 28 JL & Econ 247.

[37] Steven C Salop, 'Practices that (Credibly) Facilitate Oligopoly Co-ordination' in Joseph E Stiglitz and G Frank Mathewson (eds), *New Developments in the Analysis of Market Structure* (MIT Press 1986) 265–90. I too have written or co-authored several articles about the competitive role of most favoured nations clauses that involve translation and synthesis, including Jonathan B Baker, 'Vertical Restraints with Horizontal Consequences: Competitive Effects of "Most-Favored-Customer" Clauses' (1996) 74 Antitrust LJ 517; Jonathan B Baker and Judith A Chevalier, 'The Competitive Consequences of Most-Favored-Nation Provisions' (2013) 27 [Spring] Antitrust 20); and Jonathan B Baker and Fiona S Morton, 'Antitrust Enforcement Against Platform MFNs' 127 Yale LJ 2176.

[38] Steven C Salop, 'Strategic Entry Deterrence' (1979) 69 (Papers & Proceedings) Am Econ Rev 385.

[39] Examples include articles on most favoured nations clauses (see n 37) and an article on market definition. Jonathan B Baker, 'Market Definition: An Analytical Overview' (2007) 74 Antitrust LJ 129.

[40] Jonathan B Baker, 'Two Sherman Act Section 1 Dilemmas: Parallel Pricing, the Oligopoly Problem, and Contemporary Economic Theory' (1993) 38 Antitrust Bull 143; Jonathan B Baker, 'Identifying Horizontal Price Fixing in the Electronic Marketplace' (1996) 65 Antitrust LJ 41; Jonathan B Baker, 'Mavericks, Mergers, and Exclusion: Proving Coordinated Competitive Effects Under the Antitrust Laws" (2002) 77 NYU L Rev 135; Jonathan B Baker and Joseph Farrell, 'Oligopoly Coordination, Economic Analysis, and the Prophylactic Role of Horizontal Merger Enforcement' (2021) 168 U Pa L Rev 1895. (Two of these articles were reprinted in Benjamin Klein and Andres V Lerner (eds), *Economics of Antitrust Law* (Edward Elgar 2008); one of those two was included in the responses to the survey discussed in n 30, and accompanying text. One article was awarded the Jerry S Cohen Memorial Fund Writing Award for Best Antitrust Article of 2020 on Tacit Collusion.) Joseph Farrell and I wrote another article on coordination better classified as academic economic research near the policy end of the continuum. Joseph Farrell and Jonathan B Baker, 'Natural Oligopoly Responses, Repeated Games, and Coordinated Effects in Merger Analysis: A Perspective and Research Agenda' (2021) 58 Rev Indus Org 103.

[41] Eg Jonathan B Baker, 'Fringe Firms and Incentives to Innovate' (1995) 63 Antitrust LJ 621; Jonathan B Baker, 'Beyond Schumpeter vs. Arrow: How Antitrust Fosters Innovation' (2007) 74 Antitrust LJ 575; Jonathan B Baker, '"Dynamic Competition" Does Not Excuse Monopolization' (2008) 4 Competition Pol'y Intl 243; Jonathan B Baker, 'Evaluating Appropriability Defenses for the Exclusionary Conduct of Dominant Firms in Innovative Industries' (2016) 80 Antitrust LJ 431; Jonathan B Baker, *The Antitrust Paradigm: Restoring a Competitive Economy* (Harvard University Press 2019) 150–75 (chapter on 'Threats to Innovation from Lessened Competition').

Direct participation in policy development and the adversarial process

Economists may also influence antitrust policy through their direct participation in policy development and the adversarial process. Three of the four profiled economists served as Deputy Assistant Attorney General for Economics in the Justice Department. In that position, among other contributions, Bresnahan played a major role in devising a proposed remedy in the *Microsoft* litigation,[42] Willig's work was central to drafting the 1992 Merger Guidelines, which were the first guidelines to incorporate modern unilateral effects analysis[43]; and Ordover helped framed a creative merger remedy when a dominant firm sought to acquire a leading rival under circumstances in which the dominant firm did not enforce uncertain copyright rights against a third firm but the merged firm would likely have done so.[44] Economists can also influence competition policy development directly through government service in agencies other than the antitrust enforcement agencies.[45]

The profiled economists also participated directly in the adversarial process. Ordover, Salop, and Willig did so through extensive economic consulting practices, where they influenced the development and litigation of many cases, including through courtroom testimony by Ordover and Willig.[46] Bresnahan undertook occasional consulting assignments, including testimony, but not as frequently as the others.[47] This channel has grown substantially in significance since the 1970s.[48]

[42] For further discussion of Bresnahan's role in devising a remedy in the *Microsoft* litigation, see the profile of Tim Bresnahan under Section 4.

[43] Willig's role in drafting the 1992 Merger Guidelines is discussed further in the profile of Bobby Willig and Jansuz Ordover under Section 4. Some additional background on the development of unilateral effects analysis is provided in the profile of Tim Bresnahan under Section 4. The contributions of the 1992 Merger Guidelines to entry analysis are discussed further in the profile of Bobby Willig and Jansuz Ordover under Section 4, and in Jonathan B Baker and Janusz A Ordover, 'Entry Analysis Under the 1992 Horizontal Merger Guidelines' (1992) 61 Antitrust LJ 139; Jonathan B Baker, 'The Problem with Baker Hughes and Syufy: On the Role of Entry in Merger Analysis' (1997) 65 Antitrust LJ 353; Jonathan B Baker, 'Responding to Developments in Economics and the Courts: Entry in the Merger Guidelines' (2003) 71 Antitrust LJ 189.

[44] The remedy aimed to prevent installed-base opportunism and to allow new entrants to build on old technologies. See Final Judgment, *United States v Borland Int'l, Inc*, 1992 WL 101767 (N.D. Cal. 13 March 1992). I observed Ordover's central role in developing the remedy while working as his Special Assistant. On the remedy and its significance, see Catherine Fazio and Scott Stern, 'Innovation Incentives, Compatibility, and Expropriation as an Antitrust Remedy: The Legacy of the Borland/Ashton-Tate Consent Decree' (2000) 68 Antitrust LJ 45.

[45] When I was the Chief Economist at the Federal Communications Commission, I worked on open internet (net neutrality) issues, which have an important competition dimension, and two large telecommunications mergers simultaneously investigated by the Justice Department (AT&T/T-Mobile and Comcast/NBC Universal). As a senior economist on the staff of the Council of Economic Advisers, I worked extensively on competition issues involving telecommunications and airlines. I participated in the FCC matters in ways similar to the way I participated in the matters I worked on at the Federal Trade Commission (as Director of the Bureau of Economics) and the Antitrust Division (as Special Assistant to the Deputy Assistant Attorney General). At CEA, I was part of a larger policy development process that included other White House agencies and Executive Branch Departments.

[46] Ordover and Willig were, respectively, the third and twelfth most frequently cited economists in court cases on antitrust from the inception of the Sherman Act through 2018. Federico Ciliberto and others, Daniel Sokol, 'Economic Analysis in Antitrust Litigation: Empirical Evidence from the Courts, 1890-2018' (2024) USC CLASS Research Paper 24-22, 31 (Tbl. 9) <https://ssrn.com/abstract=4809691> accessed 13 October 2024. The citation counts appear to be driven by expert testimony, though many of the highly cited economists also have substantial research reputations.

[47] I did not systematically survey the consulting engagements and testimony of the four profiled economists or their work on litigation during government service to identify their influence on specific aspects of antitrust policy through that channel. Much of their work in these settings is confidential. I can suggest the potential for economists to influence antitrust policy through the adversarial process by mentioning three well-known matters where I participated in that capacity: *FTC v Staples*, 970 F Supp 1066 (D.D.C. 1997), which I worked on extensively while serving as Director of the FTC's Bureau of Economics; *FTC v HJ Heinz Co*, 246 F.3d 708 (D.C. Cir. 2001), where I testified in district court as an economic expert on behalf of the merging firms; and *US v Google LLC*, 2024 WL 3647498 (D.D.C. 2024), where I testified in district court as an economic expert on behalf of the state government plaintiffs. On the economic issues in *Heinz*, see Jonathan B Baker, 'Efficiencies and High Concentration: Heinz Proposes to Acquire Beech-Nut (2001)' in John E Kwoka, Jr and Lawrence J White (eds), The Antitrust Revolution (5th edn, OUP 2008) 157. On *Staples*, see Jonathan B Baker, 'Econometric Analysis in *FTC v. Staples*' (1999) 18 J Pub Pol'y and Marketing 11, for an economic-oriented discussion and Jonathan B Baker and Robert Pitofsky, 'A Turning Point in Merger Enforcement: *Federal Trade Commission v. Staples*' in Daniel A Crane and Eleanor M Fox (eds) *Antitrust Stories* (West Academic 2007) 311–30 for a legal-oriented one.

[48] Ciliberto and others (n 46).

3. OVERARCHING THEORIES OF THE ROLE OF ECONOMICS IN ANTITRUST

The detailed descriptions of the work of the four profiled economists and the channels through which they influenced antitrust policy illustrate both the attraction and the limitations of three common accounts of the reason economists and economics matter. I will term these the public interest theory, the big business capture theory, and the triumph of neoliberalism.

Public interest theory

Under the public interest theory, the best ideas rise to the top on their intellectual merits.[49] Academic economists develop new theoretical models, empirical results, or experimental analyses that explain how various firm practices benefit or harm competition, either in general or in specific industries. Those advances in economic learning are presented at economic conferences and published in economics journals. Government enforcers learn about the new work through staff economists, and antitrust practitioners learn about it through economic consultants. Enforcers and practitioners bring it to bear in the analysis and litigation of individual cases, and in the formulation of government policies or in advocacy with respect to antitrust rules before the courts.

In support of this theory, the Supreme Court has relied on then-current economic research at key junctures in the development of antitrust rules and doctrine. In *Philadelphia National Bank*, the Court referenced economic analyses by leading academics of the time when it formulated the structural presumption in horizontal merger analysis and asserted that the presumption 'is fully consonant with economic theory'.[50] In *GTE Sylvania*, the Court referenced economic analyses of the competitive benefits of non-price vertical restraints for dealer investment in point-of-sale services by preventing dealer free riding to justify shifting the legal rule governing such conduct from per se illegality to the rule of reason.[51] In *Leegin*, the Court included extensive references to the economics literature in justifying overturning the per se prohibition against resale price maintenance.[52]

To a similar effect, enforcement agency merger guidelines have evolved over time to assimilate new economic learning. Most notably, the 1992 Horizontal Merger Guidelines incorporated unilateral effects theories of the competitive effects of horizontal mergers, which had only recently been developed in the academic literature.[53] The current (2023) Merger Guidelines incorporate other developments in economics. These include the broad influence of the literature on raising rivals' costs in the Guidelines section concerned with exclusionary conduct,[54] the assimilation of the more recent literature on multi-sided platforms into the

[49] The intellectual merits of new research are determined by the relevant intellectual community, here scholars in the field of industrial organization economics. While there is room to debate the extent to which contributions to knowledge are correctly identified, and whether there could even in principle be an objective basis for doing so, there is typically a consensus among the elite researchers (eg, journal editors and senior faculty at prestigious research-oriented institutions) whether and why new research advances the field and is on the frontier of knowledge. By contrast, my sense is that legal fields generally do not share the same sense of a frontier of knowledge (other than, to some extent, the law and economics, which is also a field in economics).

[50] *United States v Philadelphia Nat'l Bank*, 374 US 321, 363 and 363; see n 38 and 39 (1963).

[51] *Continental TV, Inc v GTE Sylvania Inc*, 433 US 36 (1977). The decision referenced articles written by economists and articles written by legal scholars including Richard Posner that summarized the work of economists.

[52] *Leegin Creative Leather Prods, Inc v PSKS, Inc*, 551 US 877, 889–98 (2007). The dissent also provided a detailed discussion of the relevant economic literature. ibid 910–17 (Breyer J, dissenting).

[53] For further discussion of the role of Tim Bresnahan, Bobby Willig, and their respective academic work in influencing the incorporation of unilateral effects theories, see text accompanying n 21 and 22 and the profiles of Tim Bresnahan and of Bobby Willig and Januz Ordover under Section 4.

[54] U.S. Department of Justice and Federal Trade Commission, Merger Guidelines s 2.5 (2023).

Guidelines section concerned with mergers involving such platforms,[55] and nods to more recent economic work on common ownership[56] and killer acquisitions.[57] Senior academic economists have frequently played an important role in drafting government merger guidelines, thereby facilitating the transmission of economic learning from the academy to those economic policy statements.[58]

Although there is some basis for the public interest theory, it is incomplete. Under the public interest theory, the influence of economists in antitrust policymaking runs in a channel flowing in just one direction: from the ivory tower to judges and policymakers. Economists in academia generate new learning. Government officials such as judges and their law clerks or enforcement agency officials then identify nuggets of policy relevance to incorporate in their analysis of cases or the development of rules or policies. The latter task is facilitated by economists who work as expert witnesses in litigation or on the staff of government enforcement agencies. Yet, in practice, many important interactions flow in the opposite direction: from academia to the judicial and policymaking world. Policy debates often influence research, as with the contributions of the profiled economists described above as economic research near the policy end of the research continuum.

Moreover, the public interest theory does not account for the complex relationship between economic ideas and legal decisions. When legal perspectives change, doctrines respond at different rates creating tensions in the law that judges must recognize and account for.[59] In addition, courts need to recognize and accept new ideas before they can adopt them, giving a role to amicus briefs and to law clerks, who are often recent law school graduates exposed to new thinking in the classroom.[60]

The public interest theory is also limited because it treats academic research as solely a value-neutral accumulation of knowledge. That perspective often seems reasonable, particularly with respect to research near the academic end of the continuum. However, it ignores the role of interested parties in promoting or shaping policy-oriented research that is highlighted by the second common description of the role of economics in policy analysis, the big business capture theory.

Big business capture theory

According to the big business capture theory, research that benefits large firm defendants has the highest profile and the most influence because large firms are the most organized and well-funded interest groups.[61] This theory has a selection variant and an incentive variant.

The selection variant maintains that large firms subject to antitrust scrutiny and the defence bar that represents them identify economists who have developed new economic

[55] Merger Guidelines s 2.9 (2023).

[56] Merger Guidelines s 2.11 (2023). See n 15.

[57] Merger Guidelines s 4.2.E (2023). See Colleen Cunningham, Florian Ederer and Song Ma, 'Killer Acquisitions' (2021) 129 J Pol Econ 649.

[58] I am referring, for example, to the role Bobby Willig played in drafting the 1992 Merger Guidelines, the role Joe Farrell and Carl Shapiro played in drafting the 2010 Merger Guidelines, and the role Susan Athey and Aviv Nevo played in drafting the 2023 Merger Guidelines.

[59] See Jonathan B Baker, 'A Preface to Post-Chicago Antitrust' in Roger van den Bergh and others (eds), *Post Chicago Developments in Antitrust Law* (Edward Elgar 2002) 69–70 (recounting the way tensions between the law governing non-price vertical restraints and resale price maintenance in the wake of *GTE Sylvania*, and the economic ideas at stake, affected later judicial decisions).

[60] Justice Powell's law clerk, Tyler Baker, helped call the Justice's attention to economic scholarship relevant to the Court's *Sylvania* decision that the clerk had apparently been exposed to in law school. Andrew I Gavil, 'A First Look at the Powell Papers: Sylvania and the Process of Change in the Supreme Court' (2002 [Fall]) Antitrust 8, 12.

[61] For a recent defence of the big business capture theory see Filippo Lancieri, Eric A Posner and Luigi Zingales, 'The Political Economy of the Decline of Antitrust Enforcement in the United States' (2023) 85 Antitrust LJ 441. For my response, see Jonathan B Baker, 'Not a Simple Story of Big Business Capture: An Essay on the Political Economy of Antitrust' (2023) 85 Antitrust LJ 521.

analyses that advance the firms' advocacy and litigation positions and then promote the dissemination of those economists' work. The incentive variant takes the view that the firms and their counsel achieve a similar end by providing financial support, such as research grants or consulting fees, to encourage economists to develop new economic work that the firms can use in advocacy. This variant also suggests a less direct route for influence: academic economists may choose projects and research paths with the aim of supporting the advocacy positions of firms that would later hire those economists as consultants.

In the selection variant, academic research is governed primarily by academic norms. Researchers select projects and conduct research to address questions of academic interest and develop or apply tools to do so with the goal of advancing the research literature, largely without regard to potential policy applications or to how their research results are utilized or promoted in antitrust litigation and policymaking.

In contrast, the incentive variant raises the possibility that academic norms may be compromised, though not necessarily so. When an academic researcher chooses research projects based on whether the topics interest funders, that choice alone does not affect how the projects are conducted or what results are reported so it does little or no violence to academic norms. Although that choice pushes the research literature to develop in directions that researchers might not have chosen independently,[62] it is hard to know what progress on other academic frontiers would be foregone.[63] To the extent researchers have conscious or unconscious desires to secure future corporate support by pleasing funders with the results of their research, however, academic norms may be ignored, bent, or broken.[64]

Critics, who range from observers within the economics profession to the current Assistant Attorney General for Antitrust, have suggested that research towards the policy end of the research continuum increasingly violates academic norms,[65] and that the presentation of economic analysis in adversarial settings may also violate advocacy norms.[66] The

[62] cf Joseph Menn and Naomi Nix, 'Big Tech Funds the Very People Who Are Supposed to Hold It Accountable' *The Washington Post* (Washington, 7 December 2023) <https://www.washingtonpost.com/technology/2023/12/06/academic-research-meta-google-university-influence/> accessed 14 October 2024 (describing interviews with professors indicating that tech companies used their control of academic funding and access to data to influence research (on subjects such as artificial intelligence, and the spread of hate speech and disinformation on social media) to shift research targets 'in small –but potentially transformative—ways').

[63] Corporate funders may be less interested in basic research than academics would be on their own. If so, the influence of funding on project choices may slow the extent to which academics are advancing the research frontier on fundamental questions. On the other hand, during the 20th century corporate research laboratories, particularly Bell Labs, sponsored path-breaking basic scientific research, and several large technology firms invest heavily in artificial intelligence research today. To the extent that corporate funding shifts academic time allocation away from research and toward consulting; moreover, big business financial support may slow the rate of progress in research across-the-board, but that dynamic would not on its own compromise academic norms.

[64] When acting according to academic norms, a researcher aims, broadly speaking, to identify the most convincing answer to a question or the best understanding of an issue, in a disinterested way that accounts for the available evidence and considers reasonable alternatives. Eg American Economic Association, 'Code of Professional Conduct' (2018) <https://www.aeaweb.org/about-aea/code-of-conduct> accessed 14 October 2024 (indicating, among other things, that economists are expected to undertake a 'disinterested assessment of ideas' and acknowledge the 'limits of expertise'). See also National Committee for Research Ethics in the Social Sciences and the Humanities, 'Guidelines for Research Ethics in the Social Sciences and Humanities' (2022) <https://www.forskningsetikk.no/en/guidelines/social-sciences-and-humanities/guidelines-for-research-ethics-in-the-social-sciences-and-the-humanities/> accessed 14 October 2024.

[65] Relatedly, several scholars have suggested that conflicts of interest reduce the credibility of academic research throughout the continuum. John Barrios and others, 'The Conflict-of-Interest Discount in the Marketplace of Ideas' (2024), Stigler Center New Working Paper No 348 <https://www.chicagobooth.edu/research/stigler/research/working-papers/the-conflict-of-interest-discount-in-the-marketplace-of-ideas> accessed 14 October 2024. According to their estimates, the authors of 59%–65% of papers published in the American Economic Review have some type of a conflict of interest (financial, career, data-related, academic, or political), and that such conflicts lead readers to update their prior views about the subject of the average paper by roughly half of the extent to which they would update those views absent a conflict. ibid 30.

[66] Advocates, broadly speaking, aim to achieve the best outcome for their client without making misrepresentations. This norm is most well-developed and explicated for legal counsel. Lawyers acting as advocates are expected to zealously assert their client's position, have a non-frivolous basis in law and fact for the arguments they make before a court, and avoid false statements of law or fact when making arguments both in court or before a legislative body or administrative agency in a non-adjudicative proceeding. American Bar Association, 'Model Rules of Professional Conduct' (2024), Preamble para 2, Rules

criticism involves several interrelated claims suggested by the big business capture theory. One is that the work product of corporate-funded academic research centres, particularly ones that specialize in translation and synthesis, has unwarranted influence because it is often advocacy masquerading as academic research.[67] Another is that academics associated with such centres or invited to participate in the conferences or other activities they sponsor are chosen to give visibility to positions favoured by funders, or that they select topics to pursue to please funders.[68] A third is that some economic consultants working on behalf of well-funded corporate interests respond to financial incentives by making baseless or intentionally misleading claims when presenting economic analysis in adversarial settings involving enforcement agency investigations, litigation, or policy development.[69] The immediate result of this conduct, according to the critics, is to distort policy development and advocacy by sowing unwarranted doubt about the reliability of sound economic research, particularly research that tends to support arguments disfavoured by big business.[70] The long-term result is to harm the legitimacy of academic research more generally.[71]

The critics correctly recognize that litigants and prospective litigants may promote research that serves their economic interests[72] and that large firm defendants on average

3.1, 3.3, and 3.9 <https://www.americanbar.org/groups/professional_responsibility/publications/model_rules_of_professional_conduct/model_rules_of_professional_conduct_table_of_contents/> accessed 14 October 2024. See also ibid Preamble para 8 ('[W]hen an opposing party is well represented, a lawyer can be a zealous advocate on behalf of a client and at the same time assume that justice is being done.') The difference between academic and advocacy norms implies that an economic consultant may advise counsel on framing economic arguments that counsel wishes to make, as well as on the pros and cons of such arguments, when the economist might not make those arguments or would make them differently in work product submitted under the economist's own name. An economist working on antitrust-related issues may also act as an expert witness. The norms governing that role differ from the norms governing advocates but will not be discussed further.

[67] 'One tactic involves the use of academic research centers, which allow corporate funders to evade disclosure requirements' and thereby allow corporations to 'buy influence' in a way that avoids the affected professors or training programmes 'having to report the company's involvement'. Jonathan Kanter, 'Remarks for the Fordham Competition Law Institute's 51st Annual Conference on International Antitrust Law and Policy' (2024) <https://www.justice.gov/opa/speech/assistant-attorney-general-jonathan-kanter-delivers-remarks-fordham-competition-law-0> accessed 14 October 2024. See also Tomasso Valletti, '"Doubt is Their Product": The Difference between Research and Academic Lobbying' (2020) ProMarket <https://www.promarket.org/2020/09/28/difference-between-research-academic-lobbying-hidden-funding> accessed 14 October 2024 (claiming that the work product that certain research centres produce often incorporates 'serious misrepresentations of economics' presented by economists lacking academic credentials under 'semi-academic camouflage'). Valletti is an academic economist who has served as the Chief Competition Economist of the European Commission.

[68] cf Kanter (n 67) (questioning the erosion of the distinction between independent academic expertise and advocacy that results when corporations and foundations fund university centres and institutes and conferences 'specifically to influence the evolution of expert thought in competition policy').

[69] Eg Cristina Caffarra, 'What Signal are the Draft Merger Guidelines Sending to Enforcers Elsewhere?' (2023) ProMarket <https://www.promarket.org/2023/08/17/what-signal-are-the-draft-merger-guidelines-sending-to-enforcers-elsewhere/> accessed 14 October 2024 ('[T]his is not to say economic logic and intuition have no place: but as practiced at the coal face of private consulting, it is hardly reliable science.'); see also ibid ('The baseline [in merger analysis prior to 2023] had become pretty much that mergers are mostly benign or pro-competitive, as the resources of economic consultants have been directed at coming up with ever more exculpatory narratives.'); Cristina Caffarra (@Caffar3Cristina) (X 7 November 2021 [11:20 am] <https://x.com/Caffar3Cristina/status/1457382485831061508> accessed 14 October 2024 (indicating that economic consultants 'have become advocates making up narratives with pseudo-maths to support bad deals & bad conduct'). Caffarra is a competition economist who worked as a prominent consultant in Europe for more than 25 years. Until recently, she worked mainly on behalf of merging firms.

[70] Eg Valletti (n 67).

[71] The Assistant Attorney General for Antitrust argues that 'money earmarked specifically to discourage antitrust and competition law enforcement' is 'distort[ing] the academic dialogue and reshap[ing] expertise into advocacy'. As a result, he contends, among competition policy specialists in 'legal academia, … economics, … [and] public policy', '[c]onflicts of interest and capture have become so rampant and commonplace that it is increasingly rare to encounter a truly neutral academic expert'. This process is leading to 'a seeping distrust of expertise by the courts and by law enforcers' to the point where 'corporate money is threatening expertise in competition policy as it once did in tobacco regulation', where, in the 1950s. 'Big Tobacco' undertook a 'successful campaign to twist scientific research about the harms caused by its products'. Kanter (n 67). See also Ask a Harvard Professor with Lawrence Lessig, 'What Leads to Academic Corruption?' (*Harvard Magazine,* 9 September 2009) <https://www.harvardmagazine.com/2019/09/lawrence-lessig> accessed 10 November 2024.

[72] See eg Brody Mullins and Jack Nicas, 'Paying Professors: Inside Google's Academic Influence' Campaign, *The Wall Street Journal* (New York, 14 July 2017). Moreover, some policy-oriented economic research may in part act as an advertisement for consulting work.

would be expected to have a louder megaphone than injured buyers, suppliers, and rivals.[73] To the extent this activity affects the research and policy literature in practice, though, it is more likely to influence translation and synthesis than to influence the direction or results of academic research.[74]

The problems that the critics identify have the potential to skew antitrust policy development and enforcement. For that reason, they need to be recognized and addressed. But they are manageable problems that do not add up to systematic or thoroughgoing big business capture of antitrust institutions.

The criticisms of the role of academic research centres in policy debates,[75] and the potential for confusing advocacy and research that arises when such centres receive undisclosed support from firms or institutions with policy views, call for disclosure of the sources of centre funding in work or activities supported by those centres.[76] Economists are increasingly doing that with respect to other potential sources of influence.[77]

When courts and enforcers understand the financial interests of the authors, they can take that into account when evaluating the research much as they account for the influence of the current and past positions, activities, and affiliations of the authors or their ideological perspectives.[78] That understanding is aided by funding disclosure requirements and by the access of readers in most settings to counterarguments presented by disinterested parties or comparably reputable advocates with opposing financial interests.[79] It does not serve the advocacy process or public debate if the economic analysis is ignored simply because it is funded by an interested party when the source of that funding is disclosed, though the interest of the funder can be considered when evaluating the probative value of

[73] Firms protecting market power have systematically more to gain from investing in influencing antitrust outcomes than rivals seeking to open markets to competition. See Richard J Gilbert and David MG Newbery, 'Preemptive Patenting and the Persistence of Monopoly' (1982) 72 Am Econ R 514. Moreover, buyers and suppliers likely often have greater difficulty surmounting collective action problems than do firms in concentrated markets exercising market power.

[74] But cf Barrios and others (n 65) (discussing the effect of conflicts of interest on the trustworthiness of all academic research).

[75] To provide perspective on my views on organizations that undertake antitrust policy advocacy, I should disclose my involvement with them. For nearly a quarter century (other than during government service), I have been a member of the advisory board of the American Antitrust Institute, a centre-left antitrust think tank, and have contributed to some of its policy research. At various times over the past three decades (including the present) I served in roles that contributed to policy statements of the Section of Antitrust Law of the American Bar Association. For nearly 6 years ending in 2020, I was a member of the board of advisors of the Global Antitrust Institute, a conservative antitrust research centre associated with George Mason University's Antonin Scalia Law School that was criticized by Tomasso Valletti, see n 67, but I never contributed to its policy research. I should also note that Robert Willig's academic research on economies of scope (n 4) and contestable markets (n 14 and accompanying text) began during the 1970s when Willig worked in the economic research department of AT&T's Bell Labs, a corporate research laboratory. Willig's work had applications to regulatory issues confronting AT&T's telephone business during that era, but Bell Labs did not sponsor policy advocacy.

[76] Assistant Attorney General Kanter emphasized that absent disclosure of an academic research centre's corporate donors, corporate funders can 'evade disclosure requirements' leading to 'advocacy deceptively presented as expertise' in centre-funded work. Kanter (n 67). See also Valletti (n 67).

[77] In response to the concern that economists acting as advocates are passing themselves off as acting as academic researchers, economists today commonly include disclosure statements when publishing competition-related research (from the academic to the policy end of the continuum) and leading US academic publications in both the economics and antitrust law fields have introduced disclosure policies. Eg, American Economic Association, 'Disclosure Policy' <https://www.aeaweb.org/journals/policies/disclosure-policy> accessed 14 October 2024; Antitrust Law Journal, 'Policy on Disclosures of Interest and Possible Conflicts of Interest' <https://www.americanbar.org/groups/antitrust_law/resources/journal/publication-procedures-policies/> accessed 14 October 2024. These disclosures do not, however, address the concern with the sources of financial support for research centres. Barrios and others (n 65) argue that these disclosures also provide insufficient information about non-financial conflicts of interest, particularly those arising from the terms on which researchers gained access to data.

[78] Barrios and others (n 65) find that disclosures lead readers to discount the value of papers subject to various types of conflicts of interest, including financial, and that those discounts are calibrated by factors related to the nature and extent of the conflict such as the source and magnitude of financial support and whether the results appeared to be against the author's interest. They find that those discounts are roughly comparable to the evaluation of rational Bayesian agents who know the relevant literature. ibid 35.

[79] In general, readers attuned to an economic field can infer the ideological perspective of the authors of academic articles from author word choices. See Zubin Jelveh and others, 'Political Language in Economics' (2024) 134 Econ J 2439.

the analysis.[80] Nor does it serve the advocacy process or public debate if economic analysis is ignored simply because of the author's affiliations and activities unrelated to direct funding.[81] The more attenuated the relationship between an economist's past activities and affiliations (including consulting work) and the economic analysis presented in advocacy settings, the more cautious an enforcement agency, a court, or the public should be about discounting the analysis based simply on claims of the appearance of bias.[82]

The problem of economists submitting baseless or intentionally misleading testimony or economic evidence is inherent in adversarial settings.[83] In the courts, it is policed by a range of devices potentially including cross-examination, training for experts and counsel in best practices, non-adversarial education for decision-makers (eg, judges), the use of neutral (non-party) experts to aid decision-makers, and ways of pushing consultants or witnesses to clarify their differences.[84] To facilitate the effectiveness of these tools, expert witnesses are required to disclose in writing their opinions, qualifications, prior testimony, and compensation[85]; they are subject to deposition on the bases and methodology for their opinions[86]; and their testimony may be excluded if it is not based on 'sufficient facts or data' or not 'the product of reliable principles and methods', or if the expert's opinions do not reflect 'a reliable application of the principles and methods to the facts of the case'.[87] The enforcement agencies use similar approaches informally when reviewing economic work submitted to them, relying importantly on internal economic expertise. It is not obvious that this problem is worse in adversarial settings than academic settings, where research conclusions may be skewed by publication bias and pretesting or infected by fraud.[88]

[80] See Kanter (n 67) (highlighting the importance of 'honest and open debate', describing advocacy as 'the cornerstone of our system', explaining that 'just because someone is paid to argue a position does not mean they are wrong', and describing his concern as 'advocacy being deceptively presented as expertise').

[81] In the interest of disclosure, a 2018 report about speakers at a then-upcoming FTC hearing on antitrust policy in an era of big tech described me as having indirect ties to Google because I was affiliated with a consulting firm that worked for Google (although I was not an employee of the firm and did not personally work on firm projects for Google) and because I served on the advisory board of an academic research centre run by an academic who had been supported by Google. Tech Transparency Project, 'FTC Tech Hearings Stacked With Google-funded Speakers' (12 September 2018) <https://www.techtransparencyproject.org/articles/ftc-tech-hearings-heavily-feature-google-funded-speakers> accessed 14 October 2024. Five years later, I testified adversely to Google as an expert economic witness for the government. United States v. Google LLC—F. Supp. 3d—2024 WL 3647498 (2024).

[82] If indirect relationships are treated as reasons to dismiss economic analysis presented in advocacy settings, consultants and expert witnesses will increasingly be led to work on just one side of antitrust cases—for plaintiffs (including the government) or for defendants—for their entire career. The resulting polarization of economic expertise would tend to make all economists who participate in advocacy look more like advocates than experts, undermining trust in the adversarial process. It would also tend to discourage the development of a professional consensus among antitrust economists about the utility of analytical tools or the potential consequences of business practices, making it harder for generalist judges to identify the reasons experts disagree. Outside of advocacy settings (which provide ways to test and evaluate the credibility of research); moreover, pervasive conflicts of interest, even if disclosed, can harm the academic community by increasing distrust in academic research as a whole, see Barrios and others (n 65) 43.

[83] Nearly two decades ago, this problem was a central concern of a task force created by the American Bar Association's Section of Antitrust Law, which I co-chaired. See Jonathan B Baker and M Howard Morse, Final Report of Economic Evidence Task Force (2006) <https://www.americanbar.org/content/dam/aba/publications/antitrust/comments-reports-briefs/2006/report-01-c-ii.pdf> accessed 14 October 2024. In the interest of disclosure, I have testified in court and in deposition for both corporate defendants and government plaintiffs, including in the matters identified (see n 47), as well as in other matters identified on my curriculum vitae, which can be found at <https://www.wcl.american.edu/community/faculty/cv/jbaker> accessed 14 October 2024. I have also worked as a consultant on other matters, most of which are confidential, for both government agencies and companies. My association with organizations that undertake antitrust policy advocacy is described in n 75.

[84] These are among the potential devices discussed in Memorandum from Baker and Morse ibid.

[85] Fed. R. Civ. P. 26(a)(2)(B).

[86] Fed. R. Civ. P. 26(b)(4)(A).

[87] Fed. R. Evid. 702.

[88] On the former, see eg Abel Brodeur and others, 'Methods Matter: "P-Hacking and Publication Bias in Causal Analysis in Economics"' (2020) 110 Am Econ R 3634 (indicating that 'Evidence of selective publication and specification searching in economics and other disciplines is by now voluminous … . Publication bias, whereby the statistical significance of a result determines the probability of publication, is likely a reflection of the peer review process.')

The big business capture theory is not compelling for another reason.[89] If taken to an extreme, it would mean that economists have little or no influence on antitrust policy. The actors with policy influence would primarily be the big firms pulling the strings and deciding what economic thinking to promote. Neither the extreme version of this theory nor a less extreme position treating big business capture as a strong tendency can be the full story, however, for an obvious reason: The big business capture theory cannot easily be reconciled with frequent development and adoption of new economic ideas and tools that have helped enforcers and courts to deter anticompetitive conduct more effectively by identifying competitive problems not previously addressed and by identifying more familiar competitive problems more reliably.[90]

Two examples come from the work of the profiled economists. Bresnahan,[91] Salop,[92] and Willig[93] each contributed to the recognition and identification of the unilateral effects of horizontal mergers, which became central to merger analysis during the late 20th century.[94] Similarly, Salop's work on raising rivals' costs[95] underlies much of the resurgence of interest and concern with exclusionary conduct in the enforcement agencies and courts over the last few decades.[96] These examples, along with many other examples of the adoption of economic ideas supporting antitrust enforcement,[97] show that economic analysis does not necessarily or always serve big business interests. They demonstrate that the influence of economists on antitrust does not operate either wholly or primarily through the promotion of economic ideas favoured by big business.

Triumph of neoliberalism

The third overarching theory is that economists have had unusual influence on antitrust policy specifically, and on economic policy more generally, during the past five decades because the political system has been in thrall to market-oriented neoliberal ideas since roughly the late 1970s.[98] This theory appears implicit in the writing of some neo-Brandeisian

[89] 'Furthermore, the capture theory's focus on the interests of big business is challenging to reconcile with the observation that the advocates of pro-business positions in antitrust policy debates commonly frame their positions in public interest terms and generally support the antitrust laws rather than calling for their repeal, even when advocating reduced antitrust intervention. Even if that framing is intended in part to lend legitimacy to rent-seeking goals or to help business interests solve their collective action problem, this observation suggests a recognition that antitrust is more than just a policy area responsive to interest group claims.' Jonathan B Baker, 'Has Antitrust Been Captured by Big Business Interests? It's Not So Simple' *ProMarket* (2024) <https://www.promarket.org/2024/02/09/has-antitrust-been-captured-by-big-business-interests-its-not-so-simple/> accessed 14 October 2024. For additional discussion of reasons for questioning the big business capture theory, and an explanation of why doing so is not inconsistent with recognizing that the courts and enforcement agencies substantially altered antitrust law beginning in the late 1970s, moving the law in a less interventionist direction congenial to the interests of large firms, see Baker (n 61).

[90] For the same reason, it is wrong to suppose that only Chicago school economic thinking and Harvard school administrability concerns mattered in the development of antitrust law and policy during the past half century.

[91] Eg Baker and Bresnahan (n 21).

[92] Eg O'Brien and Salop (n 22).

[93] Eg Willig (n 22).

[94] See generally Baker, Unilateral Effects (n 21). Many other economists aside from Bresnahan, Salop, and Willig made substantial contributions to the development of unilateral effects analysis. See eg n 22.

[95] Eg Salop and Scheffman (n 16); Krattenmaker and Salop (n 32); Ordover and others (n 9).

[96] See generally Jonathan B Baker, 'Exclusion as a Core Competition Concern' (2013) 78 Antitrust LJ 527.

[97] For other examples, see Baker (n 61) 526–27.

[98] Neoliberalism is, in a general way, a perspective on the appropriate role of government relative to the private sector in economic and social life that favours rolling back social democratic policies in favour of relying more on unregulated markets. See Mehrsa Baradaran, *The Quiet Coup: Neoliberalism and the Looting of America* (Norton 2024) xvii (defining neoliberalism as 'an economic ideology that champions free markets as the sole guarantor of freedom and catalyst for prosperity while denouncing taxation and regulation as a threat to liberty'); Romain Huret and others, 'The New Deal: A Lost Golden Age?' in Romain Huret and others (eds), Capitalism Contested: The New Deal and Its Legacies (University of Pennsylvania Press 2020) 3 (describing neoliberalism as 'the attempt to insert the principles of classical liberalism into modern governance'); Kevin Vallier, 'Neoliberalism' *The Stanford Encyclopedia of Philosophy* (Winter edn, 2002) <https://plato.stanford.edu/entries/neoliberalism/> accessed 14 October 2024. On the 'neoliberal turn' in the USA and Europe, see J Bradford DeLong, *Slouching Toward Utopia: An Economic History of the Twentieth Century* (Basic Books 2022) 427–59.

commentators on antitrust policy[99] and has been made with respect to a wider range of public policy arenas.[100] The theory is conceptually distinct from the big business capture theory because it treats ideology as having an influence on policymaking independent of the identity of the interest groups that benefit.

In broad brush, the triumph of neoliberalism theory suggests that the influence of economists like those profiled here was historically contingent: that it was the natural outgrowth of a half-century-long political consensus that public policy regarding economic regulation should implement economic ideas. For this purpose, I do not distinguish right-neoliberalism from left-neoliberalism.[101] Instead, I treat this overarching theory as an ideological preference for relying on markets, and I emphasize the implication that policy debates involving antitrust and regulation should largely centre on economic concepts and issues.

This theory is attractive because the Supreme Court focused antitrust policy on economic goals, rejecting appeals to social and political goals, beginning in the late 1970s when Chicago school thinking began to replace structuralist antitrust ideas in the courts.[102] But it is wrong to suppose that economics had less influence on judicial thinking before the late 1970s. 'That the heavy use of economics in leading antitrust decisions dates back at least [to the 1940s] is amply supported by a consideration of the most salient cases of the period,' including *Alcoa*, *United Shoe*, *du Pont (Cellophane)*, and *Brown Shoe*.[103] In *Philadelphia*

[99] Eg Lina M Khan, 'The Ideological Roots of America's Market Power Problem' (2019) 127 Yale LJ Forum 960, 969 n 40 and 970. See also 'Interview with Barry C. Lynn' *Age of Economics* (9 October 2021) <https://www.ageofeconomics.org/interviews/barry-c.lynn/> accessed 14 October 2024 (explaining that '[f]or the last 40 years, as we've seen power concentrated in these corporations, as the economists in our midst have been the priests for these corporations, hiding their power, hiding their predation, we, as people have been locked into tighter and tighter intellectual structures, into a black box created by the monopolists.').

[100] Eg Binyamin Applebaum, *The Economists' Hour* (Little, Brown 2019). cf Lynn (n 99) (explaining that since the late 1970s and early 1980s, 'economics as a profession is to a very large degree responsible for all of the great economic, structural, political, environmental crises we face'). See also Greg Rosalsky, 'Have Economists Gone Out of Fashion in Washington?' *Planet Money* (2024) <https://www.npr.org/sections/planet-money/2024/09/23/g-s1-23958/economists-influence-washington> accessed 14 October 2024 (suggesting that economists have heavily influenced US economic policy since the 1980s, but that their influence is ending). But cf Elizabeth P Berman, *Thinking Like an Economist* (Princeton University Press 2022) 18 (distinguishing the rise of neoliberalism from the adoption of an economic style of reasoning not associated with the right, not explicitly political, and advanced by Democrats even more than Republicans).

[101] See DeLong (n 98) 448–49 (distinguishing between left neoliberals, who sought to achieve social democratic ends more efficiently through market mechanisms, and right neoliberals, who generally opposed government intervention in the economy). Many commentators, including some neo-Brandeisians and other commentators with a progressive political orientation, appear to equate neoliberalism with right-neoliberalism, a specific set of economic ideas associated with conservative political positions. See Elizabeth Popp Berman, 'Economics: Looking Back to Move Forward' Democracy J (2022) <democracyjournal.org/magazine/64/economics-looking-back-to-move-forward/> accessed 14 October 2024 (describing neoliberalism as often associated with the political right while recognizing left-neoliberalism as both pro-market and pro-redistribution, seeking to leverage market mechanism and incentive regulation to achieve more progressive ends).

[102] See Robert Pitofsky, 'The Political Content of Antitrust' (1979) 127 U Pa L Rev 1051, 1051 (indicating that during the 1970s, the courts were persuaded to adopt an exclusively economic approach to antitrust questions); *Morrison v Murray Biscuit Co*, 797 F.2d 1430, 1437 (7th Cir. 1986) (Posner, J.) (concluding that antitrust decisions since the late 1970s articulated an economic goal). cf Mark Glick, 'Antitrust and Economic History: The Historic Failure of the Chicago School of Antitrust' (2019) 64 Antitrust Bull 295, 296 (describing the Chicago school of antitrust as 'an integral part of the neoliberal policy program').

[103] Louis Kaplow, 'Antitrust, Law & (and) Economics, and the Courts' (1987) 50 L & Contemp. Probs. 181, 185. Kaplow references *United States v Aluminum Co of Am* (*Alcoa*), 148 F.2d 416 (2d Cir. 1945), for its discussion of market definition and its relationship to market power; *United States v United Shoe Machinery Corp*, 110 F. Supp. 295 (D. Mass. 1953), *aff'd per curiam*, 347 US 521 (1954), for its heavy use of economic analysis and the role of a leading economist in assisting the district court judge; *United States v EI du Pont de Nemours & Co* (*Cellophane*), 351 US 377 (1956), for relying on economic concepts such as cross-elasticity of demand in discussing market definition; and *Brown Shoe Co v United States*, 370 US 294 (1962), for reading ambiguous statutory language to refer to product and geographic markets in the sense economists use those terms. While the economic analysis in some of these decisions have been criticized, the cases fairly demonstrate the influence of economics on antitrust decisions of their era. See also Frederick M. Rowe, 'The Decline of Antitrust and the Delusions of Models: The Faustian Pact of Law and Economics' (1984) 72 Geo LJ 1511, 1521 ('Subtly transmuting the idea of concentration of economic power into the concept of market power measurable by numerical market shares, *Alcoa's* confluence of law and economics was to become the source of antitrust norms for a generation.'); Paul A Pautler, A History of the FTC's Bureau of Economics (2015) AAI Working Paper No 15-03, 41–42 <https://ssrn.com/abstract=2657330> accessed 14 October 2024 (describing the extensive contribution of economic analysis to the FTC's 1963 decision involving Procter & Gamble, which was ultimately affirmed by the Supreme Court in *FTC v Procter & Gamble Co*, 386 US 568 (1967)).

National Bank, another structural era landmark, the Supreme Court relied on then-current consensus economic thinking and referenced leading economists in support of presuming competitive harm from horizontal mergers that increased concentration in concentrated markets.[104] While the Court similarly relied on economic thinking in one of the major decisions that ushered in the Chicago school era, *GTE Sylvania*,[105] these examples show that reliance on economics does not distinguish the latter era.[106]

The two eras differed in the way they used economics in antitrust cases in two ways. After the late 1970s, the Supreme Court no longer referenced social and political goals and appealed exclusively to economic goals.[107] Also, in general, the Court shifted antitrust doctrines away from bright line rules (like per se illegality or presumptions) and towards employing a less structured reasonableness analysis when deciding cases. Under the former approach, economics was used to develop decision rules (like the structural presumption).[108] Under the latter approach, by contrast, economics was used more to determine whether conduct (like a horizontal merger) was likely to increase the exercise of market power in an individual case.[109] The latter approach increased the demand for new tools for evaluating specific conduct,[110] such as empirical methods for identifying the extent of localized competition among sellers of differentiated products or ways to use those estimates to simulate the effects of mergers (including merger screening tools like the GUPPI).[111] In short, economists were influential in both eras, but in different ways shaped by changes in how the legal system approached antitrust cases.[112]

A more plausible version of this overarching theory about the influence of economics and economists on antitrust policy, consistent with the extensive role of economics in landmark antitrust decisions during antitrust's structural era,[113] would date that influence from the 1940s rather than the late 1970s. I have argued that during that decade, the US political system

[104] See n 50 and accompanying text.

[105] See n 51 and accompanying text.

[106] Antitrust policymakers did not develop an economic approach for the first time in the late 1970s; '[t]hey simply changed economic models'. Herbert J Hovenkamp, 'Antitrust Policy After Chicago' (1985) 84 Mich L Rev 213, 218. When courts relied on economic ideas prior to the 1980s, moreover, they often did so without citation. Lopatka and Page (n 3) 620.

[107] See n 102.

[108] Before the 1970s, the Supreme Court was skeptical of applying economic analysis to resolve individual cases on the ground that 'courts are of limited utility in examining difficult economic problems'. *United States v Topco Associates, Inc*, 405 US 596 609 (1972). See ibid 609 n 10 ('Without the per se rules, businessmen would be left with little to aid them in predicting in any particular case what courts will find to be legal and illegal under the Sherman Act. Should Congress ultimately determine that predictability is unimportant in this area of the law, it can, of course, make per se rules inapplicable in some or all cases, and leave courts free to ramble through the wilds of economic theory in order to maintain a flexible approach.') See also Derek C Bok, 'Section 7 of the Clayton Act and the Merging of Law and Economics' (1960) 74 Harv L Rev 226. cf Lopatka and Page (n 3) 639 (indicating that '[t]he most sweeping use of economic authority occurs in the adoption of per se rules'). Even a leading commentator associated with the rise of the Chicago school thought courts could not readily evaluate merger-related efficiencies or trade them off against competitive harms. Richard A Posner, *Antitrust Law* (2nd edn, University of Chicago Press 2001) 133–34.

[109] See Ciliberto and others (n 46) 2–4 (attributing the 'inflection points' where citations to economists in antitrust opinions increased (in 1974, 1994, and 2007) to greater reliance on case-by-case analysis in the courts arising from two Supreme Court decisions and revisions to enforcement agency merger guidelines). Economic analysis is also relevant when determining whether types of conduct should be governed by per se rules or presumptions, or by an unstructured reasonableness analysis. cf Lopatka and Page (n 3) 642 (explaining that courts first incorporate economic theory based upon explanatory value, ideology, and the legal process, then use that economic authority to govern factual inquiries including the use of expert testimony).

[110] The increased role of economists in case analysis also increased the demand for economists in litigation. James V DeLong, 'The Role, if Any, of Economic Analysis in Antitrust Litigation' (1981) 12 Sw U L Rev 298, 317, 320.

[111] See n 22 and accompanying text.

[112] Within the FTC, economists began to play a role in evaluating the competitive effects of mergers during the 1950s. Initially, that role was limited, but it expanded beginning in the 1970s. Pautler (n 103) 38–43. cf Ciliberto and others (n 46) 11 (discussing the role of economists in the front office of the Justice Department's Antitrust Division during the 1960 and 1970s). But cf DeLong (n 110) 301–02 (describing the limited role of economists in case analysis in 1972, when per se rules were commonly employed).

[113] See n 103–105 and accompanying text.

adopted a settlement (an informal political bargain) to pursue inclusive economic growth.[114] The way the settlement was implemented changed during the late 1970s (consistent with the deregulation movement and the rise of the Chicago school), but the underlying economic goal continued and its pursuit always required economic analysis. Under this view, the significant if not paramount influence of economists on economic regulatory policy, including antitrust policy, since the Second World War would be expected to persist so long as the political system continues to view economic regulatory policy as aiming to pursue inclusive economic growth.

Under either version, this theory is more an explanation of the particular form taken by the antitrust rules that the courts developed than an explanation for the influence of economics and economists. It is the specific rules that were historically contingent, not the role that economists have played. Antitrust law requires economic analysis to at least some extent because it is concerned with understanding firm conduct and shaping economic interactions.[115] That is evident from the role of economic ideas in shaping antitrust law well before *Philadelphia National Bank* and before antitrust's structural era began in the 1940s.[116] It is also evident in the central role of economics in the most recent merger guidelines, even as those guidelines also incorporated neo-Brandeisian legal views and policy perspectives.[117]

Perhaps times are changing, and other goals will become more important in shaping economic regulatory policy generally and antitrust policy more specifically. Given current debates and issues, for example, it is possible to imagine antitrust policy governed more in the future by progressive concerns about preventing exploitation and interdicting oligarchy,[118] by the concerns of some on the right about the suppression of conservative voices by large technology platforms,[119] by concerns to promote environmental sustainability[120]

[114] Baker (n 61) 527–34. See also Jonathan B Baker, 'Finding Common Ground Among Antitrust Reformers' (2022) 84 Antitrust LJ 705, 714; Jonathan B Baker, 'Economics and Politics: Perspectives on the Goals and Future of Antitrust' (2013) 81 Fordham L Rev 2175, 2180; Jonathan B Baker, 'Preserving a Political Bargain: The Political Economy of the Non-Interventionist Challenge to Monopolization Enforcement' (2010) 76 Antitrust LJ 605; Jonathan B Baker, 'Competition Policy as a Political Bargain' (2006) 73 Antitrust LJ 483.

[115] Lopatka and Page explain that antitrust law necessarily integrates economics into its rules 'so that the rules can provide an efficient system of incentives for businesses. Unlike areas of law that look to expertise to resolve occasional issues of fact, antitrust must incorporate economics into every substantive and evidentiary rule and standard, while remaining open to incremental change'. Lopatka and Page (n 3) 695. Antitrust rules are also influenced by legal considerations, such as institutional competence and 'the institutional demands of precedent and the fact-finding process'. ibid 698.

[116] Hovenkamp (n 28) 268–95 (describing the influence of classical political economy perspectives on late 19th and early 20th century antitrust decisions); see ibid 216–20 (discussing the classical political economy perspective of the 19th century). The economic ideas that mattered in antitrust law before the 1940s were generally relied upon without explicit reference to economists. See ibid 269 (making this point with respect to nineteenth century judges). But see William E Kovacic and Carl Shapiro, 'Antitrust Policy: A Century of Economic and Legal Thinking' (2000) 14 J Econ Persp 43, 49 (indicating that it is 'difficult … to detect significant direct effects of economic thinking and research on judicial antitrust decisions' during the 1916–1936 period).

[117] Jonathan B Baker, 'The 2023 Merger Guidelines Strengthen Enforcement by Finding Common Ground' *ProMarket* (2024) <https://www.promarket.org/2024/01/09/the-2023-merger-guidelines-strengthen-enforcement-by-finding-common-ground/> accessed 15 October 2024; Steven C Salop, 'The 2023 Merger Guidelines: A Post-Chicago and Neo-Brandeisian Integration' (2024) 65 R Indus Org 79.

[118] See eg Marshall Steinbaum, 'The Utah Statement: Reviving Antimonopoly Traditions for the Era of Big Tech' (2019) Medium <https://medium.com/@msteinbaum/the-utah-statement-reviving-antimonopoly-traditions-for-the-era-of-big-tech-de3ae5a4e52c> accessed 15 October 2024.

[119] See eg Gilid Edelman, "A Conservative Senator's Crusade Against Big Tech" *The Washington Post* (Washington, 28 August 2019) Magazine <https://www.washingtonpost.com/news/magazine/wp/2019/08/28/feature/a-conservative-senators-crusade-against-big-tech/> accessed 15 October 2024; Thomas B Edsall, 'The Marriage between Republicans and Big Business is on the Rocks' *The New York Times* (New York, 14 April 2021) <https://www.nytimes.com/2021/04/14/opinion/woke-capitalism-democratic-party-us.html> accessed 15 October 2024; Jody Godoy, 'Trump VP Pick Supports Big Tech Antitrust Crackdown' *Reuters* (15 July 2024) <https://www.reuters.com/technology/trump-vp-pick-supports-big-tech-antitrust-crackdown-2024-07-15/> accessed 15 October 2024; Gopal Ratnam, 'Once a Tech Investor, Vance is Now Big Tech Critic' Roll Call (17 July 2024) <https://rollcall.com/2024/07/17/once-a-tech-investor-vance-is-now-big-tech-critic/> accessed 15 October 2024.

[120] See Columbia Center for Sustainable Investment, *Antitrust and Sustainability: A Landscape Analysis* (2023) <https://ccsi.columbia.edu/content/antitrust-and-sustainability-landscape-analysis> accessed 15 October 2024.

or protect privacy,[121] or by industrial policy considerations[122] or national security needs.[123]

Were this to happen, economics would still likely remain important for the development of antitrust policy, not entirely or largely elbowed aside by other goals.[124] One might imagine such concerns as pushing towards the increased adoption of various bright line rules or presumptions.[125] That possibility would be expected to increase the importance of economic analysis for the development of rules and presumptions and decrease its importance in case development, without necessarily reducing the overall influence of economics. Then the economic research channel for economic influence, the translation and synthesis channel, and the channel involving direct participation in policy development would remain important (or even become more important than they are today), while the channel involving direct participation in the adversarial process might grow less important.[126]

Limits to overarching theories about the role of economics

The public interest theory, big business capture theory, and the triumph of neoliberalism theory each offers some insight into the influence of economists and economics on antitrust policy. As they suggest, economic ideas are more influential when they help courts and enforcement agencies better discriminate between harmful and beneficial conduct, when they are pushed to prominence by advocates with substantial resources, and when economic values are important culturally. But, for reasons set forth above, none of the theories is fully convincing; the world is more complex than these theories suggest. The next section illustrates the channels by which economists influence antitrust policy and the reasons the overarching theories are limited by profiling four industrial organization economists who played important roles during their careers in the development of antitrust economics and policy.

4. PROFILES OF FOUR ECONOMISTS

This section takes a more personal approach to describe the contributions of the four profiled industrial organization economists. It is based on brief presentations that I made about them and their work and adds some personal recollections. I have had the great fortune to work with each and count all four as friends as well as colleagues. Each has also influenced my own research.

Tim Bresnahan was one of my graduate school advisors and has been a co-author. I was the Special Assistant to Bobby Willig when he was the Deputy Assistant Attorney General for Economics and to Janusz Ordover when he succeeded Bobby. Steve Salop has been my

[121] See eg Erika M Douglas, 'What is Privacy—To Antitrust Law?' (2024) 14 UC Irvine L Rev 817.

[122] See eg Réka Juhász and others, 'The New Economics of Industrial Policy' (2023), NBER Working Paper No 31538 <https://www.nber.org/papers/w31538> accessed 15 October 2024. To the extent industrial policy is understood as the provision of public goods including government support for research and development, it has long been compatible with antitrust policy. See Baker, Finding Common Ground (n 114) 718–19 (describing economic regulatory policy since the 1930s and 1940s as harmonizing commitments to private property and contract rights, competition, and a social safety net with a broad industrial policy of providing public goods along with extensive government support for research and development).

[123] Some fear that broadening antitrust's goals may increase the potential for direct political influence. On the concern to prevent the misuse of antitrust enforcement, and discourage special interest protectionism and crony capitalism, by insulating antitrust from direct political influence, see Baker, The Antitrust Paradigm (n 41) 53–70.

[124] To similar effect, economics remains central to case analysis at the antitrust enforcement agencies even as those agencies invest in areas of expertise other than economics and law by hiring data scientists and technologists.

[125] Bright line rules and presumption may also be employed more than today for reasons related to reinvigorating antitrust's current pursuit of inclusive economic growth. See generally Baker, The Antitrust Paradigm (n 41) (advocating that antitrust law adopt various presumptions).

[126] Moreover, changing intellectual currents would be expected to affect, in some cases, the choice of topics for economic research, or translation and synthesis; the way some articles are framed; and audience interest in various topics. cf n 34, above (describing the political valence of some articles).

closest professional colleague for decades: we routinely read and comment on each other's papers and are occasional co-authors. Steve has retired from teaching but remains active in research and consulting; Tim also has retired but continues to be active in research. Sadly, Bobby and Janusz have both passed away: Bobby in 2022 and Janusz in 2021.

Tim Bresnahan

To prepare for this presentation I made two lists.[127] One listed the major changes in antitrust since Tim began his career. The other listed the references to Tim and his work in the antitrust casebook I co-author. The lists intersected in two broad areas: the unilateral effects of horizontal mergers and the use of empirical tools to identify and measure those effects, and antitrust's increasing concern with innovation. I will talk about Tim's work in both areas and relate it to key challenges in antitrust economics.[128]

Unilateral effects and empirical tools

The modern analysis of the unilateral effects of horizontal mergers and the modern approach to empirical analysis in antitrust economics began with the articles Tim and I wrote on estimating residual demand.[129] We showed how differentiated product sellers gain from internalizing localized competition, which had not previously been a focus of merger analysis, and how to estimate the effect empirically. With scanner data, cheaper computing, and the development by others of additional empirical tools for estimating market power and simulating mergers, merger analysis was transformed. In less than a decade, Bobby Willig and I incorporated unilateral effects into the 1992 Horizontal Merger Guidelines.[130] The enforcement agencies have been employing unilateral competitive effects theories in merger analysis routinely ever since.[131]

More generally, expert economic testimony in antitrust cases today often utilizes econometrics. The empirical methods and their embrace in antitrust practice both owe a great deal to Tim.

Identification

Antitrust also has learned from a central aspect of Tim's work on measuring market power: its focus on identification in the econometric sense.

I once asked Tim where the New Empirical Industrial Organization (NEIO) came from.[132] He replied that he and Rob Porter learned from Orley Ashenfelter that they needed to estimate two curves: one that slopes up and one that slopes down. In the context of the partial equilibrium framework in which industrial organization empirics proceeds, the downward sloping curve is a demand function. Tim and Rob's contribution was to employ game theory to work out what the upward sloping curve looks like and how to identify and estimate it.[133]

[127] These remarks are adapted from my presentation on Tim Bresnahan and antitrust at a 2017 symposium in Tim's honor. See generally Liran Einav and others, 'Throwing a "Bresfest" to fete a friend and colleague' Stanford Institute for Economic Policy Research (SIEPR) Research Highlight (2018) <https://siepr.stanford.edu/news/throwing-bresfest-fete-friend-and-colleague> accessed 15 October 2024.

[128] My remarks focus on Tim's contributions to antitrust economics. Tim also made important contributions in other fields, particularly to the economics of innovation. See n 11 and accompanying text.

[129] Jonathan B Baker and Timothy F Bresnahan, 'Estimating the Residual Demand Curve Facing a Single Firm' (1988) 6 Intl J Indus Org 283; Baker and Bresnahan (n 21). A contemporaneous theoretical economics literature that investigated the conditions under which oligopolists would find mergers profitable without coordination was also influential. Baker, Unilateral Effects (n 21) 33–34.

[130] The incorporation of unilateral effects analysis in the 1992 Merger Guidelines is discussed further in the profile of Bobby Willig and Jansuz Ordover under Section 4.

[131] See Baker (n 129).

[132] See generally Bresnahan (n 6).

[133] See n 13.

When measuring market power, Tim put identification front and centre. If market outcomes result from the intersection of two functions and the research or policy interest is in the parameters of one of the two curves, we are forced to think about identification. That means identification should be an issue when the evidence about market power is qualitative, not just in quantitative empirical work. That point is not always obvious to lawyers and courts, so Tim and I wrote two articles about it for antitrust audiences in which we explained how to use econometric ideas about identification to test even qualitative evidence about market power by controlling for shifts in the other curve.[134]

The challenge of substantial market power

When Tim wrote his influential handbook chapter on empirical industrial organization economics more than three decades ago,[135] he explained that the studies he reviewed found a great deal of market power in some concentrated industries, in the sense of high price-cost margins, and indicated that anticompetitive conduct was a significant cause of that market power. In recent years, accumulating evidence has made clear not just that Tim was right then, but that market power is even more of a problem today.[136]

Innovation and dominant firms

Some of today's concern about growing market power is related to the rise of dominant information technology platforms. Tim has extensively studied novel features of the modern economy related to that development, including improvements in information technology, the growing commercial importance of information technology platforms, and the spread of information technologies economy wide. The exercise of market power by dominant firms in high-tech markets such as information technology markets can reduce the prospects for innovation, not just raise prices.

In general, antitrust speaks about dominant firms and innovation with two voices: one concerned that market power harms innovation, and the other concerned that antitrust enforcement does the same thing. Dominant firms monopolize when they suppress new business models, technologies, or products, but courts are often reluctant to question new product design decisions by dominant firms for fear of chilling innovation.[137]

The antitrust voice that defers to dominant firms is worried about appropriability: if antitrust enforcement reduces the expected return to R&D, will that chill innovation? Tim gave the antitrust world two reasons to question that voice, in appropriate cases. One came from his evaluation of the FTC's 1979 *Xerox* decision.[138] That decision required Xerox to license its huge portfolio of copier patents to all comers for a small royalty. It spurred R&D

[134] Baker and Bresnahan (n 28); Jonathan B Baker and Timothy F Bresnahan, 'Empirical Methods of Identifying and Measuring Market Power' (1992) 61 Antitrust LJ 3.

[135] See n 132.

[136] Baker, The Antitrust Paradigm (n 41) 11–31. My conference presentation discussed this evidence; I omit that discussion here to focus on Tim's contributions to antitrust. Two more recent surveys of the economic literature support antitrust enforcement while questioning the extent to which market power has increased over time. Carl Shapiro and Ali Yurukoglu, 'Trends in Competition in the United States: What Does the Evidence Show?' (2024) NBER Working Paper No 2024 <https://www.nber.org/papers/w32762> accessed 15 October 2024; Nathan H Miller, 'Industrial Organization and the Rise of Market Power' (2024) NBER Working Paper No 32627 <https://www.nber.org/papers/w32627> accessed 15 October 2024. For a response, see Jonathan B Baker and Fiona S Morton, 'Market Power Has Grown and Antitrust Needs Strengthening, Despite What Shapiro & Yurukoglu and Miller Suggest' (2024) ProMarket <https://www.promarket.org/2024/10/01/market-power-has-grown-and-antitrust-needs-strengthening-despite-what-shapiro-yurukoglu-and-miller-suggest/> accessed 15 October 2024.

[137] To similar effect, at one time antitrust law was skeptical of patent licensing practices by dominant firms, but around the time Tim began his professional career, patent licensing started to be seen as potentially beneficial.

[138] Timothy F Bresnahan, 'Post-Entry Competition in the Plain Paper Copier Market' (1985) 75 (Papers & Proceedings) Am Econ Rev 15.

investment industry wide, allowed new rivals to enter, and woke up the lethargic monopolist, which invested more too.

Tim pointed out that Xerox's response to losing its patent portfolio illustrated the Arrow replacement effect, though it was hard to tell whether the rush of industry innovation owed more to greater competition or to new technological opportunities from the invention of the microprocessor. His study made clear that the replacement effect could be more important than reduced appropriability. That is one reason why antitrust enforcement against dominant firms can spur innovation.

Tim gave a second reason when working with the Justice Department on the *Microsoft* case. He called Microsoft's appropriability defence 'hilarious' and observed that the expected reward to R&D success does not have to be astronomical to be sufficient to spur innovation.[139] Tim's point was that dominant firms often have lots of sources of appropriability which antitrust enforcement against exclusionary conduct would not undermine. My list of reasons innovation could still be profitable includes network effects, high customer switching costs, and supply-side scale economies, as well as the sale of complementary products, and rapid market growth.[140]

Divided technical leadership and Microsoft

Tim's work on *Microsoft* also highlighted the antitrust significance of his academic research with Shane Greenstein on divided technical leadership.[141] Before Tim went to the Justice Department, he was sceptical about a monopolization case against Microsoft. He thought Microsoft had harmed competition but that the government would have trouble framing a remedy. The dog could bark at the fire truck and chase it but, Tim famously asked, 'what are you going to do with it when you catch it?'[142] Eventually, that became Tim's problem to solve.

The problem is that when network effects are important, the market tends towards having a dominant firm. Niche rivals can succeed if there is heterogeneity in demand, but we should still expect the market to be concentrated. We should not let dominant platforms squelch entry but stopping that does not mean entrants will frequently succeed.

So, what should the dog do when it catches the fire truck? Tim's answer grew out of his work with Shane on divided technical leadership in computing platforms. It comes from the idea that a monopolist, or any firm really, does not want its suppliers or distributors to exercise market power. That would take away the dominant firm's rents and potentially reduce the overall producer surplus shared by the vertically related firms. For that reason, firms have strong incentives to create competition in markets for complementary products, including through the way they innovate.

Tim's answer to the remedy question in *Microsoft* was to harness divided technical leadership to create more operating system competition by spinning off Microsoft Office and other applications into a separate firm. The remedy would count on the app company to find ways

[139] Richard M Brunell, 'Appropriability in Antitrust: How Much is Enough?' (2001) 69 Antitrust LJ 1, 32 (quoting Timothy F Bresnahan, 'New Modes of Competition: Implications for the Future Structure of the Computer Industry' in Jeffrey A Eisenach and Thomas M Lenard (eds), *Competition, Innovation and the Microsoft Monopoly: Antitrust in the Digital Marketplace* (Springer 1999) 192).

[140] Jonathan B Baker, 'Evaluating Appropriability Defenses for the Exclusionary Conduct of Dominant Firms in Innovative Industries' (2016) 80 Antitrust LJ 431.

[141] Timothy F Bresnahan and Shane Greenstein, 'Technological Competition and the Structure of the Computer Industry' (1999) 47 J Indus Econ 1.

[142] Federal Trade Commission, Hearings on Global and Innovation-Based Competition (30 November 1985, day 19) 3609 <https://www.ftc.gov/news-events/events/1995/10/global-innovation-based-competition-hearings> accessed 15 October 2024.

to boost rival operating systems. That's what the DOJ proposed when Tim was there, though the next administration settled the case with a behavioural remedy rather than a structural one.[143]

Tim at DOJ

Let me conclude by talking about Tim's year as the Deputy Assistant Attorney General for Economics in the Justice Department's Antitrust Division in 1999–2000. While I did not work with him at DOJ, I am familiar with the institution and Tim's work there.

One challenge is to keep both the front office and the staff happy. Most chief economists at the Antitrust Division or the FTC focus more on one or the other of these two constituencies. Tim was unusually successful for reasons that go beyond his substantive contributions in *Microsoft* and other cases because everyone in each constituency loved him.

The front office and the economic staff described the same Tim I know and everyone who has worked with him knows. He makes everyone smarter about economics. He treats everyone as a professional colleague and values their independent thinking. He is generous with his time. He approaches research and policy questions even-handedly and follows the evidence with complete intellectual integrity. And he is a good guy.

I am fortunate and grateful that Tim showed up at Stanford in the late 1970s when I was a graduate student in economics. And the antitrust world has been fortunate as well for Tim's engagement with it.

Steve Salop

I want to begin by highlighting Steve's academic contributions.[144] He is both an influential microeconomic theorist and an antitrust guru. Steve was one of the talented applied information and game theorists who collectively transformed industrial organization economics during the 1970s and 1980s by putting the analysis of imperfect competition on a firm foundation. Among these, Steve was the economist most productively engaged with antitrust issues.[145]

Steve may be most well-known among non-antitrust economists for his model of localized monopolistic competition,[146] which improved upon the Hotelling model by moving the firms from a line to a circle. To a non-economist, this may not sound like much, but it was a great advance in the economic modelling of product differentiation and the understanding of oligopoly behaviour.[147] In the 1970s, Steve left flatland[148] for Washington, and antitrust has not been the same since.

My legal historian colleagues tell me that it is increasingly fashionable to write about the 1970s. That decade was an interesting time for antitrust: during the late 1970s, the Supreme Court launched its Chicago school revolution.

It is not hard for historians today to identify the policy-oriented economists and economically oriented lawyers who provided the intellectual grounding for Chicago school antitrust. When more time has passed, historians will look back to write about the next generation of

[143] That example may not be the only antitrust application of divided technical leadership. The idea could also supply a theory of innovation harms from vertical merger, though I do not know of any cases in which the enforcement agencies have investigated a vertical merger with that possibility in mind.

[144] These comments are based on my remarks at the presentation of an American Antitrust Institute (AAI) Antitrust Achievement Award to Steve Salop on 24 June 2010. I have slightly updated them here.

[145] Steve worked as an economist at the Federal Reserve, Civil Aeronautics Board, and Federal Trade Commission before joining Georgetown's law school faculty.

[146] Steven C Salop, 'Monopolistic Competition with Outside Goods' (1979) 10 Bell J Econ 141.

[147] See n 8.

[148] Edwin A Abbott, *Flatland: A Romance of Many Dimensions* (Seely & Co 1884).

antitrust thinking: post-Chicago antitrust.[149] They will undoubtedly put Steve Salop at the top of any list of post-Chicago intellectual leaders.

Steve helped work out the antitrust implications of modern microeconomic theory—game theory and imperfect information—and he is the pre-eminent figure in rehabilitating antitrust's historical concern with exclusionary conduct. Let me survey three of Steve's accomplishments in antitrust economics.[150]

First, Steve and others showed that imperfect consumer information can allow firms to exploit buyers.[151] The economic implications of imperfect information are central to the Supreme Court's well-known *Kodak* decision.[152] When the majority opinion made its key economic points about information theory, most of the citations were to Steve's articles.

Secondly, Steve and others taught us about strategic entry deterrence—how an incumbent firm can scare off entrants by committing to aggressive post-entry competition.[153] Steve brought this idea to antitrust. He also saw before anyone else how it relates to the minimum viable scale and can be used to analyse the likelihood that entry will deter an anticompetitive merger[154]; these concepts were relied on in the 1992 Merger Guidelines.

Thirdly, during the 1980s, when the Chicago antitrusters were pushing the view that vertical agreements should be deemed legal per se, Steve showed how most favoured nations and meeting competition clauses in vertical agreements could be used to facilitate oligopoly coordination.[155]

Steve's most enduring influence in antitrust will likely be for still other work, with a series of co-authors, on exclusionary strategies—or, to use the term Steve made famous, on 'raising rivals' costs'.[156] Let me put that contribution in context.

Even a casual reader of Judge Bork's antitrust book could not miss the Chicago school's assault on the structural era case law governing vertical agreements, vertical mergers, and monopolization—all legal categories where exclusionary conduct and foreclosure play a central role.[157] The Chicago school's sceptical perspective on exclusion altered the terms of antitrust debate during the 1980s.

That same decade, Steve began writing articles that showed how and why exclusionary strategies can profit firms and harm competition. Without Steve's work, it is hard to imagine the Justice Department bringing the 1990s cases against Microsoft, Master Card and Visa, or

[149] Steve recently listed selected post-Chicago contributions in an appendix to a blog post. Steven Salop, 'The Reasonable Competitive Conduct Standard for Antitrust' (2023) ProMarket <www.promarket.org/2023/04/06/the-reasonable-competitive-conduct-standard-for-antitrust> accessed 15 October 2024.

[150] Steve has also played a major role in developing the modern economic approach to thinking about disclosure in consumer protection. Eg Howard Beales and others, 'The Efficient Regulation of Consumer Information' (1981) 24 JL & Econ 491.

[151] Some of Steve's articles explain why high-priced firms can coexist with discounters when some buyers search more than others. Eg Steven Salop, 'The Noisy Monopolist: Information, Price Dispersion and Price Discrimination' (1977) 44 Rev Econ Stud 393; Steven Salop and Joseph Stiglitz, 'Bargains and Ripoffs: A Model of Monopolistically Competitive Price Dispersion' (1977) 44 Rev Econ Stud 493. For a survey of work in this area predating Steve's contributions see Michael Rothschild, 'Models of Market Organization with Imperfect Information: A Survey' (1973) 81 J Pol Econ 1283.

[152] *Eastman Kodak v Image Technical Servs*, 504 US 451 (1992). *Kodak* points out that consumers may not be fully informed about the lifetime cost of their purchases and sellers may not have the incentive to give them that information. Hence, firms that compete in original equipment may exercise market power in aftermarkets. The decision also reflects Steve's work on anticompetitive exclusionary conduct.

[153] Salop (n 38). Then Steve flipped the story, by working out how an entrant can beat strategic entry deterrence. His co-authored article on judo economics shows how a new rival can commit to limited entry in order not to provoke a competitive response from a dominant incumbent. Judith R Gelman and Steven C Salop, 'Judo Economics: Capacity Limitations and Coupon Competition' (1983)14 Bell J Econ 315.

[154] Steven C Salop, 'Measuring Ease of Entry' (1986) 31 Antitrust Bull 551.

[155] Salop (n 38). As with the strategic entry deterrence idea, the argument involved commitment and game theory: Steve pointed out that an oligopolist can use these provisions to assure their rivals that they will not cut prices, giving the rivals an incentive to keep prices high.

[156] See n 95.

[157] See n 19 and accompanying text.

Dentsply.[158] The restoration of antitrust concern with exclusionary conduct—Steve's most important work—has been the greatest success of post-Chicago antitrust.

Steve has continued to work on exclusion. He and his co-authors have written leading articles on how to analyse vertical mergers.[159] He has also explained why judges are competent to address a monopolist's anticompetitive refusal to deal with its rivals: all the court has to do is determine the monopolist's price and cost–just as it does when analysing predatory pricing.[160]

Steve once observed to me that John Nash had developed both a non-cooperative game model—the Nash equilibrium—and a cooperative game model—the Nash bargaining solution, and that Ronald Coase arguably also had done the same thing—thinking of the Coase theorem as a cooperative model and the Coase conjecture as a non-cooperative one. Sometimes Steve exhibits what we might call his non-cooperative model: his well-reasoned defence of positions that differ from the Chicago orthodoxy and his quick and pointed humour when debating antitrust policy issues. At one conference attended by Assistant Attorney General Charles James, Steve quipped that the Justice Department's settlement in the Microsoft case was 'catch and release' antitrust. At an Antitrust Modernization Commission meeting, he said that former Assistant Attorney General Charles (Rick) Rule's proposals for modifying monopolization doctrine would 'fix' section 2 'in more or less the same way we fixed our cat'. He has characterized one conservative commentator as always preferring that courts adopt a legal standard that would require just a little more evidence than whatever evidence the plaintiff presents.

Like Nash and Coase, Steve also has a cooperative model. When working with his antitrust colleagues, no one is more generous. I first met Steve four decades ago, when I had just begun working at a law firm, before I finished my PhD. Steve immediately welcomed me into his antitrust circle. He invited me to sit in on his advanced antitrust class. He introduced me to his senior colleagues, Bob Pitofsky and Tom Krattenmaker, and to one of his star students who was also starting out as an antitrust lawyer, Joe Simons—all of which turned into important and long-lasting professional relationships. Steve also recommended me to Joe Stiglitz, one of his co-authors, for a senior economist position at the Council of Economic Advisors (as did Tim Bresnahan). When I began to teach antitrust, he shared his course materials and old exams with me. He reads and comments on all my papers and he gave my casebook co-authors and me extensive help behind the scenes with our book. Throughout his career, moreover, Steve has worked informally with the antitrust enforcement agencies to help them improve their work.

As an economic theorist, Steve has even demonstrated the value of cooperation for society. One of his co-authored papers shows that if a small group of people begins to cooperate with others, they can induce a cooperative bandwagon that creates an entire moral society.[161] As an antitrust economist, Steve sees the field as about the welfare of people, not producers. He has defended the consumer welfare standard[162] against the claim that antitrust

[158] It is also hard to imagine the attention that the enforcement agencies here and abroad–particularly DG-Comp–pay to exclusionary conduct today. See generally Baker (n 96).

[159] Eg Jonathan B. Baker and others, 'Five Principles for Vertical Merger Enforcement Policy' (2019) 33 [Summer] Antitrust 12; Steven C Salop, 'Invigorating Vertical Merger Enforcement' (2018) 127 Yale LJ 1962; Michael H Riordan and Steven C Salop, 'Evaluating Vertical Mergers: A Post-Chicago Approach' (1995) 63 Antitrust LJ 513. Dissatisfied with the 2020 Vertical Merger Guidelines, Steve wrote his own suggested guidelines. Steven C Salop, 'A Suggested Revision of the 2020 Vertical Merger Guidelines' (2022) 67 Antitrust Bull 371.

[160] Steven C Salop, 'Refusals to Deal and Price Squeezes by an Unregulated Vertically Integrated Monopolist' (2010) 76 Antitrust LJ 709.

[161] Serge Moresi and Steven C. Salop, 'A Few Righteous Men: Imperfect Information, Quit-for-Tat, and Critical Mass in the Dynamics of Cooperation' (2002) <ssrn.com/abstract=320802> accessed 15 October 2024.

[162] When writing this in 2010, I used the term 'consumer welfare standard' in the way it was commonly employed then in the antitrust world: to refer to a focus on consumer surplus as distinct from aggregate surplus in a partial equilibrium context.

should only be concerned with efficiency or aggregate welfare.[163] He and I co-authored an article on using antitrust to combat inequality.[164] He has analysed when employees and other victims of market power should be allowed to engage in countervailing cooperation.[165]

Steve has remained active in research after retiring from teaching. His recent articles include analyses of the way asymmetric stakes lead to skewed litigation outcomes that favour monopolists[166]; how antitrust should treat exclusionary conduct directed at workers but that might benefit consumers[167]; and whether and how voluntary remedies for antitrust concerns proffered by merging firms should be considered in litigation ('litigating the fix').[168]

More than anyone else, Steve has demonstrated that the traditional concerns of antitrust questioned by the Chicago school have a sound economic grounding, recognizing both the anti-competitive and pro-competitive potential of firm conduct. His work shows how sensible, economically focused antitrust enforcement and policy points the way to a better society.

Bobby Willig and Janusz Ordover

This essay discusses Bobby and Janusz together because I worked with both of them at the Justice Department and because of the importance to antitrust economics of their longstanding collaboration.[169]

I worked as Bobby's Special Assistant when he was Deputy Assistant Attorney General for Economics at the Justice Department's Antitrust Division.[170] In that role, I reviewed all major ongoing matters, wrote Bobby a memo about what I learned, and talked through with him the economic issues they raised. The job was like a seminar on antitrust economics, where I was the only student.[171] It was the best training possible for a position I held a few years later: Director of the FTC's Bureau of Economics.

Some of Bobby's most important contributions to antitrust policy came in drafting the 1992 Horizontal Merger Guidelines.[172] One involved competitive effects in horizontal merger analysis, particularly unilateral effects. The 1992 Guidelines were the first to specify economically rigorous routes by which a horizontal merger could harm competition—both coordinated effects and unilateral effects.[173] Their coordinated effects analysis centred on the ability and incentive of post-merger firms to reach terms of coordination and detect and

Today's welfare standard debate uses the term differently, usually to refer to a focus on economic goals to the exclusion of non-economic goals, though sometimes (incorrectly) to refer to a focus on limited competitive dimensions (price but not quality and innovation) or limited economic harms (to buyers but not to suppliers such as workers).

[163] Steven C Salop, 'Question: What is the Real and Proper Antitrust Welfare Standard? Answer: The True Consumer Welfare Standard' (2010) 22 Loyola Consumer L Rev 336.

[164] Jonathan B Baker and Steven C Salop, 'Antitrust, Competition Policy and Inequality' (2015) 104 Geo LJ Online 1 <https://scholarship.law.georgetown.edu/facpub/1462/> accessed 15 October 2024.

[165] A Douglas Melamed and Steven C. Salop, 'An Antitrust Exemption for Workers: And Why Worker Bargaining Power Benefits Consumers, Too' (2024) 85 Antitrust LJ 739.

[166] Erik Hovenkamp and Steven C Salop, 'Litigation with Inalienable Judgments' (2023), 52 J L Stud 1.

[167] Laura Alexander and Steven C Salop, 'Antitrust Worker Protections: Rejecting Multi-Market Balancing as a Justification for Anticompetitive Harms to Workers' (2023) 90 U Chi L Rev 273.

[168] Seven C Salop and Jennifer E Sturiale, 'Fixing "Litigating the Fix"' (2024)85 Antitrust LJ 619.

[169] These remarks are adapted from the informal oral reminiscences of Bobby and Janusz that I provided to Compass Lexecon, the economic consulting firm, in September 2023.

[170] I began working in the Economics Analysis Group in September 1990 and became Bobby's Special Assistant the next year. When Bobby left, I continued as Special Assistant to Janusz, his successor.

[171] For most of his career, Bobby taught in Princeton's economics department and its public policy school.

[172] Assistant Attorney General James Rill asked Bobby and Paul Denis, Counselor to the Assistant Attorney General, to lead the drafting effort that led to the 1992 Horizontal Merger Guidelines. Bobby and Paul asked me to work with them on the project. The guidelines issued jointly by DOJ and the FTC were substantially similar to the draft the three of us produced.

[173] The guidelines previously in force, from 1982 (with small modifications in 1984), were implicitly concerned with coordinated effects, except for a proviso recognizing the potential for harm from the creation of a dominant firm.

police deviation (cheating), consistent with how coordination was increasingly understood in the economics literature.[174]

Beginning in the 1990s, the antitrust enforcement agencies increasingly focused their horizontal merger analysis on unilateral competitive effects.[175] The 1992 Guidelines were the first to explicate that approach rigorously, particularly by explaining how competition could be harmed by a merger that led to the loss of important localized competition between sellers of differentiated products.

The economics literature developing and applying this theory emphasized that localized competition between products need not have anything to do with their market shares. This insight had the potential to create a problem for horizontal merger enforcement because it appeared to undermine the structural presumption of competitive harm based on high and increasing market concentration, around which the case law was framed.[176]

Bobby explained why market shares still mattered. His point was that a product that is the first choice for a lot of buyers (at current prices), and thus has a high share, will often also be the second choice for a lot of buyers who pick other products first. When that happens, the potential reduction in localized competition from a horizontal merger is related to the merging firms' market shares.[177] Bobby explained this in a technical way in terms of a random utility model that generates a logit demand system, in an article written while the guidelines were being drafted.[178] Common econometric practice today melds Bobby's approach with the idea of localized competition by estimating nested logit models.[179]

When drafting the 1992 Guidelines, Bobby made another important contribution to entry analysis by distinguishing between what the guidelines called committed and uncommitted entries.[180] The idea of uncommitted entry,[181] which can be thought of as a rapid 'hit and run' entry, grew out of Bobby's influential academic work on contestable markets.[182] Committed entry, by contrast, involves significant sunk expenditure, which 'commit' the entrant to the market.

I remember a dinner at which Bobby and I realized that a committed entrant that would counteract or deter the exercise of market power had to expect entry to be profitable in the

[174] During the 1980s, industrial organization economics, like microeconomics generally, had been reworked along game-theoretic lines. The 1992 Guidelines also recognized, for the first time, that a merger involving a 'maverick' could make a coordinated outcome more likely or more effective. On the role of mavericks in evaluating the coordinated effects of horizontal mergers, see Baker, Mavericks (n 40). For a formal treatment, see Farrell and Baker (n 40). Bobby wrote about another aspect of coordination in Charles J Thomas and Robert D Willig, 'The Risk of Contagion from Multimarket Contact' (2006) 24 Intl J Indus Org 1157 (explaining that multimarket contact, which is conventionally thought to strengthen incentives to coordinate, can instead make coordination less effective because of the way firms may respond when they incorrectly think a rival has cheated).

[175] The development of modern unilateral effects analysis is discussed further in the profile of Tim Bresnahan under Section 4.

[176] The overall structure of the 1992 Guidelines emphasized competitive effects analysis and downplayed the role of market concentration (relative to prior Guidelines). The 1992 Guidelines nevertheless employed measures of market concentration to create safe harbors when concentration was low or the merger did not increase concentration substantially, and they adopted a rebuttable presumption of harm from a horizontal merger that increased concentration substantially in a highly concentrated market.

[177] Under such circumstances, cross elasticities of demand are related to market shares.

[178] Willig (n 22) 299–305. Bobby's theoretical analysis was also an important precursor to the development of the diversion ratio and upward pricing pressure concepts employed for unilateral effects analysis in the 2010 merger guidelines. See n 22.

[179] In his 1991 article, Willig (n 22), Bobby also discussed the extent to which demand cross-elasticities are related to market shares in nested logit models.

[180] Bobby routinely came up with interesting terminology, like committed and uncommitted entry. Once, when asked where a word Bobby used came from, Bobby's front office colleague, Deputy Assistant Attorney General Judy Whalley, answered that Bobby found it in Janusz' Polish-English dictionary.

[181] The 2010 Horizontal Merger Guidelines use the term 'rapid entrants' instead of 'uncommitted entrants'.

[182] Eg Baumol and others (n 14).

post-merger world at pre-merger prices.[183] That was not the way entry was discussed in prior merger guidelines.[184] This idea became the basis for the entry 'likelihood' analysis in the 1992 Guidelines.

Bobby was both brilliant and quick.[185] He was responsible for one of the best academic seminar discussant performances I have ever seen, where he took on four or five papers, pointed out what each author had missed, and showed how to fix the problem. Bobby's major academic contributions included the previously referenced work on the effects of entry on market structure and performance, influential articles on measuring the consequences of changes in market structure and regulatory policy for economic welfare,[186] and work that deepened our understanding of the economies available to multi-product firms and their significance for pricing in regulated industries, especially during a transition towards deregulation.[187]

When I worked with Bobby at the DOJ, I arranged a dinner with him and Larry Summers, who was then working at the World Bank and who Bobby had never met. The dinner became a competition between them: Bobby would sketch a problem he had been thinking about in connection with his work, and Larry would see how far he could get with it. Then Larry would do the same for Bobby, with the goal of seeing whether either could get further with the other guy's problem than the one posing it had gotten. Larry had brought along Jeremy Bulow, an outstanding and accomplished economic theorist (and my future successor as Director of the FTC's Bureau of Economics). The back and forth between Bobby and Larry was so quick that neither Jeremy nor I could touch the conversation.

Bobby had insight into people as well as insight into economics. He gave me invaluable guidance when I was asked by the Clinton administration's incoming Assistant Attorney General for Antitrust, Anne Bingaman, to identify candidates she should interview for the Deputy Assistant Attorney General for Economics position that Bobby had held in the prior administration. Later, when I was at the Federal Trade Commission and looking for an expert econometrician to work on the first Staples/Office Depot merger litigation, Bobby suggested talking with Orley Ashenfelter, whose eventual work on the case was essential to the FTC's success.

When Janusz Ordover replaced Bobby as Deputy Assistant Attorney General for Economics, I became Janusz's Special Assistant.[188] Janusz was a sweet man who marched to the beat of a different drummer. We had met years before, in the mid-1980s, when I was the junior law firm associate in charge of the economic experts—Mike Scherer and Janusz—retained by the merging firms in opposition to a preliminary injunction.

[183] A lot of our work took place late at night, which was when Bobby liked to work. My wife said she knew our honeymoon was over the day after we returned: I went to the office Monday morning and did not come home that evening because Bobby had kept me there all night working on the Merger Guidelines. When Bobby visited Australia, he once reported, he did not change to working in the daytime but shifted his circadian rhythm so he would again work at night.

[184] The prior guidelines had evaluated entry profitability assuming a small increase in price (SSNIP) lasting for a substantial period of time.

[185] A framed newspaper story in Bobby's home office recounted his record-beating run on a pinball machine as a college senior. R Andrew Beyer, 'Pinball Fans Aghast as Willig Gets 2785' The Harvard Crimson (Cambridge, MA, 3 November 1965) <https://www.thecrimson.com/article/1965/11/3/pinball-fans-aghast-as-willig-gets/> accessed 15 October 2024. The author of the over-the-top report was presumably the sportswriter who became a famous horse racing columnist for *The Washington Post*.

[186] Eg Dansby and Willig (n 4); Willig (n 4); Willig (n 4).

[187] Eg Robert D Willig, 'The Theory of Network Access Pricing' in HM Trebing (ed), *Issues in Public Utility Regulation* (Proceedings of the Inst. of Public Utilities 10th annual conference, 1979) 109 (originating the efficient component-pricing rule). Bobby discussed implications of the efficient component-pricing rule (ECPR) for regulatory policy in an article co-authored with Janusz (and William Baumol). William J Baumol and others, 'Parity Pricing and its Critics: Necessary Condition for Efficiency in Provision of Bottleneck Services to Competitors' (1997) 14 Yale J Regul 146.

[188] While at DOJ, Janusz and I co-authored an article summarizing the treatment of entry in the 1992 Guidelines, which were released on Jansuz's watch. Baker and Ordover (n 43).

In the procedural posture of the case, I was responsible for getting Mike and Janusz to draft brief reply reports, and have the reports written, typed, proofread, signed, and submitted at a nearby federal courthouse within three hours. Mike understood the urgency and was all business. We briefly discussed what he would say, and he got to work drafting. Then I turned to Janusz. Janusz leaned back in his conference room chair and observed that the report to which he was replying raised 'interesting theoretical issues'—which was true but not what I wanted to chat leisurely about under time pressure.

Janusz also had an eye for interesting and important theoretical issues in his academic work. That included influential work with William Baumol and Bobby Willig on how a regulator or court should set the price of a bottleneck (monopoly) input that is used downstream by both the regulated firm (which is vertically integrated) and by its downstream rivals,[189] an influential article with Bobby Willig on how to think about predatory pricing,[190] and an important article with Garth Saloner and Steve Salop showing how anticompetitive vertical foreclosure could emerge in equilibrium.[191]

While working at the Justice Department, Janusz developed the innovative remedy in the consent settlement of the Borland/Ashton-Tate merger.[192] The transaction involved the largest two firms selling a type of software. The merger was allowed to proceed conditional on the merged firm not enforcing copyright protections against entrants and rivals. The point was to prevent installed-base opportunism and to allow new entrants to build on old technologies. The remedy turned out to be wildly procompetitive because it made it possible for a major entrant with a new technology to make its product compatible with existing products.

Janusz and Bobby often worked together in economic consulting. In that work, they modelled how to bring in economic rigor using the tools and insights of modern industrial organization economics. Bobby once told me he thought their work together was as good as any consulting work that he had seen in identifying and thinking through the key economic issues raised by an antitrust case. That is what Janusz was doing in the merger case we worked on in the mid-1980s and in working on the software merger at DOJ. Bobby and Janusz had stellar consulting careers, as well as academic careers, and they were as successful as anyone in integrating academic insights when providing economic policy advice. Antitrust economics and I will greatly miss them both.

5. CONCLUSION

Competition policy during the Biden administration was led by Jonathan Kanter, Lina Khan, and Tim Wu,[193] all of whom are associated with the antimonopoly (neo-Brandeisian) movement. Neo-Brandeisian writing often dismisses the value of economic analysis of the competitive effects of firm conduct for antitrust enforcement on the ground that economic analysis diverts attention from the political threat that increased concentration poses for democracy, and because neo-Brandeisians often accept the big business capture theory.[194] But economics and economists

[189] Baumol and others (n 187).

[190] Ordover and Willig (n 35).

[191] Ordover and others (n 9).

[192] See Fazio and Stern (n 44).

[193] Kanter was Assistant Attorney General for Antitrust; Khan was the Chair of the Federal Trade Commission, and Wu served on the staff of the National Economic Council as Special Assistant to the President for Technology and Competition Policy.

[194] See Baker, Finding Common Ground (n 114) 744 (explaining why the role of economic analysis and evidence forms a fault line between antimonopoly activists and centre-left (post-Chicago) antitrust reformers). See also Matt Stoller, 'How Economists Corrupted the Internet' BIG (22 March 2021) <mattstoller.substack.com/p/how-biden-can-clean-up-obamas-big> accessed 15 October 2024 (explaining that 'money from dominant firms offered to the antitrust economics world is endemic' and 'that antitrust economics is designed purely as a language for excluding ordinary people from debates over political economy').

are unlikely to become substantially less important, for reasons discussed above, even if non-economic considerations become more salient alongside economic ones or if antitrust law shifts towards adopting bright line rules or presumptions and away from case-by-case analysis.[195] Wu takes a similar view in his widely-read book on antitrust history.[196] Accordingly, I would expect economists to continue to influence antitrust in the way Tim Bresnahan, Jansuz Ordover, Steve Salop, and Bobby Willig did so successfully: through academic research, translation and synthesis, direct participation in policy development, and participation in the advocacy process.

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[195] See text accompanying n 113–126.

[196] Tim Wu, *The Curse of Bigness: Antitrust in the New Gilded Age* (Columbia Global Reports 2018) 55 (stating that '[n]o one denies that economic considerations are what should govern any individual case'); ibid 128 (stating that '[t]o abandon economic analysis entirely would be implausible').

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