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DYNAMIC ANALYSIS AND THE LIMITS OF ANTITRUST INSTITUTIONS

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The static model of competition dominates modern antitrust analysis. The model has served antitrust law well, but it has some familiar drawbacks. In particular, it ignores the impact that competitive activities undertaken today will have upon future market conditions.¹ Many commentators therefore have urged the adoption of a dynamic model of competition in antitrust analysis.² These commentators have used the term “dynamic analysis” in at least two different ways. The first refers to incorporating the creation of new products and business models into the static model of competition.³ The second refers more broadly to the relationship between present competitive activities and

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¹ See, e.g., J. Gregory Sidak & David F. Teece, *Dynamic Competition in Antitrust Law*, 5 J. COMPETITION L. & ECON. 581, 602 (2009) (arguing that within the static framework “fierce competition associated with the introduction of new products, or new features, or new pricing approaches does not exist”).

² See, e.g., David S. Evans & Keith N. Hylton, *The Lawful Acquisition and Exercise of Monopoly Power and Its Implications for the Objectives of Antitrust*, COMPETITION POL’Y INT’L, Autumn 2008, at 203, 240 (“[B]ecause of the tendency to focus on static welfare models at the expense of dynamic competition, the enhanced stature of economists in the federal enforcement agencies may . . . not be sufficient to lead to a substantial improvement in the quality of enforcement decisions.”); Sidak & Teece, *supra* note 1, at 585 (arguing that “using static analysis to address antitrust issues in a dynamic economy is unlikely to improve consumer welfare and . . . a more dynamic analytical framework increases the likelihood of helping rather than hurting consumers”).

³ Sidak & Teece, *supra* note 1, at 602 (arguing that within the static framework “fierce competition associated with the introduction of new products, or new features, or new pricing approaches does not exist”).

future market conditions.⁴ We use the term in this second, broader sense throughout this article.

The debate over dynamic analysis appears to be moving beyond the question whether it should be used in antitrust law and toward identifying the appropriate ways and circumstances in which to do so.⁵ An increased focus upon dynamic competition has the potential to improve antitrust analysis and, thus, to benefit consumers. Realizing that potential, however, is challenging. Just as an antitrust analysis focused solely upon static competition is unlikely to maximize consumer welfare or economic growth, one so paralyzed by the fear of deterring innovation that it fails to intervene where consumers are threatened with imminent harm would not serve either.

As a threshold matter, we note antitrust analysis already incorporates dynamic features, albeit in a relatively primitive form that generally involves a fact-intensive inquiry. This limitation reflects the current state of economic theory, of empirical evidence, and of judicial learning with respect to predicting the effect new business arrangements will have upon future market conditions.

The practical value of proposals to increase the use of dynamic analysis must be evaluated with an eye to the institutional limitations that antitrust agencies and courts face when engaged in predictive fact-finding. Were it not for those limitations, further incorporating dynamic analysis into the antitrust calculus would surely be desirable. Unfortunately, antitrust economists and legal scholars have treated institutional considerations as secondary questions to be addressed, if at all, only after there is agreement upon whether and when antitrust analysis should incorporate dynamics. In our view, the limitations of antitrust institutions should inform both these questions. Accordingly, this article focuses upon identifying where incorporating dynamic analysis is likely to have benefits that outweigh the sum of the administrative and error costs of doing so. We aim to explain and evaluate both the current state of dynamic antitrust analysis and some recent proposals that agencies and courts incorporate dynamic considerations more deeply into their analyses.

⁴ For example, the recoupment test in *Brooke Group* focuses upon dynamic considerations, that is, whether the firm will be able to earn monopoly profits in the future. *Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 224 (1993).

⁵ Scholars have offered different explanations for what they describe as the historical omission of dynamic considerations in antitrust analysis. For example, Sidak and Teece argue that economists “often unwittingly favor static competition” because “[t]hey are often unaware that there are many ways to conceptualize competition.” Sidak & Teece, *supra* note 1, at 600. *But see* Evans & Hylton, *supra* note 2, at 233–38 (offering the alternative explanation of a “tractability bias” in the economics profession toward models focusing upon static welfare effects and away from dynamic models, which are mathematically more complex).

I. THE ECONOMIC STATE OF PLAY

A. DYNAMIC COMPETITION MODELS

Dynamic competition models entail the prediction of future competitive outcomes. Those competitive outcomes include considerations of entry, investment, innovation, price, output, and quality. Some economists focus more intensely upon a subset of these activities, usually innovation, and more specifically the creation of new products.⁶ Our concern is with the broader concept of dynamic competition; hence, any analysis that attempts to link current competitive activities to future outcomes, including innovation, is relevantly dynamic. And the industrial organization literature is replete with models that entail predicting future competitive conditions based upon current inputs, including game theoretic models of price predation,⁷ strategic entry deterrence,⁸ and all of merger analysis.⁹ And, as we shall show, current enforcement policy relies to the extent practical upon just such predictions.

⁶ Sidak & Teece, *supra* note 1, at 600 (describing dynamic competition analysis as one that is “future-oriented and would recognize that certain business practices might lead to market creation (or at least co-creation) that would yield new demand curves with large gains in consumer surplus (because demand for new products could be satisfied)”). This narrowed focus leads Evans and Hylton, for example, to assert that dynamic competition models are entirely absent in the modern literature of antitrust economics. Evans & Hylton, *supra* note 2, at 239 (reviewing leading surveys of antitrust economics literature and concluding that “[e]very model they present is based on static competition within a relevant antitrust market”).

⁷ See, e.g., Bruce H. Kobayashi, *The Law and Economics of Predatory Pricing*, in ANTITRUST LAW AND ECONOMICS 116 (Keith N. Hylton ed., 2010); Paul Milgrom & John Roberts, *Predation, Reputation, and Entry Deterrence*, 27 J. ECON. THEORY 280 (1982).

⁸ See, e.g., Dennis W. Carlton & Michael Waldman, *The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries*, 33 RAND J. ECON. 194 (2002); Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals’ Costs to Achieve Power over Price*, 96 YALE L.J. 209 (1986); Steven C. Salop & David T. Scheffman, *Raising Rivals’ Costs*, 73 AM. ECON. REV. 267 (1983); Steven C. Salop, *Strategic Entry Deterrence*, 69 AM. ECON. REV. 335 (1979).

⁹ Merger simulation models are but one recent example. See, e.g., Jonathan B. Baker, *Merger Simulation in an Administrative Context*, 77 ANTITRUST L.J. 451 (2011); Oliver Budzinski & Isabel Ruhmer, *Merger Simulation in Competition Policy: A Survey*, 6 J. COMPETITION L. & ECON. 277 (2010); Gregory J. Werden & Luke M. Froeb, *Unilateral Competitive Effects of Horizontal Mergers*, in HANDBOOK OF ANTITRUST ECONOMICS 43 (Paolo Buccirossi ed., 2008). Dynamic oligopoly models also attempt to forecast competitive outcomes. See, e.g., Patrick Bajari, C. Lanier Benkard & Jonathan Levin, *Estimating Dynamic Models of Imperfect Competition*, 75 ECONOMETRICA 1331 (2007); Liran Einav & Jonathan Levin, *Empirical Industrial Organization: A Progress Report*, 24 J. ECON. PERSP. 145 (2010). For an argument in favor of incorporating these models into merger analysis, see Jay Ezrielev & Janusz A. Ordoover, *The 2010 Horizontal Merger Guidelines: A Static Compass in a Dynamic World?*, ANTITRUST SOURCE, Oct. 2010, at 1, http://www.americanbar.org/content/dam/aba/publishing/antitrust_source/Oct10_Ezrielev10_21.authcheckdam.pdf.

B. WHAT WE KNOW AND DON'T KNOW ABOUT MARKET STRUCTURE,
COMPETITION, AND INNOVATION

Economic theory focusing upon dynamic considerations has long emphasized the possible link between market structure and incentives to innovate. The economic debate has deep roots in seminal analyses by, on the one hand, Joseph Schumpeter, who famously argued it is innovation, which he called “a gale of creative destruction,”¹⁰ that stimulates competition and, on the other hand, Kenneth Arrow, who was of the view that vigorous market competition is a precondition for innovation.¹¹ To this day, however, the complex relationship between static product market competition and the incentive to innovate is not well understood. For example, competition provides an incentive for rivals and would-be rivals to seek gains from innovation.¹² At the same time, a firm that expects to face greater competition in the future might see a diminishing opportunity for profit and therefore have less incentive to innovate.¹³ In sum, economic theory does not support a confident conclusion as to which antitrust policies will elicit a higher rate of innovation.¹⁴

In view of this theoretical complexity, it is not surprising that the empirical literature attempting to link market structure and product market competition (both viewed statically) to innovation is inconclusive. Further, while competition certainly can stimulate innovation even within the Schumpeterian vision of dynamic competition, economics provides no reason to believe innovation ordinarily will come from within a “market” as defined for the purpose of static antitrust analysis; hence, there is little reason to believe proxies for dynamic competition will be positively correlated with innovative activity observed in such a market. Gilbert’s careful examination of the empirical record reaffirms that the existing body of theoretical and empirical literature on the relationship between competition and innovation supports neither “the Schumpeterian hypothesis that monopoly promotes either investment in R&D

¹⁰ See JOSEPH A. SCHUMPETER, *CAPITALISM, SOCIALISM, AND DEMOCRACY* 81–90 (1942).

¹¹ See Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS* 609 (Richard Nelson ed., 1962). For an excellent survey of this literature, see Richard Gilbert, *Looking for Mr. Schumpeter: Where Are We in the Competition-Innovation Debate?*, in 6 *INNOVATION POLICY AND THE ECONOMY* 159 (Adam B. Jaffe et al. eds., 2006).

¹² J.R. Hicks, *Annual Survey of Economic Theory: The Theory of Monopoly*, 3 *ECONOMETRICA* 1, 8 (1935).

¹³ See Joshua D. Wright, *Antitrust, Multidimensional Competition, and Innovation: Do We Have an Antitrust-Relevant Theory of Competition Now?*, in *COMPETITION POLICY AND PATENT LAW UNDER UNCERTAINTY* 228, 241 (Geoffrey A. Manne & Joshua D. Wright eds., 2011).

¹⁴ See *id.* at 250; see also Richard J. Gilbert, *Competition and Innovation*, in 1 *ABA SECTION OF ANTITRUST LAW, ISSUES IN COMPETITION LAW AND POLICY* 577, 583 (W. Dale Collins ed., 2008) (“[E]conomic theory does not provide unambiguous support either for the view that market power generally threatens innovation by lowering the return to innovative efforts nor the Schumpeterian view that concentrated markets generally promote innovation.”).

or the output of innovation” nor “a strong conclusion that competition is uniformly a stimulus to innovation.”¹⁵

Some economists have suggested that antitrust analysis stop focusing upon the relationship between market structure and innovation and instead emphasize the “capabilities” of the firms in a market.¹⁶ The purported benefit of this shift in focus is that capabilities are “arguably a better proxy for the firm’s competitive position than is its downstream market share.”¹⁷ We agree that market structure, as presently defined by reference primarily to market shares and ease of entry, provides at best a very crude signal of the likely impact a merger or a business practice will have upon future competition. Whether focusing upon capabilities or upon any other systematic approach will ever provide more accurate signals, however, remains unclear.¹⁸

II. DYNAMIC ANALYSIS IN ANTITRUST LAW

The simple fact is that economics does not yet provide a useful understanding of the relationships among market structure, competition, and innovation.¹⁹ Without such an understanding, let alone empirical support, dynamic analysis in antitrust law remains in a gestational state, driven largely by intuition and the unique stories told by the proponents and opponents of each merger or business practice that comes under scrutiny. This primitive approach to dynamic analysis invites ad hoc-ery and inconsistency in agency decisions.

In a number of areas, however, antitrust courts and agencies, using Occam’s razor, have trimmed away the complex factual inquiries, developing

¹⁵ Gilbert, *supra* note 14, at 600. There appears to be consensus on this point. See Wesley M. Cohen & Richard C. Levin, *Empirical Studies of Innovation and Market Structure*, in 2 *HANDBOOK OF INDUSTRIAL ORGANIZATION* 1059 (Richard L. Schmalensee & Robert D. Willig eds., 1989); Michael L. Katz & Howard A. Shelanski, *Mergers and Innovation*, 74 *ANTITRUST L.J.* 1, 22 (2007) (“[T]he literature addressing how market structure affects innovation (and vice versa) in the end reveals an ambiguous relationship in which factors unrelated to competition play an important role.”); Sidak & Teece, *supra* note 1, at 588 (“[D]espite 50 years of research, economists do not appear to have found much evidence that market concentration has a statistically significant impact on innovation.”).

¹⁶ In particular, the capabilities approach would focus upon “capabilities that incumbents have developed that newcomers should not expect to possess,” the internal organization of the firm, evolutionary patterns in industry dynamics, and a firm’s “competencies.” Sidak & Teece, *supra* note 1, at 611–12; see also DAVID J. TEECE, *DYNAMIC CAPABILITIES AND STRATEGIC MANAGEMENT: ORGANIZING FOR INNOVATION AND GROWTH* (2009).

¹⁷ Sidak & Teece, *supra* note 1, at 616.

¹⁸ Sidak and Teece appear to recognize the practical difficulties of their “capabilities” approach, warning that “the firm’s capabilities are always in a state of flux,” and conceding that “[t]he tools for assessing capabilities may not be well developed yet.” *Id.* at 617.

¹⁹ See Wright, *supra* note 13, at 239 (“[O]ur empirical knowledge of the relationship between market structure and innovation, as well as between market structure and consumer welfare, is limited relative to our understanding of static price effects in conventional product markets.”).

presumptions and truncated analyses. Here we survey some examples of dynamic analysis in contemporary antitrust law and go on to highlight forms of dynamic analysis that courts and agencies have wisely avoided in view of the limited state of economic learning.

A. PREDICTIVE FACT-FINDING ALREADY INCORPORATED (THINGS WE DO)

Antitrust agencies and courts already incorporate some dynamic considerations into their analyses of markets and of the likely effect of a transaction or practice. They do so in areas where confidence in predictive fact-finding is bolstered by economic theory, judicial learning and experience, empirical evidence, or the availability of reliable, case-specific evidence.

1. *Monopoly Pricing*

Although dynamic considerations are usually incorporated into antitrust analyses through a fact-intensive inquiry, perhaps the most prominent counter-example involves a bright-line presumption of legality: the Sherman Act does not prohibit a monopoly from charging the profit-maximizing price if the firm has lawfully acquired its market power. For this reason, as Evans and Hylton point out, it is not accurate to say that the U.S. antitrust laws are designed to “maximize consumer welfare” in the static sense.²⁰ Instead, the principle that neither monopoly profits nor monopoly pricing is unlawful under the Sherman Act implicitly but necessarily involves the presumption that the dynamic benefits from innovation and from “competition for the market” will outweigh the deadweight losses emphasized in static analysis. In the *Trinko* case Justice Scalia made the connection to dynamic considerations explicit when he observed not only that charging monopoly prices is lawful but also that “[t]he opportunity to charge monopoly prices—at least for a short period—is what attracts ‘business acumen’ in the first place; it induces risk taking that produces innovation and economic growth.”²¹ In this example, the presumption of dynamic benefits from innovation and the introduction of new products takes the form of a rule of per se legality with respect to firm pricing decisions.²²

²⁰ Evans & Hylton, *supra* note 2, at 210.

²¹ *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004).

²² A court may well be skeptical of claims that product design decisions are sufficiently likely to generate anticompetitive effects to warrant per se condemnation. The D.C. Circuit ruled per se condemnation of tying a software program to a software platform inappropriate because per se treatment is justified only by accumulated experience, which is lacking in high-tech product markets. *United States v. Microsoft Corp.*, 253 F.3d 34, 92–93 (D.C. Cir. 2001). The Supreme Court has expressed a similar reluctance to condemn horizontal restraints involving new products or business practices for fear of chilling innovation and reducing dynamic benefits. See Geoffrey A. Manne & Joshua D. Wright, *Innovation and the Limits of Antitrust*, 6 J. COMPETITION L. & ECON. 153, 194 nn.116–21 (2010) (collecting cases).

2. *Attempted Monopolization, Predatory Pricing, and Recoupment*

The analysis of a claim of attempted monopolization under Section 2 of the Sherman Act based upon predation requires a prediction concerning whether the defendant's conduct poses a dangerous probability that the defendant will—note the future tense—monopolize the market. As explained in *Brooke Group*, the plaintiff in a case alleging attempted monopolization through predatory pricing must demonstrate both that the allegedly predatory price is below the defendant's costs (appropriately measured) and that the defendant has a dangerous probability of later recouping its present investment in below-cost prices.²³

This analysis is inherently dynamic in the sense that it requires a prediction about competitive outcomes: The question of recoupment requires a fact-intensive analysis of whether the firm's pricing strategy and other market conditions are conducive to the future exit of rivals and the ability of the firm thereafter to sustain above-cost prices.²⁴

3. *Exclusive Dealing and Monopolization*

The modern “rule of reason” analysis for evaluating exclusive dealing contracts focuses upon a number of predictive factors. Areeda and Hovenkamp state the prima facie case for exclusive dealing claims as follows:

[The] plaintiff must show the requisite agreement to deal exclusively and make a sufficient showing of power to warrant the inference that the challenged agreement threatens reduced output and higher prices in a properly defined market. Then it must also show a foreclosure coverage sufficient to warrant an inference of injury to competition, depending on the existence of other factors that give significance to a given foreclosure percentage, such as contract duration, presence or absence of high entry barriers, or the existence of alternative sources of distribution or resale.²⁵

As with claims of predatory pricing and other varieties of attempted monopolization, courts must determine whether the monopolist's business practice, in this case exclusionary contracts in the input market, will prevent an excluded firm or firms from competing effectively—here, by realigning their supply contracts and achieving minimum efficient scale.²⁶ While this might initially seem to be a static inquiry because the relevant question is whether the contract enhances the excluding firm's market power, the analysis is dy-

²³ *Brooke Grp. Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 224 (1993).

²⁴ C. Scott Hemphill, *The Role of Recoupment in Predatory Pricing Analyses*, 53 STAN. L. REV. 1581, 1607–08 (2001); Kobayashi, *supra* note 7.

²⁵ 11 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 1821 (3d ed. 2011).

²⁶ Alden F. Abbott & Joshua D. Wright, *Antitrust Analysis of Tying Arrangements and Exclusive Dealing*, in ANTITRUST LAW AND ECONOMICS, *supra* note 7, at 183.

namic in at least one and in some cases two ways. One is that it requires a prediction about future market conditions, namely whether the exclusive contract will disadvantage the complaining rival, increase barriers to entry, or cause it to exit the market.²⁷ The other is the prediction whether the exclusive contract will result in reduced innovation rather than (or in addition to) higher prices.²⁸

4. Merger Analysis

Agencies and courts routinely engage in dynamic analysis of mergers. Ultimately, merger analysis requires a comparative prediction about future competition with and without the proposed transaction. This predictive analysis affects all areas of merger law, including efficiencies. For example, the Horizontal Merger Guidelines take into account efficiencies predicted by the parties if they are of a cognizable type, merger-specific, and verifiable.²⁹ Further, the Guidelines call for analyzing the likely “effects of a merger on innovation.”³⁰

Similarly, merger analysis routinely involves a predictive analysis of the likelihood of successful entry. For example, in *United States v. Syufy Enterprises*,³¹ the Ninth Circuit upheld a district court decision rejecting the Antitrust Division’s argument for enjoining a merger to monopoly in the Las Vegas movie theater market on the basis of the court’s prediction that entry

²⁷ See sources cited *supra* note 8. This analysis also arises in the merger context. For example, an agency might approve a merger conditional upon the imposition of a conduct remedy, such as prohibiting the merged entity from entering into exclusive contracts in order to preserve rivals’ access to an input. The economic basis for imposing such a remedy is the prediction that the post-merger firm will have the incentive and ability to exclude rivals and deter entry. See U.S. DEP’T OF JUSTICE, ANTITRUST DIV., ANTITRUST DIVISION POLICY GUIDE TO MERGER REMEDIES 17 (June 2011) (“In these types of situations, it may be appropriate to impose limits on the merged entity’s ability to enter into restrictive or exclusive contracts.”), available at <http://www.justice.gov/atr/public/guidelines/272350.pdf>.

²⁸ See, e.g., Complaint at 5, Intel Corp., FTC Docket No. 9341, 2010 WL 4542454 (Nov. 2, 2010), available at <http://www.ftc.gov/os/adjpro/d9341/091216intelcmpt.pdf> (“The loss of price and innovation competition in the relevant markets will continue to have an adverse effect on competition and hence consumers. Absent the remedy provided herein, Intel will continue to maintain or even enhance its market power, consumers will have fewer choices, prices will be higher than they would be in competitive markets, and quality and innovation will be diminished.”).

²⁹ U.S. Dep’t of Justice & Fed. Trade Comm’n, Horizontal Merger Guidelines § 10 (2010), available at <http://justice.gov/atr/public/guidelines/hmg-2010.pdf> [hereinafter 2010 Merger Guidelines].

³⁰ *Id.* (“When evaluating the effects of a merger on innovation, the Agencies consider the ability of the merged firm to conduct research or development more effectively.”).

³¹ 903 F.2d 659 (9th Cir. 1990). For a critique of the Ninth Circuit opinion in *Syufy*, see Jonathan B. Baker, *The Problem with Baker Hughes and Syufy: On the Role of Entry in Merger Analysis*, 65 ANTITRUST L.J. 353 (1997).

would remain easy.³² The Second Circuit's prediction about new entry was likewise critical to its ruling in *United States v. Waste Management, Inc.*,³³ where the court upheld a merger that would create a firm with a 48.8 percent market share, predicting that the merged firm would be unable to raise prices: "none of its smaller competitors would be able to follow the price increases because of the ease with which new competitors would appear."³⁴

Where the evidence indicates entry is not easy and therefore will not likely be sufficient to discipline post-merger pricing, courts will sustain merger challenges. For example, in *FTC v. Staples, Inc.*,³⁵ the district court granted a preliminary injunction prohibiting a merger between Staples and Office Depot, two office supply superstores, concluding that entry would be "extremely unlikely" based both upon evidence indicating a trend toward exit and upon the experience of Office 1, an office superstore that had become the fourth largest firm in the market but then had failed.³⁶

Under the Merger Guidelines, possible entry must be "timely, likely, and sufficient" to "deter or counteract the competitive effects of concern."³⁷ The required analysis is inherently predictive and fact-intensive. To assess whether future entry is likely to counteract competitive concerns, the agencies will consider a number of factors, including the history of entry in the relevant market and the costs a future entrant would incur, including the requisite "planning, design, and management; permitting, licensing, or other approvals; construction, debugging, and operation of production facilities; and promotion, marketing, distribution, and satisfaction of customer testing and qualification requirements."³⁸

The failing firm defense also calls for a dynamic analysis. While it is inherently predictive, it comes with the benefit of a market test by way of the requirement that the firm has been shopped for alternative buyers. The Merger Guidelines state the requirements for the failing firm defense as follows:

The Agencies do not normally credit claims that the assets of the failing firm *would* exit the relevant market unless all of the following circumstances are met: (1) the allegedly failing firm *would* be unable to meet its financial

³² *Syufy*, 903 F.2d at 667.

³³ 743 F.2d 976 (2d Cir. 1984).

³⁴ *Id.* at 983–84.

³⁵ 970 F. Supp. 1066 (D.D.C. 1997).

³⁶ *Id.* at 1087; *see also* *FTC v. Cardinal Health, Inc.*, 12 F. Supp. 2d 34, 54–58 (D.D.C. 1998). Similar predictive entry analysis is routinely extended beyond the merger context. *See, e.g.*, *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421 (9th Cir. 1995) (predatory pricing).

³⁷ 2010 Merger Guidelines, *supra* note 29, § 9.

³⁸ Malcolm B. Coate, *Theory Meets Practice: Barriers to Entry in Merger Analysis*, 4 REV. L. & ECON. 183, 208 (2008) ("While theorists might prefer to advance broad generalizations on sunk costs blocking entry, the Guidelines' technique requires facts.").

obligations in the near future; (2) it *would not* be able to reorganize successfully under Chapter 11 of the Bankruptcy Act; and (3) it has made unsuccessful good-faith efforts to elicit reasonable alternative offers that would keep its tangible and intangible assets in the relevant market and pose a less severe danger to competition than does the proposed merger.³⁹

With the additional assurance gained by evidence that the firm has been unable to find an alternative buyer, it is not surprising that agencies and courts can be confident in predicting the firm would fail if it cannot be acquired by a rival, as proposed.

B. THINGS WE DO NOT DO

Commentators have called for increased incorporation of dynamic considerations into antitrust analysis beyond the predictive fact-finding described in Part II.A. In particular, these commentators have encouraged antitrust agencies and courts more frequently, perhaps routinely, to engage in fact-finding about the welfare tradeoffs between static and dynamic effects, and to predict the path of technological evolution in the marketplace. The same commentators have also proposed methodological approaches designed to guide agencies and courts through these tasks.⁴⁰ Thus far, however, agencies and courts have declined these invitations to make decisions based upon predictions about the evolution of markets beyond the fact-intensive dynamic analyses described above.

With respect to dynamic versus static welfare tradeoffs, other commentators have observed that an analysis requiring an agency or court to “balance” expected static (immediate) harms against dynamic (future) benefits would entail significant administrative burdens, could not likely be applied accurately, and therefore would produce inconsistent decisions and legal uncertainty for innovative firms.⁴¹ Nor, despite Katz and Shelanski’s insightful

³⁹ 2010 Merger Guidelines, *supra* note 29, § 11 (emphases added).

⁴⁰ Katz & Shelanski, *supra* note 15; Sidak & Teece, *supra* note 1, at 618–19.

⁴¹ See, e.g., Dennis W. Carlton & Ken Heyer, *Extraction vs. Extension: The Basis for Formulating Antitrust Policy Towards Single-Firm Conduct*, COMPETITION POL’Y INT’L, Autumn 2008, at 285, 302 (“Certain core components of competition—in particular, introducing better products, lowering production costs, and lowering price . . . are in virtually all circumstances so likely to promote welfare and economic growth that they should be permitted by antitrust policies despite a theoretical possibility that protecting competitors from them will, in rare circumstances, enhance welfare. The costs of identifying and effectively remedying those rare but theoretically possible exceptions are too high to merit exposing such conduct to possible antitrust attack.”); Evans & Hylton, *supra* note 2, at 232–33 (“It is hard enough to solve the equations of static models for unique solutions and draw inferences from these equations. . . . The mathematics of dynamic models is far more challenging and the likelihood that an economist who invests efforts in such models will achieve a publishable result is lower. It is easy to use words to talk about dynamic competition, as Professor Joseph Schumpeter did so eloquently, but it is much more difficult to use mathematics. When realism and relevance butt heads with analytical tractability, tractability almost always wins out in economics.”); Richard Gilbert, *Holding Innovation to an*

article advocating that agencies and courts take a more rigorous, probabilistic, and decision-theoretic approach to assessing these tradeoffs, has that method gained any traction among antitrust enforcers.⁴² We also note that antitrust agencies and courts have not adopted a presumption that would uniformly favor dynamic competition over static competition,⁴³ a rule some have argued would produce social benefits.⁴⁴ We believe courts and agencies have not adopted these approaches for good reason; each requires a level of confidence concerning competition and innovation that is not yet warranted by our theoretical and empirical knowledge. Neither approach could be applied consistently or accurately.

Courts and agencies generally have also been reluctant to predict the specific path of technological evolution. Consider one noteworthy example, the FTC's decision to close its investigation of the *Genzyme/Novazyme* merger,⁴⁵ which consolidated the only two firms conducting research into therapies for Pompe disease. Chairman Timothy J. Muris issued a separate statement expressing doubt about the usefulness of analyzing "innovation markets," calling for particularly careful factual analysis when predicting the effect a merger will have upon innovation, and emphasizing the "lack of any clear theoretical or empirical link between increased concentration and reduced innovation," as acknowledged in the FTC's own report on that subject.⁴⁶ Accordingly, Muris correctly rejected as inconsistent with economic theory and evidence the claim that mergers should be presumed to have an anticompeti-

Antitrust Standard, COMPETITION POL'Y INT'L, Spring 2007, at 47; A. Douglas Melamed, *Exclusionary Conduct Under the Antitrust Laws: Balancing, Sacrifice, and Refusals to Deal*, 20 BERKELEY TECH. L.J. 1247, 1267 (2005) ("In refusal to deal cases, a balancing test would have the additional complication of requiring calculation of the costs to innovation incentives and dynamic efficiency of a duty to deal under the circumstances. A test that required such a calculation would plainly not be administrable by courts or firms.").

⁴² See Katz & Shelanski, *supra* note 15; Sidak & Teece, *supra* note 1, at 583 (describing Katz & Shelanski's related article as "a milestone" in the dynamic competition program); Michael L. Katz & Howard A. Shelanski, "Schumpeterian" Competition and Antitrust Policy in High-Tech Markets, 14 COMPETITION 47 (2005).

⁴³ See, e.g., *FTC v. H.J. Heinz Co.*, 246 F.3d 708, 722–23 (D.C. Cir. 2001) (rejecting as speculative an efficiency justification that a proposed merger would facilitate innovation sufficient to overcome the FTC's prima facie demonstration of likely anticompetitive effects).

⁴⁴ See, e.g., Thomas J. DiLorenzo & Jack C. High, *Antitrust and Competition, Historically Considered*, 26 ECON. INQUIRY 423 (1988). Evans and Hylton describe the Sherman Act's presumption that naked cartel activity is not justified by the possibility that the cartel's monopoly profits will induce greater dynamic benefits as a judgment that "seems right to us but is not based on rigorous economic theory or empirical work." Evans & Hylton, *supra* note 2, at 220 n.67.

⁴⁵ *Genzyme Corp./Novazyme Pharms., Inc.*, FTC File No. 021-0026 (Jan. 13, 2004).

⁴⁶ Statement of Commissioner Timothy J. Muris, Chairman, Fed. Trade Comm'n, at 7, *Genzyme Corp./Novazyme Pharms., Inc.*, FTC File No. 021-0026 (Jan. 13, 2004), available at <http://www.ftc.gov/os/2004/01/murisgenzymestmt.pdf>; see also 1 FED. TRADE COMM'N, ANTICIPATING THE 21ST CENTURY: COMPETITION POLICY IN THE NEW HIGH-TECH, GLOBAL MARKETPLACE ch. 7 (1996), available at http://www.ftc.gov/opp/global/report/gc_v1.pdf.

tive effect upon innovation.⁴⁷ In the intervening eight years neither economic theory nor the empirical evidence has changed in any way that would support such a general legal presumption in lieu of fact-specific analysis.

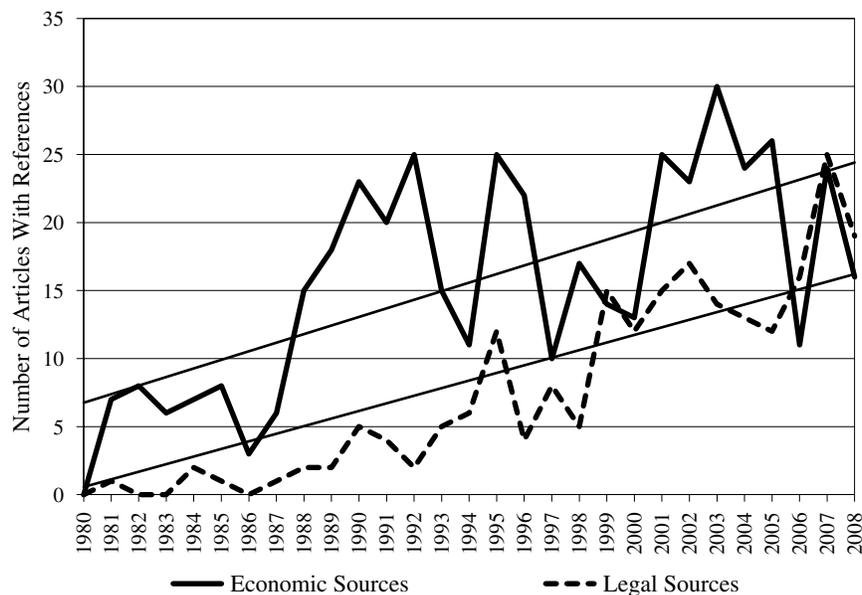
Alternative approaches to dynamic analysis contemplate courts and agencies relying upon insights from evolutionary and behavioral economics to generate predictions concerning not only future innovation by the firm or firms under investigation but also by their rivals—actual as well as potential. Economic science has not provided a way to make reliable and accurate predictions of this nature, nor even more general predictions concerning changes in market structure and levels of innovation. As with static-versus-dynamic welfare tradeoffs, in the absence of reliable knowledge or generally accepted theory, antitrust institutions wisely refrain from making predictions about the evolutionary path or competitive significance of innovations or new products generally or in any particular relevant market.

III. DYNAMIC ANALYSIS AND THE LIMITS OF ANTITRUST INSTITUTIONS

Scholarly enthusiasm for increased consideration in antitrust analysis of dynamic competition and of innovation has been building over at least the last twenty-five years. Figure 1 illustrates this trend separately among law professors and among economists. The more simplistic approaches to incorporating dynamic analysis, such as calculating each firm's share of research and development expenditures as a percentage of the sum of such spending by all firms in the relevant market and using those data as the agencies now use sales to calculate market share,⁴⁸ have been overtaken by proposals that are more nuanced and hence would be more difficult to implement. One type of proposal would try to improve upon the tools now available to the institution for evaluating the future competitive significance of a present business practice or transaction. An institution's ability to make accurate predictions about a particular market depends upon both finding facts and drawing inferences relevant to the future evolution of that market. If that can be done, then the next step will be to estimate the near-term "deadweight" loss of consumer welfare expected in a static analysis and compare it to the predicted long-term gains to

⁴⁷ Statement of Commissioner Timothy J. Muris, *supra* note 46, at 5–6, 23 ("The reason why no presumption attaches is clear. There is no reason to believe, a priori, that a particular merger is more likely to harm innovation than to help it—which is, of course, simply another way of saying there is no empirical basis for a presumption.").

⁴⁸ See U.S. Dep't of Justice & Fed. Trade Comm'n, Antitrust Guidelines for the Licensing of Intellectual Property § 3.2.3 (1995), available at <http://www.justice.gov/atr/public/guidelines/0558.pdf>.



Source: Economic Sources include full-text JSTOR searches of *The American Economic Review*, the *Journal of Political Economy*, *Econometrica*, and *The RAND Journal of Economics*. JSTOR reports references through 2008 for all included journals except the *Journal of Political Economy*, which continues to the present. Legal Sources include full-text searches performed in Westlaw's *Journals and Law Reviews (JLR)* database.

FIGURE 1:
REFERENCES TO “DYNAMIC COMPETITION”

consumers from dynamic competition in the same market (or, more precisely, in the market as it will later have evolved).⁴⁹

The alternative path to incorporating dynamic considerations into antitrust analysis is through the development of heuristics, whether based upon economic theory, empirical evidence, or both. For example, as we have seen, because economic theory teaches that successful predatory pricing depends upon the firm incurring certain losses in the present and somehow more than recouping those losses in the future, it is regarded as an unlikely business practice.⁵⁰ To economize on investigation, therefore, the complainant alleging

⁴⁹ Or conversely, as in a predatory pricing case, the relevant comparison might be the near-term gains in static competition weighed against predicted long-term losses in dynamic competition from new entrants and new products that do not materialize.

⁵⁰ Kobayashi, *supra* note 7 (reviewing empirical data demonstrating the low likelihood of predation); see also *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 588–89 (1986) (“Any agreement to price below the competitive level requires the conspirators to forgo profits that free competition would offer them. The forgone profits may be considered an investment in the future. For the investment to be rational, the conspirators must have a reasonable expectation of recovering, in the form of later monopoly profits, more than the losses suf-

predatory pricing bears a heavy burden of proof; unless that proof is forthcoming, there is no need to find facts and draw inferences about the alleged predator's ability later to recoup its losses. In a similar vein, it might be possible to develop a serviceable theory about the probability that any given firm will in the future become a source of significant innovation in the market in which it is now operating; more likely, it may be possible to identify firms that are *not* likely to be innovators and therefore to regard with relative indifference the acquisition of such a firm by one of its rivals. Time would then provide empirical feedback as to whether the theory is underinclusive because firms thought more likely to be innovators proved not to be.

Having specified ways in which antitrust analysis might, in principle, more often take dynamic considerations into account, we turn to evaluate the prospects for doing so in practice. That inquiry requires an assessment of the limitations and capabilities of the institutions responsible for implementing antitrust analysis—competition agencies and the courts that review their decisions.

A. AGENCIES

More than thirty years ago the Supreme Court of the United States embraced then-Professor Robert Bork's view that the "Congress designed the Sherman Act as a 'consumer welfare prescription,'"⁵¹ and from that little acorn a giant oak has grown. The courts, and therefore the antitrust agencies, in the United States have ever more rigorously incorporated into their analyses the fundamental, widely accepted teachings of economic science. In particular, those institutions have, with the variations of degree noted in Part II above, applied the static analysis of markets used in contemporary industrial organization economics. As a result, the agencies' enforcement discretion has been cabined, and the application of antitrust norms to particular practices and transactions has become concomitantly more predictable; these developments have in turn diminished legal risk and facilitated business planning.

The introduction of more dynamic elements into antitrust analysis will inevitably diminish the certainty and predictability of the law. This will be true even in the long run—that is, even after the period of experimentation and fine tuning attendant to any significant change in analytic technique. The reason is simple: No matter how sophisticated the analysis, no matter how confi-

ferred. . . . Absent some assurance that the hoped-for monopoly will materialize, *and* that it can be sustained for a significant period of time, '[t]he predator must make a substantial investment with no assurance that it will pay off.' For this reason, there is a consensus among commentators that predatory pricing schemes are rarely tried, and even more rarely successful." (quoting Frank H. Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 263, 268 (1981)).

⁵¹ *Reiter v. Sonotone Corp.*, 442 U.S. 330, 343 (1979) (quoting ROBERT H. BORK, *THE ANTI-TRUST PARADOX* 66 (1978)).

dent the predictions, the future will always be more uncertain than the present. Operating under that greater degree of uncertainty means agencies (and to a lesser extent courts) will have greater discretion. There will simply be more degrees of freedom for the intuitions, biases, and personal and institutional preferences of decisionmakers to influence the outcomes of investigations and cases.

The case for emphasizing dynamic analysis is that conclusions on average will prove more accurate *ex post* even if they seem, on average, less certain *ex ante*. The hope is that improved accuracy will reduce both false positives and false negatives, and thus produce consumer welfare gains that will offset the increased administrative costs associated with a less certain standard. We all know the limitations of the static model make it less than fully accurate; we can only hope the promise of greater accuracy using a dynamic model (once one emerges in a usable form) will be realized. The risk is that using the dynamic approach will yield not only greater uncertainty but no more, and perhaps even less, accuracy. In their current state, the leading proposals to incorporate dynamics do not make us optimistic about the benefit, in no small part because of the difficulties facing the institutions charged with making antitrust decisions.

The ability to predict developments, or even the general direction of development, in a particular market requires knowledge about the plans of the firms in or adjacent to the relevant market, and perhaps of firms further afield as well. An enforcement agency can often identify the firms currently in a market using publicly available information. By interviewing representatives of those firms and of their major customers and suppliers—who can identify their alternative suppliers and customers, respectively—the agency can be confident it has a grasp of the players' relative competitive significance, at least in the static sense of their current market shares and the recent trajectory of those shares, and perhaps of the firms' commitments of resources to research and development.

Identifying firms that are not yet in the market but may develop a technology that enables them to enter or, more important, significantly to alter the market, is necessarily more difficult; indeed, it is hard to imagine the agency ever could be confident it has located all or even the most relevant potential entrants. If the firms currently in the market are not aware of an existential threat being developed by some firm not yet in the market—or perhaps by a college student emulating Bill Gates or Mark Zuckerberg—there is little reason to hope a government investigative agency could do so. The agency may have the advantage of being able to compel sources to answer its questions, but first it has to know whom to ask. This is likely to be more difficult in precisely those markets where technology is subject to rapid evolution, say, computer software as opposed to automobiles. Markets in which the technol-

ogy has not matured to reach a settled, industry-wide standard are the markets where static analysis is most likely misleading and where dynamic analysis could add the most value—if only the prospect of impending technological change could be confirmed.

Let us assume the agency could identify the firms, regardless whether they are currently in the relevant market, most likely to unveil a new product that will displace the present offerings. Those potential innovators are not unbiased sources of information. If they think a proposed merger between two leading firms already in the market would make for a more formidable rival, then they have an incentive to impede the merger by portraying it as anticompetitive. Conversely, if they think the merger would create an unwieldy behemoth, then they will want to see it consummated. Either way, they will provide or withhold information and make arguments according to their own interest, which is not served by more vigorous competition.

Suppliers and customers may have valuable information gleaned from their dealings with multiple firms currently in the relevant market, but their information pertains to the market as it is, and therefore to static rather than to dynamic analysis; indeed, antitrust agencies routinely interview suppliers and customers about the likely effect of a merger or of a business practice by a firm in the relevant market. These upstream and downstream sources, however, would not often have helpful information about potential entrants into the product market.⁵² If, perchance, a customer or supplier was aware of a new technology being developed by a non-incumbent firm, it too probably would have interests different from that of the antitrust agency; revolutionary technologies can be fatally disruptive to customers and suppliers with established relationships. For example, neither current suppliers to the automobile industry nor automobile dealers would likely welcome the development of a radically new transportation technology any more than did the makers of harnesses and horse-drawn carriages.⁵³

As is true now in the usual case where no objection is raised to the use of static analysis, the record of an agency decision based upon a dynamic analysis will inevitably include the conflicting expert opinions of the agency's own economist and that of the firm(s). Again as in the usual case, each economist will have built a model based upon some common and some strategically chosen assumptions. Unlike the usual case of today, however, the record may also contain types of information and analysis drawn from sources with which

⁵² Suppliers and customers are more likely to have information about potential entrants from other geographic rather than product markets because the efficient scale of operations may differ at each stage of production and distribution, thereby putting vertically adjacent firms into relationships with different customers or suppliers in different places.

⁵³ Fisher Body made the transition but it is noteworthy precisely because it is an exception.

antitrust economists, not to mention judges, are presently unfamiliar. For example, Sidak and Teece would have antitrust agencies draw upon the “large literature . . . in the field of strategic management,” which, they say, “provides many clues to assessing the capabilities of both actual and potential competitors.”⁵⁴ As Sidak and Teece acknowledge, however, “the tools for assessing capabilities may not be well developed yet.”⁵⁵

Similarly, Katz and Shelanski suggest the agencies encourage and look to “[a]cademic researchers . . . conducting industry-specific studies that provide a deeper understanding of the history and conditions for innovation in different economic sectors regularly at issue in mergers.”⁵⁶ If the antitrust agencies are to start relying upon “industry-specific studies . . . of the history and conditions for innovation,” then they will first have to become informed consumers of the journals of business and economic history. The antitrust agencies of today, however, are neither organized nor staffed in such a way as to incorporate learning from fields far removed from industrial organization economics. This is not to say the agencies could not hire people who have studied innovation; the problem would be in distilling from those fields lessons the agency’s economists could apply to determine whether a potential case should be brought. The value of an industry case study to an agency’s enforcement decision is inherently limited because such a study is necessarily historical whereas the challenge of dynamic analysis is to anticipate future competitive outcomes. Indeed, to the extent industry-specific case studies have improved antitrust analysis it has been because the empirical information to be gleaned from those studies could be folded into industrial organization economics.⁵⁷ The more likely effect will be to dilute the rigor that even static analysis brings to the process of case selection and to free agency lawyers to construct hypothetical scenarios about what might happen in the relevant market if the agency does not act to interdict a particular business practice or proposed merger.

⁵⁴ Sidak & Teece, *supra* note 1, at 614.

⁵⁵ *Id.* at 617.

⁵⁶ See Michael L. Katz & Howard A. Shelanski, *Merger Policy and Innovation: Must Enforcement Change to Account for Technological Change?*, in 5 INNOVATION POLICY AND THE ECONOMY 109, 153 (Adam B. Jaffe et al. eds., 2005).

⁵⁷ See Timothy J. Muris, *Improving the Economic Foundations of Competition Policy*, 12 GEO. MASON L. REV. 1, 17 (2003) (discussing Benjamin Klein’s use of case studies as “especially illuminating” because they tied industry-specific facts to the industrial organization economic framework); see also Joshua D. Wright, *Benjamin Klein’s Contributions to Law and Economics*, in PIONEERS OF LAW AND ECONOMICS 87 (Lloyd R. Cohen & Joshua D. Wright eds., 2009).

B. COURTS

A court reviewing the enforcement decision of an antitrust agency that is based upon conventional or static analysis is, on occasion, faced with an objection that the agency should have taken into account some dynamic feature of the relevant market. One such case was *Waste Management*, discussed above, where the proponent of a merger convinced the court to reject the agency's decision on the ground that easy entry into the market would make it unprofitable for the merged firm significantly to increase prices. If in the future an agency bases an enforcement decision upon a more novel type of dynamic analysis—perhaps blocking a business practice that is innocuous from a static vantage but is condemned on the ground it will deter future entry—then the reviewing court will face a correspondingly novel question: How is the court to review the agency's predictive judgment about the behavior of unidentified, indeed hypothetical, firms not presently in the market?

Let us assume that, despite the difficulties and the organizational changes required, an antitrust agency sets out to build the capacity for making policy and enforcement decisions based upon dynamic analyses. The implications for the courts reviewing those decisions will be significant, indeed.

Courts are already familiar with the challenge of evaluating expert economic testimony in antitrust cases. As for how well they do, opinions vary, but we think it fair to say that specialized tribunals generally have demonstrated their command of the economic issues and evidence, while courts of general jurisdiction, with some outstanding exceptions, do less well.⁵⁸ One of those exceptions, Judge Richard Posner, has observed that “[e]conometrics is such a difficult subject that it is unrealistic to expect the average judge . . . to be able to understand all the criticisms of an econometric study, no matter how skillful the econometrician is in explaining the study to a lay audience.”⁵⁹

Evaluating evidence of the sort an agency or a firm might use in dynamic analyses presents the reviewing court with an additional rather than an alternative challenge, for the tools of static analysis will no doubt continue to play a role, if no longer the exclusive role, in many antitrust cases. Moreover, the new challenge will be different in kind because the evidence adduced to make

⁵⁸ There is empirical evidence that, in the United States, generalist judges at the trial level who have had some training in economics after becoming a judge are more capable than others in deciding relatively simple antitrust cases; in economically more complex cases, the difference disappears. Further, the limited specialization a generalist judge (regardless of economic training) might be thought to gain from repeated exposure to antitrust cases has no discernible effect upon the judge's performance. Michael R. Baye & Joshua D. Wright, *Is Antitrust Too Complicated for Generalist Judges? The Impact of Economic Complexity and Judicial Training on Appeals*, 54 J.L. & ECON. 1 (2011).

⁵⁹ Richard A. Posner, *The Law and Economics of the Economic Expert Witness*, J. ECON. PERSP., Spring 1999, at 91, 96.

a predictive judgment about the effect of a proposed merger or of a business practice will be more qualitative and interpretive than quantitative and technical. As a result, the outcome of the case will most often depend upon the standard of proof or of review. If the complaining agency, like any private plaintiff, is required to prove its case in a court of first instance—as is the U.S. Department of Justice when its Antitrust Division brings a case in federal district court—then (under U.S. law) it will need to show by a preponderance of the evidence that the merger threatens substantially to lessen competition at some time in the future or that the challenged conduct raises a dangerous probability that the defendant, although it may have only a modest share of the market at present, if left alone will unlawfully acquire monopoly power. The difference between a case based upon a theory of dynamic rather than of static competition is that the agency’s evidence will necessarily be more speculative; it will be harder for the agency to carry its burden of proof.

In the more usual situation the first instance decision is made by an enforcement agency, and it is the firm that repairs to court and that bears the burden of showing the agency erred.⁶⁰ Because a court typically defers to an agency on questions of fact and on predictive judgments within the agency’s field of expertise,⁶¹ there is a real prospect that judicial review will become perfunctory insofar as the agency has relied upon a dynamic analysis. If judicial review is to be at all meaningful—that is, if the agency is not to have truly unbounded discretion—then the reviewing court will need to require that the agency meet a meaningful standard of evidentiary support for its fact finding. We suggest it is not too much to insist the agency have “substantial evidence”⁶² for the facts upon which it relies and, more important still, that its

⁶⁰ This pattern predominates outside the United States and is seen also in Part III proceedings before the FTC.

⁶¹ See, e.g., *FTC v. Ind. Fed’n of Dentists*, 476 U.S. 447, 454 (1986) (“[O]ur review [of the final order by the FTC] is governed by 15 U.S.C. § 45(c), which provides that ‘[the] findings of the Commission as to the facts, if supported by evidence, shall be conclusive.’ . . . [A]s under the essentially identical ‘substantial evidence’ standard for review of agency factfinding, the court must accept the Commission’s findings of fact if they are supported by ‘such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.’ *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 477 (1951)”; *Toys “R” Us, Inc. v. FTC*, 221 F.3d 928, 935 (7th Cir. 2000) (“Our only function is to determine whether the Commission’s analysis of the probable effects of these acquisitions on hospital competition in Chattanooga is so implausible, so feebly supported by the record, that it flunks even the deferential test of substantial evidence. *Hospital Corp. of America v. F.T.C.*, 807 F.2d 1381, 1385 (7th Cir. 1986.)”; *Case T-201/04, Microsoft v. Comm’n*, 2007 E.C.R. II-3601, ¶ 87 (Community Courts’ “review of complex economic appraisals made by the [European] Commission is necessarily limited to checking whether the relevant rules on procedure and on stating reasons have been complied with, whether the facts have been accurately stated and whether there has been any manifest error of assessment or a misuse of powers.”).

⁶² “Substantial evidence” requires evidence a reasonable person could believe after taking account of any contrary evidence. See, e.g., *Consol. Edison Co. of New York v. NLRB*, 305 U.S. 197, 229 (1938) (“Substantial evidence is more than a mere scintilla. It means such relevant

reasoning from those facts to the prediction of harm to future competition be more plausible than the firm's alternative account of the future. If the agency is not required to show that its scenario is more plausible, not just equally plausible, then the agency could indulge in rank speculation. After all, if no one can know much about the future of a particular market, then any prediction is as good as any another.

The standard we propose should not be a problem for an enforcement agency that has a viable theory of dynamic competition. As of now, however, no antitrust agency and indeed no serious student of the subject purports to have such a theory. On the contrary, proponents of an increased focus upon dynamic analysis themselves stress the need to develop a better understanding of how the competitive process unfolds over time.⁶³ Until that has been done—and there can be no assurance that it can be done well—an antitrust agency's predictions must depend upon a fact-intensive study of the relevant market, the firms in or thought likely to enter that market, and the future direction of their technology. As Judge Easterbrook has said of the rule of reason, as formulated by the U.S. Supreme Court⁶⁴ before antitrust analysis was subjected to the discipline of microeconomics (albeit of the static variety), “When everything is relevant, nothing is dispositive.”⁶⁵ When that is the state of the law, then those who enforce the law are invited if not compelled to make arbitrary and therefore unpredictable decisions.

IV. CONCLUSION

The persistent call for more attention to dynamic competition in antitrust analysis is at once compelling and confounding. It is compelling because we all know that static analysis has significant limitations; the future rarely turns out looking like the present, and straight-line projections from the recent past through to the future give only the illusion of foresight. The call for a more dynamic approach is confounding because there is no learning presently available—nothing ready to wear, as it were—to give a greater temporal dimen-

evidence as a reasonable mind might accept as adequate to support a conclusion.”). Accordingly, substantial evidence “must do more than create a suspicion of the existence of the fact to be established [I]t must be enough to justify, if the trial were to a jury, a refusal to direct a verdict when the conclusion sought to be drawn from it is one of fact for the jury.” *NLRB v. Columbian Enameling & Stamping Co.*, 306 U.S. 292, 300 (1939).

⁶³ See generally Sidak & Teece, *supra* note 1.

⁶⁴ To assess the competitive significance of a restraint of trade, we were told in *Board of Trade of Chicago v. United States*, 246 U.S. 231, 238 (1918), a court must “consider the facts peculiar to the business to which the restraint is applied; its condition before and after the restraint was imposed; the nature of the restraint and its effect, actual or probable. The history of the restraint, the evil believed to exist, the reason for adopting the particular remedy, [and] the purpose or end sought to be attained, are all relevant facts.”

⁶⁵ Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 12 (1984).

sion to the analysis of a proposed merger or to the long-run effects of a business practice.

We have tried to show that antitrust analysis, as it is currently done, is not willfully ignorant of the limitations of static analysis; on the contrary, when reasonably confident predictions are available, they are readily incorporated into the analysis. Where prediction is little more than speculation, however, antitrust analysis leaves off. That is why potential competition cases, for example, are at present brought to stop mergers only where the potential competitor, though not already in the market, is clearly on the path to entry.⁶⁶

If we are correct about that, then we are probably correct as well about the implications of adopting anything like the current proposals for a more dynamic approach, whether they draw upon the literature of “strategic management” or upon “industry-specific studies” or upon some other source of insight. First, if an antitrust agency is to base enforcement decisions to any degree upon an extra-legal body of theory, then that theory must be capable of yielding determinate results. Second, the agency’s staff and its leadership will need, respectively, to master and to understand the field from which the theory is derived. Third, to the extent an antitrust agency bases its enforcement decisions upon predictions more bold than, or different in kind from, what can be supported by economic theory or empirical evidence, reviewing courts must develop their own capacity to question those predictions, to demand and to understand the evidence upon which they are based, and to insist upon consistency in the agency’s analysis from one case to the next. Judicial review will add nothing of value if courts are satisfied by an agency’s merely plausible account of the future of the relevant market, particularly if that account may be based upon premises different from those underlying another case and the difference goes unresolved.

Considering how much discretion an agency could acquire if it could justify its predictions as plausibly dynamic, it is a tribute to the professionalism of the leading competition agencies worldwide that they have proceeded with caution, incorporating predictions into policy only insofar as they are defensible. When an agency does venture to make more bold predictions, it will take an informed and intellectually curious judiciary to hold the agency to account.

⁶⁶ See Katz & Shelanski, *supra* note 15, at 68 (discussing Roche Holding Ltd., 113 F.T.C. 1086 (1990), *modified*, 1996 WL 116250 (Jan. 16, 1996)), where the FTC challenged such a merger because it “found strong evidence to support its predictions that . . . the relevant product market would develop” from R&D then underway at each firm and that both would be important competitors in that market); *cf.* United States v. Marine Bancorporation, Inc., 418 U.S. 602, 638 (1974) (concluding “the Government has offered an unpersuasive case on the first precondition of the question reserved in *Falstaff*—that feasible alternative methods of entry in fact existed”).

