

**Before the
FEDERAL TRADE COMMISSION & U.S. DEPARTMENT OF JUSTICE**

Horizontal Merger Guidelines
Review Project

Project No. P092900

**COMMENTS OF
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INTRODUCTION

1. We submit these comments to the Federal Trade Commission and the U.S. Department of Justice in their review of the Horizontal Merger Guidelines.¹ The Agencies ask, in Question 8: “Should the Guidelines be revised to explain more fully than in the current §1.521 how market shares and market concentration are measured and interpreted in dynamic markets, including markets experiencing significant technological change?” Our answer, which reflects our previous writings,² is clearly “yes.” The Merger Guidelines should embody principles that reflect dynamic competition rather than static competition.³

1. We acknowledge the financial support of AT&T Inc. However, the views expressed here are solely our own and should not be imputed to AT&T.

2. We particularly draw from J. Gregory Sidak & David J. Teece, *Dynamic Competition in Antitrust Law*, 5 J. COMPETITION L. & ECON (forthcoming 2009); Christopher Pleatsikas & David Teece, *New Indicia for Antitrust Analysis in Markets Experiencing Rapid Innovation*, in DYNAMIC COMPETITION AND PUBLIC POLICY (Jerry Ellig ed., Cambridge Univ. Press 2001); Howard A. Shelanski & J. Gregory Sidak, *Antitrust Divestiture in Network Industries*, 68 U. CHI. L. REV. 1 (2001); David Teece & Mary Coleman, *The Meaning of Monopoly: Antitrust Analysis in High Technology Industries*, 43 ANTITRUST BULL. 801 (1998); Raymond Hartman, David J. Teece, Will Mitchell & Thomas Jorde, *Assessing Market Power in Regimes of Rapid Technological Change*, 2 INDUS. & CORP. CHANGE 317 (1993).

3. For a similar assessment, see Michael L. Katz & Howard A. Shelanski, *Mergers and Innovation*, 74 ANTITRUST L.J. 1 (2007); Michael L. Katz & Howard A. Shelanski, “Schumpeterian” Competition and Antitrust Policy in High-Tech Markets, 14 COMPETITION 47 (2005), available at

2. In Part I of these comments, we discuss the differences between dynamic competition and static competition. Dynamic competition—fueled by new products, new paradigms, or new sources of supply that provide decisive cost advantages—is the most compelling form of competition. Merger enforcement should be sensitive to (1) preserving opportunities for such paradigm shifts, and (2) recognizing the potential for these paradigm shifts to render existing market power non-durable. Thus, high market shares of themselves should not be cause for concern in industries in which there has been a history of, or there is likely to be, paradigm-shifting competition. The ability of new firms or smaller incumbents to innovate and rapidly adopt new technologies enables them to disrupt the market and prevent firms with high historic shares from exercising market power. Further, a firm with a high market share in an industry characterized by dynamic competition may have that market share precisely because competition is working. Consequently, possession of that high market share by a merging party should not, without more, cause concern. Product differentiation complicates direct comparisons of products and may lead to incorrectly narrow market definitions and misleadingly high market shares.

3. In Part II, we discuss three versions of economic rent: Ricardian (scarcity) rents, Schumpeterian (entrepreneurial) rents, and monopoly rents. The Merger Guidelines should recognize that some sources of high margins (the difference between price and marginal cost) are competitively benign, or may even suggest that competition is strong. To conclude in these

http://www.law.berkeley.edu/institutes/bclt/pubs/shelanski/katz_Shelanski_Schumpeter__30Nov2006_final.pdf;
Michael L. Katz & Howard A. Shelanski, *Merger Policy and Innovation: Must Enforcement Change to Account for Technological Change?* 29 (Nat'l Bureau of Econ. Research, Working Paper No. 10710, 2004), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=583708.

circumstances that high margins (again, without more) are indicative of competitive concerns could discourage innovation and the welfare-enhancing benefits it brings to consumers.

QUALIFICATIONS

4. My name is J. Gregory Sidak. I am the chairman of Criterion Economics, L.L.C. in Washington, D.C. and the Ronald Coase Professor of Law and Economics at Tilburg University in The Netherlands. I am one of the two founding editors of the *Journal of Competition Law & Economics*, published by the Oxford University Press. My research concerns antitrust, regulation of network industries, innovation and intellectual property, and constitutional protections of property and private enterprise. I have testified in, or consulted on, many mergers in high-technology industries. I have testified before Congress on multiple occasions and have published six books and more than eighty articles in scholarly journals. Courts and regulatory commissions that have cited my writings include the Supreme Court of the United States, the European Commission, and the U.S. Court of Appeals for the D.C. Circuit. I was Deputy General Counsel of the Federal Communications Commission from 1987 to 1989, and Senior Counsel and Economist to the Council of Economic Advisers from 1986 to 1987. I have taught at the Yale School of Management and the Georgetown University Law Center and for thirteen years was a scholar at the American Enterprise Institute, where I held the F.K. Weyerhaeuser Chair in Law and Economics. I earned A.B., A.M., and J.D. degrees from Stanford University. Following law school, I served as Judge Richard A. Posner's first law clerk on the U.S. Court of Appeals for the Seventh Circuit.

5. My name is David J. Teece. I am the Thomas W. Tusher Professor of Global Business at the Haas School of Business at the University of California, Berkeley. My research concerns the theory of the firm and strategic management, the economics of technological change, knowledge management, technology transfer, and antitrust economics and innovation. I have also held teaching and research positions at Stanford University and Oxford University. I testified for Oracle in the government's case against the *Oracle-PeopleSoft* merger, in which the competitive significance of innovation figured prominently. I have also testified before Congress on regulatory policy and competition policy. I am the author of more than 200 books and articles and am the editor of the journal *Industrial & Corporate Change*, published by the Oxford University Press. My most recent book is *Dynamic Capabilities and Strategic Management: Organizing for Innovation and Growth* (Oxford University Press 2009). According to *Science Watch*, I am the lead author on the most cited article in economics and business worldwide, 1995–2005. I am also one of the top 10 cited scholars in economics and business for the decade, and have been recognized by Accenture as one of the world's top 50 business intellectuals. My research has been cited by the Supreme Court of the United States. I earned M.A. and Ph.D. degrees in economics from the University of Pennsylvania, B.A. and M. Comm. degrees from the University of Canterbury, and I have received four honorary doctorates.

I. DYNAMIC COMPETITION REQUIRES RETHINKING MERGER ENFORCEMENT

6. Dynamic competition is powered by the creation and commercialization of new products, new processes, and new business models. As Joseph Schumpeter said, competition fueled by the introduction of new products and processes is the more powerful form of

competition: “competition from the new commodity, the new technology, the new source of supply, the new type of organization—competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the output of existing firms, but at their foundations and their very lives.”⁴ Advocates of strong competition policy should favor merger enforcement policies that recognize and fuel dynamic competition, for static competition is anemic in comparison. When agencies rely on static competition principles, they accept less competition and lower consumer welfare than would result from policies favoring dynamic competition.

A. Static Competition

7. Static competition reflects an intellectual framework, less so a state of the world. Static competition manifests itself in the form of multiple providers of existing products offered at low prices. When firms introduce no new products, rapid price reductions driven by innovation do not occur. The constant churn of customers will be commonplace, and profits will be thin. Without innovation, all firms have the same technology and the same business models. Markets are in a comfortable but bland equilibrium. Prices are drawn down to the floor of long-run marginal cost; but that floor becomes their resting place. Firms earn only their cost of capital and cover long-run marginal costs, and consumers are bereft of new products and true bargains. Firms never overcharge customers (absent cartel behavior), but firms offer customers no exciting new products. Agents are nevertheless rational and well informed. Although this static framework has theoretical simplicity and elegance, the industrial dynamics are overlooked. Absent innovation, new entry is unlikely. If incumbents can satisfy demand, new entrants are not

4. JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY 8 (1942).

needed. Absent scale economies, no firm is likely to become dominant, and the ecology of firms does not change.

8. The static competition paradigm tends to govern antitrust economics as both an analytical and a normative paradigm. But that paradigm is not, and has never been, a good abstraction of the economy. Nor has that paradigm ever been a state to which we should aspire.

B. Dynamic Competition

9. Innovation drives dynamic competition—but not exclusively. The adjective “dynamic” is a shorthand descriptor for a variety of rigorously competitive activities such as significant product differentiation and rapid response to change, whether from innovation or new market opportunities ensuing from changes in taste or other forces of disequilibrium. Dynamic competition is in fact more intuitive and much closer to today’s everyday view of competition than is the stylized notion of static competition.

10. Many times innovation-driven competition has modified, if not overturned, the established order in an industry and has brought forth great price and nonprice benefits to consumers. The steamship enhanced competition in ocean transportation. Steam and sail competed side by side for decades. The great days of sail—the era of the clipper ships—occurred partly in response to competitive pressures from steamships. Likewise, vacuum tubes improved with competition from the transistor. Competition from refrigeration destroyed the ice-harvesting industry but brought massive cost savings and convenience to consumers. Technological innovation in aircraft jet engines marginalized internal combustion engines and destroyed many of the traditional aircraft manufacturers that were wedded to internal combustion engines. Electronics destroyed the typewriter. Industry after industry can demonstrate gains from dynamic

(innovation-driven) competition that overshadow the gains when competition is present but innovation is absent.

11. With dynamic competition, new entrants and incumbents alike engage in new product and process development and other adjustments to change. Frequent new product introductions followed by rapid price declines are commonplace. Innovations stem from investment in R&D or from the improvement and combination of older technologies. Firms continuously introduce product innovations, and from time to time dominant designs emerge. With innovation, the number of new entrants explodes, but once dominant designs emerge, implosions are likely, and markets become more concentrated. With dynamic competition, innovation and competition are tightly linked. Unyielding competitive forces defeat stagnation.

12. The model of dynamic competition recognizes that competition is a process in which entrepreneurs and entrepreneurial managers are important actors. Maintaining innovation depends upon the existence of entrepreneurs and the institutional structures and public funding that support innovation. Entrants introduce a large fraction of radical technologies into an industry. The advent of new technological ensembles or paradigms is usually marked by a wave of new competitors entering an industry to sustain success. Incumbents do, however, sometimes pioneer, and if they do not innovate, they are often able to imitate or improve on the entrants' products. The benefits of creative destruction may not come immediately; change can take time. Innovation drives competition, and competition in turn drives innovation.

13. Other complementary "models" of innovation exist. At their core, most accept an evolutionary theory of economic change and a behavioral theory of the firm. The methodological imperative of behavioral theory is that internal firm structure (not market structure) and internal

processes such as learning, diffusion, sensing, seizing, and reconfiguring affect the firm's behavior. Evolutionary theory draws attention to what went before. As Schumpeter said, "in dealing with capitalism, you are dealing with an evolutionary process."⁵

14. Static and dynamic views of competition have elements in common. Current law embraces both. Katz and Shelanski observe that "Judge Learned Hand wrote as early as 1916 that 'the consumer's interest in the long run is quite different from an immediate fall in prices' and spoke of competition as a 'proper stimulus to maintenance of industrial advance.'"⁶ In our view, however, when the courts have relied on economic theory to inform antitrust law, the law got a larger injection of static analysis than dynamic analysis. The Guidelines review process presents the opportunity to redress this imbalance.

15. Traditional static analysis in antitrust law focuses on the search for market power in defined product markets. Dynamic analysis views competition through a broader lens and focuses less on specific outcomes and more on process. Dynamic analysis favors maintaining rivalry but also protects property, including intellectual property. The working assumption in dynamic competition analysis is that intellectual property rights are desirable institutional or legal arrangements providing necessary appropriability mechanisms to advance and reward innovation. Dynamic analysis also recognizes that the benefits of dynamic competition do not arrive immediately; firms may need to tolerate some short-run (static) inefficiencies to support

5. See JOSEPH A. SCHUMPETER, *THE THEORY OF ECONOMIC DEVELOPMENT: AN INQUIRY INTO PROFITS, CAPITAL, CREDIT, INTEREST, AND THE BUSINESS CYCLE* 82 (1911).

6. Katz & Shelanski, "*Schumpeterian*" *Competition*, *supra* note 3, at 50 (quoting *United States v. Corn Prods. Ref. Co.*, 234 F. 964, 1012 (S.D.N.Y. 1916)).

innovation. Wooden antitrust policies that fixate on short-run efficiencies are likely to hurt innovation and thereby hurt competition.

16. In an antitrust policy that favors dynamic competition over static competition, merger enforcement of course proceeds, but proceeds more carefully. Because uncertainty and complexity are typically hallmarks of dynamic markets, policymakers should use the tools of static analysis sparingly, if at all, in these environments. Simple rules based on static analysis may well produce policy actions and judicial decisions that impede competition. In particular, policymakers should deemphasize the role of concentration analysis in merger enforcement. To prohibit mergers merely to manage concentration is unlikely to help consumers. More generally, merger policy should acknowledge that preserving a set number of competitors is not always better—the goal is not merely lowering price, but also protecting innovation.

C. Market Share

17. After a market has been defined, and the competitors in a market have been identified, the next step in traditional antitrust analysis is the computation of share. Plaintiffs in antitrust cases wish to make them high; defendants tend to point out that they are low. If a market is defined narrowly, it is more likely that shares will be high, and vice versa if the market is defined broadly.

18. However, the meaning of market share is a function of how one has defined the market. Define it too narrowly or too broadly, and a high or low share does not carry much information. Not everything that is in the market need be weighed equally in terms of constraining the power of the leading firm; not all that is excluded is irrelevant for explaining the constraints on the leading firm.

19. Market share is not the end of the story, particularly in high-technology industries characterized by dynamic competition. Many economists, drawing on their understanding of static contexts, tend to believe that a small share shows the absence of market power whereas a larger share indicates its presence. This latter conclusion, in particular, is frequently not the case where there is rapid innovation. (Our presumption here is that markets have been defined correctly.)

20. The more fundamental question is, what happens to the firms' business when (if) monopoly profits are sought? This question is traditionally analyzed through entry barriers, if not already analyzed in the market definition exercise when examining the supply-side response. Absent entry barriers, even a high level of concentration does not convey market power. This fact is commonly recognized in antitrust analysis. Thus a firm with a large market share in a relevant market may simply be efficient or innovative. It could be sustaining its position through lower prices or superior products or both. One should not for a moment necessarily infer market power from such a large share.

D. Product Differentiation

21. Product differentiation complicates direct comparisons of products and may lead to incorrectly narrow market definitions and misleadingly high market shares. Additional problems occur around the measurement and interpretation of market shares and market concentration. An erroneous market definition renders the HHI meaningless, even if one believes in structural analysis. Because competition in high-tech industries is often on the basis of features and functionality, product differentiation in these industries is frequently significant, and HHI analysis will overstate industry concentration levels if markets are defined with reference to

product differentiation. This could well lead analysts and the courts to erroneous conclusions about the nature and extent of competition in these industries and to policy errors concerning market definition and market power.

II. SCARCITY RENTS, SCHUMPETERIAN RENTS, AND MONOPOLY RENTS

22. To determine whether one is observing a firm exercising antitrust market power, one must analyze the nature of rents. Are they Ricardian (scarcity rents), Schumpeterian (entrepreneurial rents), or Porterian (monopoly rents), as we elaborate below? We would prefer to say, and we recommend that the Agencies revise the Merger Guidelines to provide, that a large market share and associated high profits are not of competitive concern if the source of the rents is Ricardian or Schumpeterian. Our position is analogous to the legal question as to whether a monopoly is acquired and maintained by superior skill, foresight, and efficiency. If it is, then antitrust jurisprudence recognizes it as a lawful monopoly. In contrast, a merger creates the risk of an unlawful monopoly if the merged firm would earn Porterian, or monopoly, rents.

A. Ricardian (Scarcity) Rents

23. In many contexts where knowledge and other specialized assets underpin a firm's competitive advantage, additional inputs cannot simply be purchased on the market to expand output. Hence, at least in the short run, a firm's output is limited by the available stocks of the scarce inputs. Over time, however, the firm can typically augment its stocks of scarce inputs, typically using the existing stock of idiosyncratic resources, because productive knowledge is not fully codified and labor inputs available on the market do not have the requisite firm-specific skills. This condition can be a major restraint on the firm's growth.

24. If the firm in question owns 100 percent of the world's supply of the unique input (for example, a unique engineering skill) and if the input is necessary to produce the output, the firm could be a (transitory) "monopolist" in the output market until it is able to expand the availability of such skills. It could fully use the constrained input, and yet still end up with price in the final product market being above cost. Although the firm might be regarded as a monopolist, its profits are scarcity rents properly attributed to the scarce input. The firm has no incentive to restrict output; but output is nevertheless below the "competitive" level—a hypothetical condition that would obtain if sufficient supplies of the scarce input were available. However, if the scarce input (here an engineering competence) were somehow to be broken up and distributed amongst a group of competitors, the price in the final product market would not decrease, and might well increase.⁷ In this case, the scarcity rent is simply the normal return to the scarce asset, and there is no efficiency loss to monopoly. Moreover, it is of course the existence of scarcity rents that engenders expansion of output through replication of the underlying skills.

25. In the context of scarce natural resources, like land or iron ore, scarcity rents tend to flow upstream to the owners of the scarce inputs. Profits to downstream firms then get competed away. However, when the scarce input is knowledge—embedded in a team—rents do not get bid away to the owners of the scarce inputs, for several rather subtle reasons. One is that

7. This outcome could result because valuable routines could be broken, and knowledge could be lost. *See* RICHARD NELSON & SIDNEY WINTER, *AN EVOLUTIONARY THEORY OF ECONOMIC CHANGE* (1982).

the market for know-how/knowledge is rather imperfect,⁸ so all the rents need not accrue to the owners of the scarce inputs, simply because the market is imperfect. Secondly, the productivity of knowledge assets may depend in part on the presence of certain co-specialized assets, the services of which must be employed for the knowledge assets in question to have value. This condition can prevent all of the rents from accruing to the scarce inputs themselves.⁹

26. To summarize, an innovating firm seeking to operate on a larger scale, but temporarily constrained by its stock of idiosyncratic resources, may have both a high market share and be highly profitable, but this profit in no way implies that it is exercising socially undesirable restraint over its output. It is likely that the innovator is simply collecting sufficient Ricardian rents to recover its initial investment and offer encouragement to other innovators and entrepreneurs.

B. Schumpeterian (Entrepreneurial) Rents

27. Other situations may generate supranormal returns that are also not properly regarded as monopoly rents. A firm may develop product and process innovations or unique business routines (knowledge assets), but these eventually are imitated by competitors. However, there may be a period of temporary excess returns enjoyed by the developer or owner of the knowledge assets in question. Once again, these returns are not monopoly rents, but rather Schumpeterian rents. As Sidney Winter has observed, “[l]ow investment and slow imitation spell

8. See David Teece, *The Market for Know-How and the Efficient International Transfer of Technology*, 458 ANNALS 81 (1981); David Teece, *Capturing Value from Knowledge Assets: The New Economy, Markets for Know-How, and Intangible Assets*, 40 CALIF. MGMT. REV. 8 (1986).

9. See David Teece, *Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy*, 15 RES. POL’Y 6 (1986).

greater financial success for the innovator.”¹⁰ In the absence of imitation, or in the absence of the fear of imitation, the innovating firm has significant control over the scale at which the innovation is implemented in the long run.

28. A number of factors prevent competitors from appropriating the rents from innovation instantaneously. An obvious one is that much of the knowledge at issue may be highly tacit, rendering the product or process difficult to imitate. Secondly, the knowledge at issue may not be observable in use, and so reverse engineering is not feasible as an imitation pathway. Furthermore, the process or product in question may enjoy a certain amount of intellectual property protection, rendering imitation more costly, and possibly impossible (in the case of a broad-scope patent), at least for a period of time.

29. Nevertheless, barriers to imitation such as these are almost always temporary, and afford the owner of knowledge assets a certain period of time within which to earn supranormal profits. These profits are the return to innovation (more specifically, they are a return to difficult-to-imitate knowledge assets) and are generally necessary to induce investment in the creation of such knowledge assets. Such rents are accordingly necessary and desirable, and their existence should not be a premise that there is market power in the context of merger enforcement.

C. Monopoly (Porterian) Rents

30. The type of rent that ought to be the target of antitrust concern stems from the naked exercise of market power by a firm. These circumstances might arise because of

10. Sidney Winter, *Four R's of Profitability: Rents, Resources, Routines, and Replications*, in *RESOURCES-BASE AND EVOLUTIONARY THEORIES OF THE FIRM: TOWARDS A SYNTHESIS* 147-77 (Cynthia Montgomery ed., 1995).

exclusionary conduct lacking efficiency justifications. Michael E. Porter has developed a theory of strategy around conduct designed to impair competition. He notes that “public policy makers could use their knowledge of the sources of entry barriers to lower them, whereas business strategist could use theirs to raise barriers.”¹¹ This form of rents might therefore be dubbed “Porterian rents” to emphasize that they arise from the anticompetitive exercise of monopoly power. In the context of innovation, anticompetitive conduct is extremely chancy as an efficacious strategy. New technology can change the price and performance profile of a product by several orders of magnitude, whereas anticompetitive conduct is likely to have at most a minor impact on the total scheme of things.

D. Level of Innovation and Likelihood of Monopoly Power

31. Indicia for defining high-technology markets must focus on competitive conditions and competitive activity. There must be an investigation of behavior and actions over a longer time horizon than the standard one to two years. Standard indicia, and particularly the hypothetical monopolist test, using the SSNIP (at or near a 5-10 percent level) will surely define markets too narrowly. If it is difficult to determine an appropriate SSNIP (whether the “P” is interpreted as “price” or “performance”) so that markets can be confidently defined, then one can endeavor to assess whether monopoly power exists by assessing:

- Innovative activity (for example, research and development expenditures and trends, product innovations and introductions, and performance enhancements).

11. Michael Porter, *The Contribution of Industrial Organization to Strategic Management*, 6 ACAD. MGMT. REV. 612 (1981).

- Competitive activity (for example, shifts in share, the impact of potential entry, shifts in customer purchases).
- Pricing responses and flexibility.

Where innovative activity is high, one should presume that monopoly power does not exist. If a firm can “price without regard to competition,” then why would it spend a large proportion of its revenues on R&D? High R&D spending relative to sales is generally an indication that participants view product performance as the ultimate arbiter of competitive strength. Furthermore, potential competition can also generally be assessed in such terms, as potential entrants attempt to match or even leapfrog existing technology to secure a foothold in the market. Under such circumstances, merger policy should not infer the existence of market power from high market shares.

III. CONCLUSION

32. We favor revision of the Horizontal Merger Guidelines in a manner that acknowledges the competitive characteristics of high-technology industries. As Question 8 suggests, a focus on dynamic competition is likely to be especially relevant to computing market shares and measures of market concentration in such industries. Schumpeterian competition, engendered by product and process innovation, does more than bring price competition—it tends to overturn the existing order. A revision of the Merger Guidelines that favors dynamic over static competition would place less weight on market share and concentration in the assessment of market power and more weight on assessing innovation and enterprise-level capabilities. Such a revision would substantially benefit consumers.

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