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Learning from the Past: The Lessons of Vietnam, IBM, and Tying

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With a major set of hearings scheduled in the United States on the antitrust treatment of single-firm conduct, economists have an opportunity to provide analysis that informs policy. Yet, the opportunity will be lost if economic analysis does not provide insights into how to distinguish anticompetitive from pro-competitive behavior. We argue that the economics literature on one type of single-firm conduct—tying—has been less influential than it should have been, and examine whether there are lessons to be learned from that failure. We argue that the two principal causes are 1) the almost complete neglect of competitive tying (while focusing heavily on anticompetitive tying) and 2) an excessive reliance on theory alone.

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I. Introduction

During the administration of Lyndon Johnson, the United States undertook two major conflicts that lasted much longer than anticipated, ended in withdrawal in the face of defeat, and left it reluctant for decades to exercise its powers. One conflict was Vietnam; the other was the monopolization suit against IBM. Just as, several decades later, the United States did overcome the "Vietnam Syndrome" and sent its troops abroad, the U.S. antitrust authorities have resumed challenges of dominant-firm conduct. Within the last decade, the U.S. Department of Justice (DOJ) has brought such suits against Microsoft,[1] American Airlines,[2] and the Visa and Mastercard networks,[3] to name a few.

Continuing with the Vietnam analogy, virtually everyone agrees on the importance of learning the "lessons of Vietnam." As is evidenced by debates over whether the choice and conduct of current conflicts demonstrate learning from, or repetition of, past mistakes, exactly what those lessons are is less clear. Similarly, the antitrust community went through an attempt to learn what might be termed "the lessons of IBM," recognizing that IBM, flawed as the case was, is synecdoche for a problematic history of monopolization, monopoly leveraging, and monopoly maintenance cases.[4] With the revival of cases about the behavioral limits on a firm with a dominant market share, agency-sponsored analyses are, or soon will be, occurring on both sides of the Atlantic. In the United States, Federal Trade Commission (FTC) Chairman Deborah Platt Majoras and DOJ Assistant Attorney General Thomas Barnett have announced a major set of hearings on Section 2 of the Sherman Act.[5] The European Commission has recently released a report on Article 82 that broaches many of the same issues.[6] In these assessments, a good overarching question to ask is whether we have learned the lessons of IBM.

A proposition that is almost as widely held as the necessity of learning the lessons of Vietnam, is that antitrust enforcement must be informed by solid economic analysis. The examinations of policy toward unilateral conduct provide economists with an opportunity to provide useful input. Law enforcers without

1 United States v. Microsoft Corporation, 253 F.3d 34 (D.C. Cir. 2001) [hereinafter *Microsoft*].

2 United States v. AMR Corporation, 335 F.3d 1109 (10th Cir. 2003).

3 United States v. Visa U.S.A., Inc., 344 F.3d 229 (2nd Cir. 2003).

4 Franklin M. Fisher et al., Folded, Spindled and Mutilated: Economic Analysis and U.S. vs. IBM (1983).

5 Press Release, U.S. Federal Tqrade Commission, FTC and DOJ to Host Joint Public Hearings On Single Firm Conduct as Related to Competition (Nov. 28, 2005), *available at* http://www.ftc.gov/opa/2005/11/unilateral.htm.

6 European Commission, DG Competition discussion paper on the application of article 82 of the treaty to exclusionary abuses (Dec. 2005), *available at* http://europa.eu.int/comm/competition/antitrust/others/discpaper2005.pdf.

formal training in economics recognize the inherent difficulty of distinguishing abusive behavior from either aggressive competition or legitimate strategies to reap the rewards of legally obtained market power, and appear eager for economists to provide insights that lead to practical legal rules. There is no guarantee, however, that the economics profession will capitalize on this opportunity. Indeed, we believe that before giving the advice that will be solicited on single-firm conduct, economists should do their own reckoning of the past. Have antitrust authorities and courts made bad decisions because they ignored the clear, sound advice from the economics profession, much as Lyndon Johnson ignored advice that escalating the war without raising taxes at a time of full employment would likely lead to inflation? Or have economists simply failed to provide law enforcers with the analysis they need to make good decisions?

Law enforcers want clear, simple rules. Judge (and Professor) Frank Easterbrook has advocated the use of basic filters to evaluate particular forms of conduct under the antitrust laws, and Professor Richard Epstein has proposed the use of simple rules in law enforcement.[7] Building on these insights, case filters in the form of "simple rules" might be particularly attractive for use in the evaluation of unilateral conduct. Simple rules would tend to reduce the degree of antitrust-specific business uncertainty that deters efficiency-enhancing unilateral behavior, and thereby promote social welfare.[8] Moreover, simple rules would cabin judicial discretion and thereby reduce the costs and uncertainty associated with judicial evaluation of unilateral business conduct.

Arguably, the model of a simple rule in the Section 2 context is the U.S. Supreme Court's *Brooke Group* holding[9] that required a showing of both (1) below cost pricing and (2) the likelihood of recoupment to support a finding of single-product price predation. Notably, the *Brooke Group* rule has eliminated a great deal of costly litigation and has reduced business uncertainty in one area of conduct. *Brooke Group* does not eliminate all false acquittals—indeed, various theoretical economic models demonstrate how, given certain assumptions, above-cost single-product price cuts can be anticompetitive.[10] Implicit in the

7 *See* Frank Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1 (1984) (*reprinted in* 1 Competition Pol'y Int'l 179-215 (2005)). More generally, Professor Richard Epstein advocated the use of simple legal principles to improve the treatment of complex problems in modern society (problems that typically have been dealt with by very complex legal regimes). *See* RICHARD EPSTEIN, SIMPLE RULES FOR A COMPLEX WORLD (1997).

8 Although collaborative conduct involving competitors also might benefit from the application of simple rules, such norms are even more important in the context of single firm conduct. Restrictive joint behavior is more likely to have pernicious effects on competitive rivalry than unilateral behavior, undertaken by a firm that is seeking to outdo its rivals.

9 Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209 (1993) [hereinafter *Brooke Group*].

10 For a general discussion of above cost predatory pricing scenarios, *see*, *e.g.*, A. Edlin, *Stopping Above-Cost Predatory Pricing*, 111 YALE L.J. 941 (2002).

Brooke Group standard, however, is the assumption that any harm stemming from a failure to prosecute the rare legitimate predation case is more than outweighed by the benefits of avoiding unsound enforcement actions and costly business uncertainty that would occur in the absence of this simple rule.[11] Simple rules can be desirable even if they do not yield the correct result in every case in which they are applied—they merely need to satisfy the criterion that overall welfare will be higher in the presence of the rule than in its absence.[12]

The challenge for economists is to help formulate rules that are, to quote Einstein, "as simple as possible, but no simpler." Doing so might be relatively easy for some types of cases. An example might involve a firm's manipulation of government processes to delay or deter entry (as in the FTC's *Orange Book* cases[13]) or otherwise obtain market power (as in *Unocal*[14]). Another example might be a firm's commission of intentional torts that appear to allow it to obtain or maintain market power. In both those categories, the conduct would appear to be "always or almost always" inefficient, and thus, unlikely to yield false positives and deter welfare-enhancing conduct. The "cheap exclusion" framework (referring to behavior that lacks any plausible efficiencies and is relatively inexpensive to undertake) developed by former FTC official Susan Creighton and colleagues[15] is a methodology that subsumes these examples. It suggests a way of developing simple rules to condemn behavior based on the behavior's lack of efficiency justifications and relatively low costs to the alleged predator.

Of course, it is the harder classes of practices, such as tying and exclusive dealing, where law enforcers are most in need of help from economics. The practices are widely used and are usually efficiency-enhancing, but in some situations, their primary purpose may be to contribute to monopoly maintenance rather

11 Per se prohibitions, such as the per se rules against naked horizontal price fixing, also implicitly assume that the error costs stemming from those rules (in those cases, the harm from rare false positives) are more than outweighed by the rules' benefits (deterrence of harmful behavior and ease of administration).

12 Using the somewhat more abstract language of decision theory, the objective in formulating simple rules is to minimize the sum of expected error costs and enforcement costs.

13 For a more detailed description of these cases, *see* Bureau of Competition, U.S. Federal Trade Commission, Overview of FTC Antitrust Actions in Pharmaceutical Services and Products 3-4 (Jun. 2005), *available at* http://www.ftc.gov/bc/050802antitrustpharmprods.pdf.

14 For a more description of this matter, *see* Statement of the Federal Trade Commission in the Matter of Union Oil Company of California, Docket No. 9305, and Chevron/Unocal, File No. 051-0125 (Aug. 2005), *available at* http://www.ftc.gov/opa/2005/06/chevronunocal.htm.

15 *See* Remarks by Susan Creighton (at the time, FTC Bureau of Competition Director), *Ranking Exclusionary Conduct,* ABA Section of Antitrust Law Fall Forum, Nov. 15, 2005, *available at* http://www.ftc.gov/speeches/creighton/051115conduct.pdf.

than to generate efficiencies, as the courts concluded in *Microsoft*[16] *and* Dentsply.[17] The challenge is how best to distinguish, albeit imperfectly, anticompetitive instances of these practices from those that are pro-competitive or at least competitively neutral.[18] There is a presumption that these practices are also per se legal for firms without market power. While, for firms with market power, per se legality would be simple, but it is too simple.

In these situations where law enforcers need something more nuanced than per se rules to ascertain when behavior is likely to be anticompetitive, economists should acknowledge that the existing economics literature falls short of giving law enforcers what they need. An important source of the problem is that the modern economics literature on single-firm conduct starts from the assumption that a firm has market power and then analyzes if and when certain behavior could be anticompetitive. That analysis is an essential piece of the puzzle, but it does not address the question of whether the conduct is also consistent with competitive behavior and, if so, how to distinguish among competing explanations for the behavior. Greater attention to competitive behavior will be necessary if economists are to provide law enforcers with what they need. Relatedly, greater attention should be paid to the relative error costs of permitting anticompetitive conduct and of chilling efficient conduct.

Greater attention to competitive behavior will be necessary if economists are to provide law enforcers with what they need.

Another striking feature of the existing literature is how theoretical it is. The appropriate mix of theoretical and empirical investigation is, of course, a complicated issue. Any interpretation of evidence rests, explicitly or implicitly, on some theory or model. It would make no sense, therefore, to suggest that we abandon theory and just look at the facts. Yet, theory unbridled from empirical observation is equally problematic. There are two principal reasons why, we believe, the theoretical nature of the existing literature has limited its usefulness. First, much of the theory about unilateral conduct by a firm with market power is sufficiently abstract that it is hard to know how to match the theory to the facts of any particular situation. We mean this point more as observation than criticism. Understanding some types of behavior at a theoretical level is very complicated. Nonetheless, economists need to acknowledge that much of the existing work remains at too rudimentary a stage to be of practical use. Second, firms without market power sometimes take the same sorts of actions

16 *Microsoft*, *supra* note 1.

17 United States v. Dentsply International, Inc., 399 F.3d 181 (3rd Cir. 2005) [hereinafter *Dentsply*].

18 Timothy J. Brennan, Saving Section 2: Reframing Monopolization Law (AEI-Brookings Joint Center for Regulatory Studies, Related Publication 05-27, Dec. 2005), *available at* http://www.aei.brookings.org/admin/authorpdfs/page.php?id=1202.

that create antitrust problems for firms with dominant shares. The abuse of market power cannot be a reasonable motive in these cases, so an alternative explanation must exist. By itself, this does not justify a conclusion that the effects of the actions when taken by a firm with market power are the same as when they are taken with a firm operating in a competitive market. The baseball player Yogi Berra, who had a penchant for sayings that were simultaneously trivial and wise, famously said, "You can observe a lot just by looking." If economists increase the attention they devote to understanding competitive behavior, observations on firms without market power might be a more fruitful starting point than theoretical models of competition.

In the following section, we make these points—the need to understand competitive behavior, the potential for doing so empirically, and the limits of what we learn from existing theory—with respect to one class[19] of tying behavior, an area that has played prominently in recent cases and where we believe the economics literature has been deeply flawed. Just as formulators of foreign policy must learn the lessons of Vietnam and antitrust practitioners must learn the "lessons of IBM," we believe that antitrust economists should learn the "lessons of tying."

In using this term, we are of course suggesting that for antitrust economists, the tying literature should be viewed as a fiasco on the order of Vietnam or the IBM case. That the literature is problematic might not be evident to all readers, and even if it is, the comparison to Vietnam might seem melodramatic. Yet, when the *Journal of Economic Perspectives* published a symposium on the *Microsoft* case, it contained an article by Michael Whinston, arguably the leading expert on the economics of tying, which said, in essence, that economists do not understand much about tying.[20] We agree with his assessment, and we suggest that antitrust economists should view it as an admission of collective failure from which lessons need to be learned. In Section III, we turn to other types of tying, including bundled discounts. In the wake of *LePage's*,[21] this has become an unsettled aspect of antitrust law. We offer some suggestions for how to avoid the mistakes of the previous tying literature with respect to bundled discounts. In Section IV, we offer suggestions for useful economic analysis related to single-firm conduct more generally. Section V contains some brief concluding comments.

19 Below, we will argue that legal tying doctrine applies to a variety of cases that need to be distinguished.

20 Michael D. Whinston, *Exclusivity and Tying in U.S. v. Microsoft: What We Know and What We Don't Know*, 15 J. Econ. Persp. 63 (Spring 2001).

21 LePage's Inc. v. 3M, 324 F. 3d 141 (3rd Cir.) (*en banc*), cert. denied, 542 U.S. 953 (2004) [hereinafter *LePage's*].

II. From *Loew's* to *Microsoft* – The Role of Economics

Microsoft[22] was the culmination of the failure of the economics literature on tying. Microsoft's decision to include a web browser in its operating system was central to a case in which the DOJ ultimately sought to break up a firm that, at the time, had the largest market capitalization in the world. We believe that the economics literature was not of great help in clarifying the issues surrounding the tying claim, and it is this failure that creates the need to learn the lessons of tying. The roots of how the economics literature went astray are in *Loew's*.[23] The business practice at issue was the block booking of movies, which in effect tied a studio's B-rated movies (like *Getting Gertie's Garter*) to its A-rated movies (like *Gone with the Wind*). George Stigler's (1968) analysis of the case is widely viewed as a seminal article on bundling and tying.[24] One criticizes Nobel Laureates, particularly one as widely revered as George Stigler, at one's peril. Yet, in assessing where a body of literature went awry, we need to assess the first, seminal steps. Stigler cannot be blamed for the failure of others to correct the course, but the problems that have limited the usefulness of the tying literature are evident in his analysis.

A. *LOEW'S* AND THE ECONOMIC ANALYSIS OF BUNDLING

Prior to Stigler's analysis, the presumption was that tying was a way of leveraging market power from one good to another good for which the market was inherently more competitive. Stigler questioned the conventional wisdom about leveraging and posed an alternative explanation based on a simple numerical example that is worth repeating here. He hypothesized two movies (X and Y) to be licensed to two movie theaters (I and II). Theater I was willing to pay $8,000 for X and $2,500 for Y. Theater II was willing to pay $7,000 for X and $3,000 for Y. Stigler observed that with simple pricing, the distributor would have to charge $7,000 for X and $2,500 for Y, yielding total revenue of $9,500 per theater. By tying the two together, however, it could charge $10,000 for the package.[25]

Stigler's analysis served a useful purpose by posing a fundamental question: What did tying accomplish that could not be accomplished with simple monopoly pricing? Any theory of monopoly leveraging must come to grips with this very basic question. Still, even making due allowance for the proposition that pathbreaking analyses require elaboration and refinement, there is much to crit-

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22 *Microsoft*, *supra* note 1.

23 United States v. Loew's Inc., 371 U.S. 38 (1962) [hereinafter *Loew's*].

24 George J. Stigler, *A Note on Block Booking, in* THE ORGANIZATION OF INDUSTRY 165 (1968).

25 *Id.* at 165-170.

icize in Stigler's analysis of this problem. The role of economic theory in a problem such as this one is to strip away inessential details to bring the most important features into sharp relief. For a variety of reasons, Stigler's analysis did not get to the heart of the matter.

First, the analysis ignored the distinction between tying and bundling. Bundling is the sale of two goods in combination that could be sold separately. By itself, selling a bundled product does not preclude selling the components separately—the practice now known as mixed bundling. The issue in *Loew's* was tying, not bundling. While the result in Stigler's example was that tying would occur, the underlying assumptions were not rich enough[26] for mixed bundling to be a very interesting strategy.

Second, the link between the assumptions of the example and the facts of the case were tenuous. The example is, at best, a logically possible explanation for why firms might tie two goods that could be sold separately rather than a compelling explanation for why movie distributors tied the particular movies that they did.

Third, the explanation was based entirely on demand and not at all on costs. This problem is related to the previous one, as Stigler's explanation showed little appreciation for the economics of film production, film distribution, and film exhibition and the relationship among the different stages.

B. TYING AND *MICROSOFT*

Subsequent developments in the literature on bundling and tying addressed some but not all of these problems. The distinction between mixed bundling and pure bundling emerged relatively quickly.[27] As a fairly general proposition, mixed bundling generates higher profits than pure bundling if bundling does not affect costs.[28] To be sure, the optimal prices under mixed bundling can entail charging a premium for the bundle. If nothing prevents customers from buying all the components separately, then mixed bundling might not be a feasible strategy. One might imagine a theory of tying based on those cases where the optimal mixed bundle would entail a premium for the bundle, although it is not clear that pure bundling would dominate selling the components separately in these cases.

26 The problem is that with mixed bundling, there are three distinct products; and any interesting theory of mixed bundling would predict positive demand for all three. With only two customers in the model, there cannot be three distinct buying patterns.

27 Walter J. Adams & Janet L. Yellen, *Commodity Bundling and the Burden of Monopoly*, 90 Q. J. Econ. 475 (1976). Mixed bundling is the practice of selling the goods separately and in bundled form with a discount for the bundle. Pure bundling means that the firm sells the goods only in bundled form.

28 R. Preston McAffee, John McMillan & Michael D. Whinston, *Multiproduct Monopoly, Commodity Bundling, and Correlation of Values*, 104 Q. J. Econ. 371 (1989).

Michael Whinston (1990) put forward the first model generally accepted by economists as a logically consistent theory of anticompetitive tying when prices are not regulated.[29] He posited a two-product firm with a monopoly over one of the goods it sells. In the other good, which is produced with increasing returns to scale, it faces potential competition from an entrant. Whinston showed that by tying the two goods together, the two-product firm could, as a matter of theory, deny the entrant adequate scale and keep it out. The article was fundamental in pointing out the limitations of the single-monopoly profit theorem. Yet, as Whinston was careful to point out, the practical implications of the model were not clear. In the tradition of modern industrial organization theory, Whinston's article laid bare the broad outlines of a logically sound case that tying could be anticompetitive. Yet, like much basic research, it left for others a great deal of development work to flesh out how to apply the model in practice.[30]

One of the striking features of the *Microsoft* case is the prominent role that tying played. This was likely the result of legal doctrine, not economic analysis. For a firm with market power in the tying good, tying remains a per se violation.[31] One cannot know for sure whether the government would have presented its case differently if the legal standards for tying were more similar to related practices, but it seems plausible that it would. The key question economists should be asking about the tying claims in *Microsoft* is whether economists successfully laid out the economics of the tying claims.

One might argue that they did. Many discussions of tying point out that tying is a common occurrence that, in most instances, lowers costs or provides convenience.[32] Moreover, even the new theory sometimes taken as support for the case, such as that found in Carlton and Waldman (2002),[33] suggests an implicit recognition of the need to distinguish the specific tying at issue in the case from most tying. The nature of this analysis was to extend the basic logic of Whinston's article[34] to assumptions that more nearly resembled the setting of the case.

29 Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 Am. Econ. Rev. 837 (1990).

30 For a more detailed discussion of the Whinston models and its practical limiatations, *see* Keith N. Hylton & Michael Salinger, *Tying Law and Policy: A Decision-Theoretic Approach*, 69 Antitrust L.J. 469 (2001).

31 Jefferson Parish Hospital District No. 2 et al. v. Hyde, 466 U.S. 2 (1984).

32 Barry Nalebuff, Bundling, Tying, and Portfolio Effects 46 (DTI Economics Paper No. 1, Part 1 – Conceptual Issues, Feb. 2003).

33 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).

34 Whinston, *supra* note 29.

We believe that this assessment of the economics literature paints far too flattering a picture. The role of economic analysis in antitrust (and in general) is to focus on the most important aspects of a problem. In this regard, we believe that the economics literature on tying missed essential elements of the sort of tying in question in *Microsoft*. Even when the economics literature has acknowledged efficiencies from tying, it has failed to make the fundamental distinction between efficiencies of bundling and efficiencies of tying. Efficiencies of bundling are cost savings or convenience that arise from providing a bundled product to people who want all the components. The prototypical example is shoes. Virtually everyone who wants shoes wants them in pairs,[35] and it is obviously cheaper to provide them in pairs than it is to sell them separately. Efficiencies of tying are more subtle. One must consider why it is efficient **not** to provide the individual components to those who want just some of them rather than ask why it is efficient to provide a bundle to people who want all the components. The fact that shoes are chosen as the example to illustrate the efficiencies of bundling/tying suggests that this distinction has not been adequately appreciated. Virtually no one wants to buy right and left shoes separately. One can, of course, pose the question of why someone who lost his right shoe could not replace it without buying an entire pair. In the context of that example, the question sounds more philosophical than practical.

ONE MUST CONSIDER WHY IT IS EFFICIENT **NOT** TO PROVIDE THE INDIVIDUAL COMPONENTS TO THOSE WHO WANT JUST SOME OF THEM RATHER THAN ASK WHY IT IS EFFICIENT TO PROVIDE A BUNDLE TO PEOPLE WHO WANT ALL THE COMPONENTS.

To understand the efficiencies of tying, one must recognize that tying represents a choice to offer a subset of the products that a firm could conceivably offer. An efficiency explanation for such a decision must rest on a cost of product offerings. There is an old literature in economics on product selection that poses the question of whether the set of products offered by the market is the optimal set.[36] To get at the essence of that problem, it is standard in that literature to assume a fixed cost of each product offering. We are not aware of anyone suggesting that the product selection literature and the assumptions underlying it are relevant for tying analysis until recently.

35 Mark Frankena has pointed out to us that there is indeed a market for single shoes. Yet, with the exception of Birkenstock, from which individual shoes can be ordered specially, the rest of the market seems to be from resellers that untie the tied offerings generally available. *See Birkenstock Express special orders for extended sizes and single shoes and sandals*, *at* http://www.birkenstockexpress.com/Services/specialorders.cfm/topnav2.256 (last visited Jan. 30, 2006) and *NLLIC ACA Fact Sheet: Mismatched and Single Shoes*, *at* http://www.amputee-coalition.org/fact_sheets/oddshoe.html (last visited Jan. 30, 2006).

36 Avinash K. Dixit & Joseph E. Stiglitz, *Monopolistic Competition and Optimum Product Diversity.*, 67 Am. Econ. Rev. 297 (1977) and Michael A. Spence, *Product Selection, Fixed Costs, and Monopolistic Competition* , 43 Rev. Econ. Stud. 217 (1976).

Even Carlton and Waldman[37] address only the issue of whether the tying of the browser to the operating systems could, as a theoretical matter, be monopoly extention. The article does not address the question of how to tell whether the tie was a response to competitive pressure rather than an effort to thwart it. If we are to distinguish anticompetitive tying from competitive tying, we need to understand competitive tying better than we do. Observing tying under competition would seem to be a productive way to start.

In joint work with David Evans (2005),[38] Salinger has made much of the example that electrical plug adapters are sold at a variety of outlets only in packages of four different adapters, effectively forcing people to buy adapters they do not want to obtain the one that they do.[39] In terms of the total amount of commerce involved, the example is trivial. Yet, the economics literature on tying did not provide a compelling explanation for why the adapters were not sold separately. Certainly, the case seemed different from shoes. By focusing on the adapter, we developed a theory of competitive tying that went beyond the casual observations in the literature that of course much tying is to save costs or provide convenience. In particular, the theory led to two key insights. First, to understand competitive tying, one needs to understand the scale economies associated with each individual product offering, recognizing that a firm selling a bundle of two products as well as the two products separately is selling three distinct products. Without a fixed cost (or, more generally, a scale economy) associated with each product offering, a competitive firm's refusal to sell components separately to those who do not want all the components of a bundle makes no sense. Second, once one recognizes the fixed costs associated with individual product offerings, tying can arise under competition in circumstances that had not been acknowledged previously (at least in the formal economics literature). There had been a presumption that competitive tying would occur when everyone (or virtually everyone) wanted all the components. When fixed costs of product offerings are taken into account, however, tying can occur even if no one wants all the components. Companies might tie in order to meet the needs of diverse customers with a single product.

Once this possibility is pointed out, it is obvious that such tying is common. No one reads all of the morning newspaper and few households watch every channel they receive as part of their cable television package. If one objects that these services are not competitively supplied, plenty of competitive examples

37 Carlton & Waldman, *supra* note 33.

38 David S. Evans & Michael Salinger, *Why Do Firms Bundle and Tie? Evidence from Competitive Markets and Implications for Tying Law*, 22 Yale J. on Reg. 37 (2005).

39 Originally, we focused on the package available at RadioShack. Interestingly, it now offers a package that eliminates (or at least substantially reduces) the extent of tying. RadioShack sold the package of four adapters without selling all the individual adapters separately for at least several years, and the tying was not limited to RadioShack.

exist as well. Few university students take advantage of every service that tuition entitles them to. No one rides every ride at amusement parks that charge a lump sum admission rather charging for each ride.

At the trial in *Microsoft*, there was testimony from customers who would have preferred that Microsoft's operating system, Windows, not include its web browser application, Internet Explorer.[40] While such testimony might have been useful to satisfy the legal standard that the operating system and browser were separate products, such testimony could not possibly have done much to suggest that the tie was anticompetitive. Such a conclusion would rest on the presumption that when tying occurs in competitive markets, consumers do not end up purchasing components or product features that they would prefer to do without. That simply is not the case.

We believe that the adapter example led to important insights about tying. Perhaps that claim is immodest (for one of us), but we risk that appearance to make a more general point about the literature. Simple observation could have such high marginal value because there has been too little effort devoted to observation (and, we would suggest, too much devoted to theory). This, in our view, is one of the most important lessons of tying, and it is a lesson that must be learned with respect to other aspects of single-firm conduct if we are to avoid similar problems in our analysis of those practices.

III. *LePage's* and Bundled Discounts

A case of considerable recent interest is *LePage's, Inc. v. 3M*.[41] The defendant, 3M—the manufacturer of Scotch Tape—had a dominant market share in the market for transparent tape and sold other products as well. The plaintiff, LePage's, was the principal alternative supplier of private label transparent tapes. One of 3M's other products was private label tape that competed with LePage's offerings. At issue in the case was 3M's pricing practices whereby customers could obtain discounts on 3M products based on purchase volume and growth targets on a wide range of 3M products. Failure to meet the target in any one product line resulted in forfeiture of the entire rebate, irrespective of sales and growth in other product lines. Since one of the qualifying product lines was 3M's private label adhesive tape, the price retailers paid for 3M's branded tape depended on the quantity of 3M's private label tape that it purchased. LePage's attributed its decline in share of the private label "market" (from 88 percent to 67 percent) to 3M's bundled discount.[42]

40 United States v. Microsoft Corp. 87 F. Supp.2d 30, 48-49 (D.D.C. 2000).

41 *LePage's*, *supra* note 21.

42 Sales of private label transparent tape comprise only a small portion of the total U.S. transparent tape market.

LePage's alleged that 3M's bundled rebate program constituted unlawful monopolization in violation of Section 2 of the Sherman Act. A jury found for LePage's on its Section 2 claim and awarded nearly US$23 million in damages (US$69 million trebled).[43] A three-judge panel of the U.S. Court of Appeals for the Third Circuit reversed with one judge dissenting. Subsequently, after an en banc rehearing, the Third Circuit vacated that decision and affirmed the district court with the author of the earlier panel decision now dissenting.

The antitrust perspective on bundled discounts remains a matter of dispute. Relying on *Brooke Group*,[44] 3M argued that as a matter of law, above-cost pricing, no matter what its exclusionary effect, cannot make out a claim under the Sherman Act. In this case, although 3M may have forsaken some short-term profits as a result of its awards of rebates, at no time were its sales unprofitable (i.e., below cost). Therefore, according to 3M, there could be no proof of injury to competition.

The court rejected this argument and found that, even if above-cost pricing is not generally unlawful, *Brooke Group* applies only where the claim is predatory pricing by a monopolist.[45] In this case, according to the court, the challenged conduct was exclusionary irrespective of its not being predatory. Citing Areeda and Hovenkamp for authority, the court chose to analogize 3M's bundled rebate programs with "tying" where the anticompetitive effects are in the form of foreclosure of rivals. In so doing, the court eschewed a pure pricing analysis, and instead relied on its earlier opinion in *SmithKline Corp. v. Eli Lilly & Co.*[46] In both cases, the court found that the defendants' bundled rebates reflected an exploitation of (otherwise legal) monopoly power by linking a product that faced competition to a product that did not.

The dissenting judge argued that, absent a showing of below-cost pricing, the evidence must show some other basis for the Section 2 violation and that the evidence in *LePage's* did not do this. Among the factual matters he deemed relevant were plausible business justifications for the rebate programs based on distributional efficiency.

This is precisely the sort of issue where clarification from economists could be of help. Just as the courts have struggled with how to view bundled discounts,

43 U.S. antitrust law allows private parties to sue for treble damages.

44 *Brooke Group*, *supra* note 9.

45 *LePage's*, *supra* note 21, at 151-52.

46 SmithKline Corp. v. Eli Lilly & Co., 575 F.2d 1056 (3d Cir. 1978).

economists have debated the issue.[47] Without prejudging the answer, let us offer some suggestions on fruitful lines of inquiry that will reduce the chances that the bundled discount literature will suffer from the same problems as the tying literature. First, analogies to other kinds of practices are of some—but limited—use. The practice is related to predatory pricing in that some way is needed to distinguish the bundled discounts that might be objectionable from non-linear pricing schemes that are not. A natural cut-off to consider is that when the entire discount is applied to one of the goods, then the price for the good is below incremental cost. For the remainder of this paper, we refer to this situation as "extreme bundled discounts." The similarity of that cut-off to standards for predatory pricing does not, however, mean that such cases should be tried under predatory pricing doctrine. In particular, if one could show that the practice is inherently profitable, as may be possible,[48] then it should not be necessary to demonstrate the plausibility of subsequent recoupment, as is the case in a standard predatory pricing claim.

Similarly, the observation that the practice is like tying is both true and of only limited help. Literal tying requires that a company refuse to sell one product without another. Even when companies do not literally tie, their pricing can create a virtual tie if buying one product without another is not an economically viable option. Extreme bundled discounts can be virtual ties. While, from a purely legal standpoint, that might be useful for understanding how current law might be applied to such a case, it is of little use for clarifying what antitrust policy toward extreme bundled discounts should be. The problem is that legal tying doctrine applies to a wide variety of cases that should be viewed as economically distinct.

For example, the analysis of tying behavior discussed in Section II above applies to cases when the seller charges a single combined price for two or more goods. The essence of the decision is not to charge separately for one and perhaps all the component goods. Another class of tying concerns systems consisting of a durable (like a camera) and a consumable (like film).[49] A common term, "tying," is used for both cases, but the practices are much different. In durable/consumable cases, the two goods are sold (and charged for) as distinct items, so tying does not save the cost of one or more product offerings. There might well be efficiency rationales for tying in these types of cases, such as the

47 Patrick Greenlee, David Reitman, & David S. Sibley, An Antitrust Analysis of Bundled Loyalty Discounts (Economic Analysis Group, Working Paper No. EAG 04-13, Oct. 2004), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=600799.

48 With bundled discounts, the undiscounted price might not be one that the seller wishes to charge. Thus, the discount cannot be considered a profit sacrifice the same way prices below marginal cost can be in standard predatory pricing.

49 Michael Salinger, *Business Justification Defenses in Tying Arrangements (2005)*, *in* Issues in Competition Law and Policy (Wayne D. Collins ed., forthcoming 2006).

desire to avoid assessing blame for the failure of a system comprised of parts sold by different suppliers, but those efficiencies are different from those in the adapter (or newspaper) examples.

In at least one way, bundled discounts are more similar to this latter type of tying in that the products for which the bundled discount applies are priced as separate products. Retailers are able to vary the amount of branded and unbranded tape they purchase, and they pay distinct (discounted) prices for each. That said, neither the plausible efficiency nor the pricing consequences of bundled discounts are similar to the durable/consumable case.

Game theoretic analyses of bundled discounts, such as that in Greenlee and Reitman (2004),[50] help somewhat, but they may be of more interest to economists than to law enforcers. If, in a case like *LePage's*, the marginal price for one of the goods is below variable cost, we expect that courts will find the pratice inherently suspect regardless of whether economists can justify the practice as a Nash equilibrium strategy.

What would be far more useful to law enforcers is evidence of bundled discounts by firms operating in competitive markets, if indeed such evidence exists. If the practice is more widespread than is commonly believed, that should not make the practice per se legal. Observations of the practice under competitive conditions should, however, provide an opportunity to understand any efficiency motivations. As extreme bundled discounts typically arise in sales by manufacturers to retailers, they are harder to observe than the tying of products sold to final consumers. Thus, economists will need cooperation from firms that have such pricing policies to get the information they need to provide the analysis policymakers want. To the extent that firms want to engage in extreme bundled discounts and want to make the case in the upcoming Section 2 hearings that antitrust law should not be hostile to them, they might consider working with economists to help sort out what should be viewed as efficiencies from the standpoint of public policy rather than private efficiencies (which might indeed be anticompetitive).

What would be far more useful to law enforcers is evidence of bundled discounts by firms operating in competitive markets, if indeed such evidence exists.

If evidence of efficiency motivations for extreme bundled discounts does exist, then the sort of game theoretic analysis that has become the starting point for economists will be of value. To be useful, however, such models must go beyond the demonstration of the possibility of anticompetive bundled discounts. The models will have to generate insights about what observable factors can be used

50 Patrick Greenlee & David Reitman, Competiting with Loyalty Discounts (Economic Analysis Group, Working Paper No. EAG 04-2, Feb. 2004), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=600799.

to disinguish anticompetitive bundled discounts from those that are efficient and/or be formulated in a way that they give rise to serious empirical estimates of the cost of letting anticompetitive instances of the practice go unchallenged.

IV. Useful Economic Analysis of Unilateral Conduct More Generally

The upcoming Section II hearings will provide an opportunity to comment on a wide range of single-firm conduct and for economists to provide useful analysis. In addition to tying, bundling, and bundled discounts, topics will likely include exclusive dealing, loyalty discounts, refusals to deal, and full-line forcing, to name a few. To avoid repeating the mistakes of tying, we offer some suggestions for what type of economic analysis will be useful:

- First, it is important not to accept legal categories as being economically relevant. We made this point with respect to tying, in which there are important sub-classes that need to be distinguished.
- Second, in principle, the appropriate simple legal rules will depend on the relative frequency of competitive and anticompetitive instances of the practice in question. While there is no practical way to get objective estimates of the proportions, careful observation of the practice under competition will be informative. This will serve two purposes. First, while arguably not scientific, the ease of finding examples of the practice under competition is a reasonable factor to consider in forming subjective assessments. Second, once examples are found, exploring the rationale for the practice can lead to an understanding of the nature of the efficiencies that was not previously obvious.
- Third, while admittedly difficult, documenting cases in which the practices were in fact anticompetitive will be extremely useful. Elsewhere, Salinger (2005) has argued that documented instances of anticompetitive tying are rare and may not exist.[51] Some of our current and former colleagues from the FTC have argued this point more generally with respect to vertical restraints in general.[52] Documented cases will do far more to justify antitrust hostility to the practices than mere theorizing.

None of this is to suggest that theory cannot be helpful. But, it is not the place to start.

51 Salinger, *supra* note 49. *See also*, Hylton & Salinger, *supra* note 30.

52 James Cooper et al., *Vertical Antitrust Policy as a Problem of Inference*, 23 Int'l J. Indus. Org. 639 (2005).

V. Concluding Comments

Economists have, and will continue to have, opportunities to provide insights that lead to better legal rules. These opportunities will be lost, however, if the recommendations fail to address the question of how to distinguish among competing explanations for the practices at issue and if they are based on theory that is too abstract to match real settings.