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"Appropriate Antitrust Policy Towards Single-Firm Conduct: Extraction vs. Extension"

by

Dennis Carlton

(Graduate School of Business, University of Chicago)

<u>Note</u>: It is expected that you will have reviewed the speaker's paper before the Seminar.

Assessing Single-Firm Conduct

Extraction vs. Extension: The Basis For Formulating Antitrust Policy Towards Single-Firm Conduct

*Dennis W. Carlton and Ken Heyer**

This article distinguishes between two types of single-firm conduct. The first, which we call "extraction," is conduct engaged in by the firm to capture surplus from what the firm has created independently of the conduct's effect on rivals. The second, which we call "extension," is single-firm conduct that increases the firm's profit by weakening or eliminating the competitive constraints provided by rivals' products. We propose, as a fundamental antitrust policy towards single-firm conduct, the following: Conduct merely to extract surplus the firm has created independently of the conduct's effect on rivals should be permitted. Conversely, conduct that extends the firm's market power by impairing the competitive constraints imposed by rivals presents a legitimate cause for concern.

An essential element of appropriate antitrust policy is to allow a firm to capture as much of the surplus that, by its own investment, innovation, industry, or foresight, the firm has itself brought into existence. Alternative policy approaches to single-firm conduct including, in particular, ones aiming to enhance static efficiency at the possible cost of dynamic efficiency and ones seeking to maximize overall welfare through more targeted intervention on a case-by-case basis (not to mention the use of competition policy to protect

*Katherine Dusak Miller Professor of Economics, Graduate School of Business, University of Chicago, and Research Associate, National Bureau of Economic Research; and Acting Deputy Assistant Attorney General, Antitrust Division, U.S. Department of Justice, respectively. The views in this paper are solely those of the authors and do not necessarily represent those of the Department of Justice. The authors would like to thank Dan O'Brien, Miguel de la Mano, Thomas O. Barnett, Douglas Melamed, Mark Popofsky, Marius Schwartz, Greg Werden, and an anonymous referee for helpful comments. They would also like to thank Abigail Treworgy for excellent research assistance. A condensed version of this article appeared as *Appropriate Antitrust Policy Towards Single-Firm Conduct: Extraction vs. Extension,* ANTITRUST, at 50 (Spring 2008).

competitors rather than consumers) seriously threaten to impede economic growth and welfare over time.

A policy that goes further, and which permits all unilateral conduct regardless of competitive effects (perhaps on grounds that "even more profit will generate even more innovation") is considered and rejected as overly lenient, inconsistent with widely accepted presumptions in favor of inter-firm competition, and unwise—at least under the current state of economic knowledge.

I. Introduction

Antitrust policy in the United States is schizophrenic in its treatment of single-firm conduct. While generally permitting conduct that is virtually guaranteed to reduce static welfare (e.g., simple monopoly pricing), it treats with considerable suspicion a variety of other practices (e.g., vertical restrictions or bundled pricing) that frequently enhance static welfare. Although the potential for reducing competition provides some justification for taking a harder look at types of single-firm conduct that are more sophisticated than simple monopoly pricing, the logic underlying antitrust policy in this area remains confused and is likely harmful to the cause of economic efficiency and growth.

This article distinguishes between two types of single-firm conduct. The first, which we call "extraction," is conduct engaged in by the firm to capture surplus independently of the conduct's effect on rivals. A simple example is pure price discrimination. The second, which we call "extension," is single-firm conduct that increases the firm's profit by weakening or eliminating the competitive constraints provided by its rivals. An example is exclusive dealing where the effect is to eliminate smaller rivals' access to distribution.

An essential element of sound antitrust policy is to allow a firm to capture as much of the surplus that, by its own investment, innovation, industry, or foresight, the firm has itself brought into existence. We believe that alternative policy approaches to reviewing single-firm conduct including, in particular, policies to enhance static efficiency at the possible cost of dynamic efficiency as well as ones seeking to maximize overall welfare through more targeted intervention on a case-by-case basis, seriously threaten to impede economic growth and welfare over time.

Our paper proposes the following treatment for single-firm conduct: Conduct merely to extract surplus that the firm has created independently of the conduct's effect on rivals should be permitted. Conversely, conduct that extends the firm's market power by impairing the competitive constraints imposed by its rivals presents a legitimate cause for concern.[1]

1. Despite the theoretical possibility that welfare could be enhanced by a surgical, case-by-case, policy of government intervention, our view is that such attempts are far inferior to a consistent application of the broader and more concrete policy recommended here.

A policy that goes further, and which permits all unilateral conduct regardless of competitive effects (perhaps on grounds that "even more profit will generate even more innovation") is considered below and rejected as overly lenient, inconsistent with widely accepted presumptions in favor of inter-firm competition, and unwise—at least under the current state of economic knowledge.

ANTITRUST POLICY IN THE UNITED STATES IS SCHIZOPHRENIC IN ITS TREATMENT OF SINGLE-FIRM CONDUCT.

The article is organized around several underlying economic principles that follow from an analysis of the economic foundations of current antitrust policy. One might think that these principles are well understood, perhaps even obvious, but we think not. We discuss the theoretical and empirical validity of these principles and analyze their implications for antitrust policy by drawing on considerations of administrability and consistency with general and widely held presumptions.

II. Policy Towards Single-Firm Conduct

The law and the courts have long recognized, if only implicitly, the critical role played by investment and innovation in our economy. Rigorous measurements by economic scholars have demonstrated that investment and innovation are the dominant forces behind an economy's advances in productivity and growth.[2] For firms to have the proper incentives to invest and create, they must be permitted to profit from their success.[3] Dynamic efficiency spurred by the lure of profits, rather than the maximization of short-run consumer or even total welfare, represents an essential and (in our view) often ignored consideration in antitrust policy toward single-firm conduct. This leads to:

A. PRINCIPLE #1:

Simple monopoly pricing is legitimate because it spurs dynamic efficiency.

As we noted earlier, even firms with considerable market power are generally permitted by U.S. antitrust law to engage in simple monopoly pricing. In jurisdictions other than the United States the principle is not always followed. For example, the European Commission can attack excessive pricing as "exploitive" under its competition laws, though such attacks have been rare. The principle

2. *See* Robert Solow, *Exclusionary Conduct, Effect on Consumers, and the Flawed Profit-Sacrifice Standard*, 70(1) ANTITRUST L.J. (1956) and Zvi Griliches, *Issues in Assessing the Contribution of Research and Development to Productivity Growth*, 10(1) BELL J. ECON. 92-116 (1979).

3. This principle provides also a rationale for issuing patents. In this paper we do not address either the appropriate scope or optimal duration for patent protection.

not to treat monopoly pricing as an antitrust violation seems to us sound.[4] Indeed, the logic underlying it also has, as we discuss below, implications for the treatment under antitrust policy of more complex forms of single-firm behavior.

Firms that have obtained market power legitimately are generally allowed to set prices as much above cost as they like and, at times, can earn very high profits. Indeed, it is the prospect of monopoly pricing (albeit with the static deadweight loss that generally accompanies it) that provides a critically important incentive for welfare-enhancing investment and innovation.[5]

Capping prices (and hence returns on investments) will, among other drawbacks, generally deter risky but economically desirable investments. This is hardly a prescription for innovation and economic growth. Price and profit constraints, achieved through antitrust policy, focus on the short run where investment activity is taken as more or less exogenous and the constraints are imposed to promote static efficiency. To the extent it employs a static analysis, however, such an antitrust policy fails to properly take into account the dynamic inefficiency resulting from adverse investment incentives.[6] The more the law limits a firm's anticipated profit from bringing a product successfully to market, the lower the incentive to do so in the first place. A corollary is that antitrust policy makers and courts are well-advised to exercise extreme caution before mandating "reasonable" prices for items such as blockbuster drugs, where successful production is uncertain ex ante.

To illustrate this basic point with a simple example, consider the effect on innovation incentives from a policy of regulating prices—not at so low a level as to obviously impair future investment incentives, but nevertheless low enough

4. In countries where the government has privatized industries once owned by the government, one could argue that constraining the exercise of that market power is justifiable because it was not necessarily achieved through competition in a market. We think it unwise to ask courts to act as regulators. Where regulation is appropriate, we believe it should be handled by an expert regulatory agency. Often, however, the ability of privatized firms to exercise monopoly power over any significant period of time can be avoided through a properly structured privatization process.

5. As the American jurist Learned Hand once famously admonished in a widely quoted opinion, "the successful competitor, having been urged to compete, must not be turned upon when he wins." *See*, e.g., United States v. Aluminum Co. of America, 148 F.2d 416, 424 (1945). In jurisdictions that are not centers of innovation and where innovation has in recent years lagged behind that in the U.S., considerations of dynamic efficiency should arguably play a particularly important role in the formulation and application of antitrust policy. For a detailed treatment of the recent lag in productivity by the European Union relative to the United States *see*, for example, Bart van Ark, Mary O'Mahony, & Marcel Timmer, *The Productivity Gap between Europe and the United States: Trends and Causes*, 22 (1) J. Econ. Persp. 25-44 (2008).

6. For an analysis of the contrast between regulation and antitrust, *see* Dennis W. Carlton, and Randal C. Picker, Antitrust and Regulation in Economics of Deregulation, Nancy Rose, Ed., National Bureau of Economic Research, forthcoming.

to constrain significantly the market power of a highly successful (perhaps even "dominant") firm.

1. A Hypothetical

Firm A has an idea for a new software product. After researching the potential market, evaluating the competition, and assessing the uncertainties inherent in a risky venture of this sort, its owners conclude that if the venture fails they are likely to lose their $5 million investment. They also conclude, however, that should they succeed they can expect to earn a profit of $50 million. After much internal debate and negotiations with outside lenders, firm A calculates that although it is a fairly close call, it will take the gamble.

Fortunately for its owners and investors (and indeed, the consuming public!), firm A hits it big and develops an extremely valuable product. Unfortunately for its owners and investors, the local competition authority receives a number of complaints about firm A's high prices and large profits. Investigation confirms that this extremely popular product is generating a rate of return several times what a typical firm earns. The local competition authority contemplates its options.

Reasoning that no firm merits so large a return on investment (the authority calculates that net revenue of $50 million on a total investment of only $5 million represents a return of fully 900 percent) and believing that future innovation incentives can hardly be reduced much by capping prices to where the firm's return is "only" 100 percent, the competition authority considers imposing such a cap.[7] The authority notes further that not only will consumers benefit from lower prices, but also that prices closer to marginal cost (which is zero) will lower the deadweight loss, enhance static efficiency significantly, and move output closer to the competitive level.

2. Discussion

What, if anything, is wrong with this analysis? What has been ignored is a proper appreciation of the important difference between ex ante expectations on the one hand, and ex post outcomes on the other. Missing also is an understanding of the predictable adverse effect on investment incentives from the action under consideration.

In our example, firm A has indeed earned ten times the amount it invested. However, at the time firm A decided whether to invest, it viewed the investment as being virtually a break-even proposition. Had it known that the maximum it would be permitted to earn would be capped by antitrust authorities, it would not have made this particular investment. Importantly, nor will an untold number of others faced with similar future prospects.

7. To fix ideas, we assume for purposes of this discussion that firm A is able neither to price discriminate, nor to maintain its profitability by evading price regulation through the use of other business practices.

Could there be circumstances, in principle, in which investment activity and dynamic efficiency would not be significantly discouraged by anticipated antitrust restrictions on pricing and profit and/or where the static deadweight loss suffered from supracompetitive pricing exceeds the expected dynamic efficiency benefits from marginal investment incentives? Conceivably, there could be such cases. That having been said, it will frequently be impossible for antitrust enforcers to distinguish among cases where dynamic efficiency is important from cases where dynamic efficiency is not important. And, even if it were possible to identify such cases, the costs of administering a rule prohibiting pricing above some to-be-determined reasonable level are likely very high.[8] In addition, the deterrent effect on incentives for potential investors produced by signaling potential investors or innovators that their future prices and profits will be subject to antitrust scrutiny is potentially quite large.

The recognition that expected profit affects the incentives to invest leads directly to our second principle.

B. PRINCIPLE #2:

Extraction of surplus through means other than simple monopoly pricing is equally as "legitimate" as monopoly pricing, based principally on its impact on dynamic efficiency.

Why, if high prices (and profits) are permissible, are antitrust enforcers often hostile to less orthodox methods of unilaterally exercising market power?[9] And perhaps even more importantly, is there a compelling economic justification for differential treatment? Included among the numerous "unorthodox" forms of single-firm conduct that competition authorities and courts often view with suspicion (or worse), are common practices such as differential pricing across customers, tying, exclusive dealing, resale price maintenance, refusals to deal, and non-linear pricing rewarding customer loyalty. Under certain circumstances, as we argue below, greater suspicion of such conduct is indeed warranted. Nevertheless, those circumstances are limited and often confused with efficient, or even procompetitive, practices.

LET US BEGIN BY ASKING WHETHER THERE IS A COMPELLING ECONOMIC JUSTIFICATION FOR LIMITING A FIRM'S PROFIT TO WHAT IT CAN EARN THROUGH SIMPLE MONOPOLY PRICING.

8. While it is true that even in the U.S. we resort to price regulation in a number of markets, a large body of empirical economic literature documents that regulation frequently imposes very high direct and indirect costs, often greatly exceeding the hoped-for benefits. Moreover, numerous studies have shown that regulation is often used for the benefit of the firm(s) being regulated and/or their competitors, rather than to benefit consumers or otherwise enhance economic welfare.

9. As discussed below, some of these "unorthodox" methods may do no more than enable a firm, by in effect committing credibly not to lower price to others, to earn what appears could be obtained from simple monopoly pricing.

Antitrust hostility to these practices is in some respects quite surprising from the perspective of an economist[10], given that simple monopoly pricing produces a clear and well-recognized static deadweight loss to the economy, while these other forms of unilateral conduct are believed frequently (though not always) to increase output, provide incentives for more effectively marketing a firm's products, or otherwise enhancing welfare.[11] Firms employ strategies more sophisticated than simple monopoly pricing when they believe doing so will enhance profitability. Let us begin by asking whether there is a compelling economic justification for limiting a firm's profit to what it can earn through simple monopoly pricing. If there is, what is it, and when does it apply?

As an initial matter, there is no reason to believe that the outcome generated by simple monopoly pricing is optimal—whether from the narrow profit-maximizing perspective of the firm, the perspective of consumers, or the perspective of economic welfare as a whole. Indeed, we know that efficient investment incentives generally improve, the more surplus the firm is able to capture when its innovations create the surplus.

Fixed costs vary greatly across projects, as does the degree of investment risk. Demand for final products varies greatly. Beyond this, it is well-known that complex strategies such as vertical restrictions and/or non-linear pricing can frequently benefit both producers and consumers.[12]

Antitrust enforcers' hostility towards conduct that generally represents little more than a creative effort by a firm to capture a larger share of available surplus is due, in part, to a narrowly-defined concern about static consumer welfare. When a firm is engaged in price discrimination, for example, its higher profits may come at the expense of some, or even all, consumers. And those whose focus is entirely on consumer welfare may condemn such conduct even when the effect on the economy as a whole is positive.

And yet, as we noted in our discussion of simple monopoly pricing itself, interference with a firm's efforts to capture more of the value generated by its product

10. It is not necessarily surprising from the perspective of political economy, which predicts that organized private interest groups—including some of the firm's customers—can and will devote resources to having antitrust policy serve their own private interests, rather than the interests of the economy as a whole.

11. *See,* e.g., DENNIS W. CARLTON AND JEFFREY PERLOFF, MODERN INDUSTRIAL ORGANIZATION, 4th ed. (2005, Ch. 10), Lars Stole, *Price Discrimination and Competition*, in HANDBOOK OF INDUSTRIAL ORGANIZATION, VOL. 3 (Mark Armstrong & Robert Porter, eds., 2007), ROBERT BORK, ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF (1978) and RICHARD POSNER, ECONOMIC ANALYSIS OF LAW, 2*nd* ED. (1977).

12. In some circumstances simple monopoly pricing will fail to cover total costs even where total surplus would exceed total cost (i.e., where from the standpoint of total economic welfare, production should take place). Indeed, although we do not recommend that antitrust policy be altered to sanction monopoly extension on these grounds, the fact that, as discussed below, firms generally capture less than the total surplus created by their innovations suggests that there may well be underinvestment in R&D and a less-than-optimal level of innovation.

will likely lead to a reduction in the quantity and quality of desirable products and services created in the future. Indeed, because available evidence suggests that in many industries there are already sub-optimal incentives to innovate and develop new and better products, antitrust policies that further deter such activity may be of particularly great concern.

As Jonathan Baker points out in a recent article,

> "From one generation to the next, innovation is undoubtedly a central determinant of the welfare of humankind. Economists studying individual projects, moreover, routinely find that the benefits of innovation to society as a whole greatly exceed the benefits to the firms that develop the innovation."[13]

As with simple monopoly pricing, it is appropriate for antitrust authorities to permit such conduct despite the possible (though by no means certain) adverse impact on static welfare, in order to improve dynamic efficiency.

III. Extraction vs. Extension

The quest for an optimal set of rules to be applied to single-firm conduct is complicated, and we are hardly the first to enter this debate. In our view there exists no simple set of rules that, when applied, are guaranteed to maximize welfare under all circumstances. For example, one cannot, unfortunately, reach general welfare conclusions merely by looking at the form taken by single-firm conduct. Tying, exclusive dealing, and various pricing strategies including aggressive low prices and non-linear pricing can, depending on the facts, enhance welfare or reduce it.

Policy makers are appropriately less concerned with the form taken by, or even the motivation given for, business conduct than they are with economic effects. And effects will vary depending on the particular facts. Perhaps most frustrating is that even specifying welfare as the criterion by which single-firm conduct will

13. *See*, Jonathan Baker, *Beyond Schumpeter vs. Arrow: How Antitrust Fosters Innovation*, 74 ANTITRUST L.J. 576 (2007). See also Zvi Griliches, *The Search for R&D Spillovers,* 94(S29) SCANDINAVIAN J. ECON. (1992), Timothy Bresnahan, *The Mechanisms of Information Technology's Contribution to Economic Growth*, in INSTITUTIONS, INNOVATION AND GROWTH: SELECTED ECONOMIC PAPERS 135-37 (Jean-Phillipe Touffut, ed., 2003) and others cited by Baker who have found that the aggregate social returns to R&D investment exceed the private returns to the investor.

be judged provides no guarantee that welfare will be maximized if each case is subject to review.[14]

Although we believe that conduct engaged in unilaterally by firms, even by so-called "dominant" firms, is generally benign and procompetitive, we agree that in certain circumstances single-firm conduct may be anticompetitive and economically harmful. Firms can generally be expected to seek out profits for either or both reasons. What principle can usefully distinguish the "good" from the "bad"?

We recommend that it is important that antitrust policy towards single-firm behavior distinguish between two types of conduct. One type, behavior we call "extraction ," is unilateral conduct engaged in by the firm to capture more of the value that it has brought into existence absent anticompetitive effects. A second type of conduct, "extension," enhances the firm's profit by eliminating or weakening competitive constraints provided by rivals. Although conduct can fall into both categories, antitrust policy could be simplified and, in our view, improved if conduct falling squarely into the extraction category was immune from antitrust attack.

Although conduct can fall into both categories, antitrust policy could be simplified and, in our view, improved if conduct falling squarely into the extraction category was immune from antitrust attack.

A. EXTRACTION

There are more complex methods than simple linear pricing by which a single firm might seek to extract its share of available surplus. Static welfare comparisons of alternative pricing programs through which a firm unilaterally attempts to extract more value from what it has produced ignore the dynamic efficiency benefits of permitting such conduct. They ignore also the potentially large costs of attempting, through antitrust policy, to constrain the conduct of firms that possess monopoly power. Such costs include the direct costs of monitoring and enforcement. They also include potentially significant indirect costs from a chilling effect on competition and attempts at evasion.

14. Recently, for example, Steven Salop proposed that antitrust employ a consumer welfare standard for judging conduct on a case-by-case basis (*see* Steven Salop, *Exclusionary Conduct, Effect on Consumers, and the Flawed Profit-Sacrifice Standard,* 73 Antitrust L.J. 311-374 (2006)). While application of a welfare standard (we would favor one based on total welfare, rather than consumer welfare) is seemingly ideal in principle, such policies have been criticized for generating potentially large costs of their own. Not only would the cost to competition authorities and courts of determining ex post whether the conduct at issue actually did reduce welfare be potentially large, but as critics such as Doug Melamed and Greg Werden have argued, considerable costs could fall on businessmen ill-equipped to determine ex ante whether the conduct they are planning to engage in would result in liability (*see* Doug Melamed*, Exclusive Dealing Agreements and Other Exclusionary Conduct—Are There Unifying Principles*, 73 Antitrust L.J. 375 (2006) and Greg Werden, *Identifying Exclusionary Conduct Under Section 2: The 'No Economic Sense' Test*, 73 Antitrust L.J. 413 (2006)). This, in turn, would doubtless serve to deter at least some welfare enhancing conduct.

Thus, we recommend that where the firm's conduct leaves inter-firm competitive constraints intact, that conduct should be permitted by antitrust policy.

An important implication of this rule is that it would permit certain common forms of single-firm conduct currently at risk of antitrust attack (especially outside the U.S.). This includes, in particular, price discrimination, practices aimed at preventing the firm from behaving opportunistically (and, in effect, "competing against itself"), and simple refusals to deal.[15]

1. Price Discrimination

Price discrimination can be accomplished through a variety of practices, such as through tying in order to meter based on differing elasticities of demand. The static welfare effects of price discrimination are, in general, ambiguous. In particular cases or under specific assumptions, however, the effect may be relatively predictable. Should this matter for antitrust? Our recommendation is that price discrimination be permitted regardless of its effect on static welfare.[16] Even where prohibiting price discrimination might conceivably enhance static welfare in some cases, policies that reduce a successful firm's ability to profit from its success threaten to stifle economic growth and lower economic welfare in the long run. For this critical reason and others, we would permit such conduct to go unchallenged.[17]

2. Restraints as Credible Commitments to Permit Rent Extraction

Thus far, in our discussion of antitrust policy towards single-firm conduct we have presented the case for permitting the firm to set a simple monopoly price or even to use price discrimination as a means of capturing a larger share of available surplus.

There are circumstances in which, despite strong demand for its product, a firm not competitively constrained by the offerings of rival producers may be incapable of capturing available surplus by pricing above its marginal cost of production. Customers fearing post-sale "opportunistic behavior" by the seller may

15. Despite the theoretical possibility that they can, under certain limited circumstances, reduce welfare, we argue below that still other forms of single-firm conduct should generally be permitted by antitrust. These include, in particular, above-cost pricing, entry, and product improvements that are themselves non-predatory, i.e., that make business sense even absent any weakening of competitive constraints.

16. Although price discrimination is not itself a violation of U.S. antitrust law, practices whose sole purpose is to enable price discrimination (e.g., tying to meter) occasionally are. In other jurisdictions, e.g., in Europe, price discrimination technically can trigger antitrust enforcement but generally does not.

17. The other reasons include the not insubstantial cost of determining whether and when the attempt to price discriminate actually does lower static welfare, and the costs of devising and policing remedies to prevent the firm from switching to alternative, perhaps even more costly, business practices crafted to achieve a similar purpose.

refuse to pay more than what it would cost the seller to make additional sales to others.[18] In such situations, the firm may wish to use one or another vertical restraint in order to, in effect, prevent it from competing against itself. Although the result is higher prices, here again we believe that considerations of dynamic efficiency argue strongly against using antitrust policy to attack such conduct.

Serious treatment of this issue by economists grew out of a short note published by Ronald Coase.[19] Coase conjectured that in the absence of special contractual arrangements with customers, a durable good monopolist might be unable to charge customers a price greater than marginal cost.

To demonstrate, Coase considered the case of a durable good monopolist who reduces output below the competitive level in order to charge the simple monopoly price for his good. Using for illustrative purposes a hypothetical monopolist of land (he later generalizes the argument to the case of manufactured durable goods), Coase asks the following:

> "Suppose [the original landowner] did this ... In these circumstances, why should the original landowner continue to hold [land] off the market? The original landowner could obviously improve his position by selling more land since he could by this means acquire more money. It is true that this would reduce the value of the [monopoly quantity of land] owned by those who had previously bought land from him—but the loss would fall on them, not on him ... The process [of selling] would continue as long as the original landowner retained any land ... And if there were no costs of disposing of the land, the whole process would take place in the twinkling of an eye."

Coase goes on to list some contractual arrangements that might enable the monopolist to avoid this result, including agreements not to produce any more of the good after the monopoly quantity had been offered, offers to buy back the good in the future at an attractive price, the use of leasing rather than outright sale, and the production of a less durable good.[20] These arrangements remove, or weaken, the incentive that the monopolist might have to, in effect, compete against itself.

18. *See*, Daniel O'Brien & Greg Schaffer, *Vertical Control with Bilateral Contracts*, 23 Rand J. Econ. 299-308 (1992) [hereinafter "O'Brien & Schaffer"], as well as R. Preston McAfee & Marius Schwartz, *Opportunism in Multilateral Vertical Contracting: Nondiscrimination, Exclusivity and Uniformity*, 84 Am. Econ. Rev. 210-230 (1994) [hereinafter "McAfee & Schwartz"].

19. *See* Ronald Coase, *Durability and Monopoly*, 15 J.L. & Econ. 143-149 (1972).

20. *Id*. at 147.

A variant of Coase's original insight turns out to apply to many products other than durable goods. And, as subsequent authors have shown, efforts by the seller to credibly commit not to engage in opportunistic conduct vis-a-vis its customers potentially takes the form of a wide range of restrictive vertical arrangements. These may include exclusive territories, resale price maintenance, and more.[21]

Exclusive territories, for example, may be used as a way of preventing the firm from arranging one set of terms with one distributor and then opportunistically signing a contract with even more competitive terms with one of the distributor's rivals.[22] Resale price maintenance clauses can help serve a similar purpose. Indeed, at the extreme, the firm may be able to solve its problem through complete vertical integration. To the extent that integrating is more costly than selling through independent distributors, however, the economy is worse off by adopting antitrust policies that induce firms to move in that direction.

In cases where the monopolist has come upon its monopoly legitimately, should its adoption of practices purely to avoid the opportunism outcome create antitrust liability? For the same dynamic efficiency and practical reasons why we would permit other forms of rent extraction (including simple monopoly pricing, but not including what we refer to below as "extension"), we believe they should not.

3. Refusals to Deal

A property's creator is usually entitled to its exclusive use. A doctrine that forces an owner to share his property or otherwise dictates the terms and conditions of exchange deprives the owner of an incentive to create the property. For example, the U.S. Supreme Court recognized this point in *Trinko*[23] and ruled that, with rare exceptions, refusals to deal with one's rivals should not be construed as an antitrust violation.

It is important to distinguish between situations where a property owner refuses unconditionally to sell to (or buy from) others and situations where a firm's

21. *See* Patrick Rey & Jean Tirole, *Chapter 7: A Primer on Foreclosure*, *in* HANDBOOK OF INDUSTRIAL ORGANIZATION, VOL. 3 (Mark Armstrong & Robert Porter, eds., 2007). The authors, drawing on influential early articles by O'Brien & Schaffer and McAfee & Schwartz (*supra* note 18), summarize the relevant literature.

22. Vertical restrictions of this type can increase a seller's profit whenever the seller wishes to convince a distributor that it will not face additional competition. This can arise as in the Coase example of land but it also can arise in the more typical settings in which vertical restrictions have been analyzed—namely in cases where a seller wants to induce a distributor to engage in selling effort but the distributor is concerned about free riding. Again, we would treat this use of vertical restrictions as unobjectionable since it represents a firm's decision of how best to extract value from its product. Indeed, using vertical restrictions to prevent free riding on the distributor's selling efforts can benefit not only the seller and its distributors, but final consumers as well.

23. *See* Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398 (2004). Certiorari to the United States Court of Appeals for the 2nd Circuit, No. 02-682.

willingness to deal is instead made contingent upon the other dealing party (or parties) engaging in conduct that itself amounts to an antitrust violation. In these latter circumstances it is not the refusal to deal that is properly objected to on antitrust grounds. Rather, it is the anticompetitive conduct that a willingness to deal may be inducing in others that provides the grounds for objection. The proper focus of antitrust in such cases is not on the property owner's refusal (or more accurately, his willingness) to deal, but on the competitive consequence of whatever conduct this leads other parties to engage in. Indeed, the appropriate antitrust analysis should be no different if the objectionable conduct is induced by a willingness to deal than if it is induced by the offer of a cash payment or any other form of consideration.

Finally, refusals to deal cases have at times arisen in the context of standard setting bodies.[24] Typically, in such cases, the owner of a patent is accused of having misled the standard setting body as to the patents it possesses and/or the royalties it will charge for its patents if a selected standard requires that patent's use. Ignorant of the fact that the standard's users will subsequently be subject to hold-up by the patent holder, the standard setting body agrees on a standard that employs the patent holder's intellectual property. At this point, and after the sinking of considerable standard-specific investments by others, the patent holder refuses to license its intellectual property at "reasonable rates." Because the rates the patent holder is able to demand from others may exceed greatly what the patent holder would have been able to charge had the existence of its patent rights been known ex ante, such conduct has, at times, been attacked as an antitrust violation.

This is not the place for a complete treatment of this complex issue.[25] We note, however, that although unmitigated conduct of the type in question might well harm final consumers, there exists a serious question as to whether the conduct is more properly treated under contract law than under antitrust law. To the extent that contracting parties—i.e., other participants in the standards setting body—have adequate incentives to sue, i.e., where harm to third parties is largely internalized by prospective litigants, it may be more appropriate to challenge such conduct as a contract violation rather than as an antitrust violation. Under U.S. law, antitrust liability triggers treble damages while contract liability triggers only single damages. From the economic viewpoint of optimal deterrence, whether liability (even antitrust liability) should trigger treble damages should depend, in part, on how easy it is to detect the conduct and on whether the directly injured parties have standing to sue.

24. *See*, for example, Federal Trade Commission v. Rambus Inc. Docket No. 9302 (2007), and Federal Trade Commission v. Dell Computer Corp., 121 F.T.C. 616 (1996).

25. For an extensive treatment of the issues involved, *see* Joseph Farrell, John Hayes, Carl Shapiro, & Theresa Sullivan, *Standard Setting, Patents, & Hold-up*, 74 Antitrust L. Rev. (2007).

B. EXTENSION

In contrast to "extraction," the behavior that we call "extension" enhances the firm's profitability by weakening the constraints imposed by competitors. In that way it extends the firm's market power. "Extension," as we use the term, may involve either the creation of market power over additional products ("monopoly leveraging"), or protecting the firm's legitimately obtained market power by weakening the competitive threats or constraints provided by rival firms ("monopoly maintenance").

To illustrate how tying can profitably extend a firm's market power, consider the case of a hypothetical island on which there is a monopoly hotel serving many tourists.[26] Natives live on the island. The hotel operates a restaurant, which competes for both native and tourist diners in competition with local restaurants. By tying meals to lodging, the hotel can so diminish the number of tourists dining at local restaurants that, in the extreme, lack of scale prevents any local restaurants from surviving. The hotel thus acquires a monopoly over the island's natives in the provision of restaurant services.[27]

Another method by which a firm can potentially weaken competitive constraints is by obtaining market power over an important input.[28] Consider a dominant manufacturer of potato chips which is trying to maintain its monopoly power in the face of entry and expansion by rivals. If potato chips are distributed primarily through established supermarket and convenience store chains, and if other distribution channels are considerably less efficient at performing this function, the manufacturer may be able to weaken its rivals' competitiveness by entering into exclusive dealing arrangements with supermarkets and convenience stores. Doing so, and either charging rivals for the right to use these outlets or denying the rivals access to the outlets altogether, could weaken their competitiveness and extend the monopolist's market power.

These last examples illustrate our third principle.

C. PRINCIPLE #3:

Where economies of scale matter, conduct that deprives rivals of scale may weaken competitive constraints and thereby (but not necessarily) harm competition. In addi-

26. *See* Dennis Carlton, *A General Analysis of Exclusionary Conduct and Refusal to Deal—Why Aspen and Kodak Are Misguided*, 68 ANTITRUST L.J. 659 (2001). This example is due to Rob Gertner.

27. For a theoretical demonstration of how a firm with market power in a tying good can obtain market power also in a tied good by committing to sell the two as a package, *see* Michael Whinston, *Tying, Foreclosure, and Exclusion*, 80 AM. ECON. REV. 837-59 (1990). *See* also Dennis Carlton & Michael Waldman, *The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries*, 33(2) RAND J. ECON. 194-220 (2002) [hereinafter Carlton & Waldman].

28. Timothy Brennan, *Understanding "Raising Rivals' Costs"*, 33 ANTITRUST BULL. 95 (1988).

tion, input monopolization may raise rivals' costs and thereby relax competitive constraints with a resulting harm to competition.

Legitimate antitrust concerns are absent when there are no scale economies in either the output or input markets. In the absence of scale economies, it is hard to see how conduct can trigger an antitrust violation since the conduct is unable to alter the competitive constraint that rivals provide. Even where there are scale economies, depriving a rival of scale does not necessarily raise its marginal cost, the relevant cost for determining competitive constraints, though it could raise its average cost. Unless marginal cost is declining, scale deprivation does not raise a rival's marginal costs, assuming the firm remains in existence.[29] Where economies of scale are important, however, the more business a firm takes from its rivals, for whatever combination of reasons, the more it could raise the likelihood that its rivals may exit the business. In the extreme, all rivals may be driven from the market. At that point, the surviving firm may have monopoly power and be able to set prices above pre-exit levels.

This is a somewhat disturbing theoretical possibility. It suggests that, where economies of scale are significant, there may not be a simple and easily administrable rule for distinguishing between conduct that is welfare-enhancing while harming competitors, and conduct that can be welfare-reducing largely *because* it harms competitors. Indeed, the very notion that efficient firms should, under certain circumstances, be prevented from competing aggressively puts one on a very slippery slope towards chilling competition, perhaps through suggestions that antitrust policy should handicap efficient firms in order to protect their less efficient rivals. It also raises serious questions about the meaning of the widely expressed adage that "Antitrust is about protecting competition, not about protecting competitors."

Although a complete examination of this difficult issue lies outside the scope of this article, we note that practical considerations against chilling competition argue strongly in favor of broadening the "extraction" safe harbor we have proposed for single-firm conduct.[30] These additional safe harbors are discussed in the next section. In cases of generally procompetitive conduct not covered by our safe harbors, but where that conduct may serve (under some circumstances) to extend monopoly power, we would restrict antitrust intervention to cases where the evidence of net harm to welfare is strong, the harm is likely to be very substantial, and better alternatives (possibly regulation) are unavailable.

29. Dennis W. Carlton & Michael Waldman, Safe Harbors for Quantity Discounts and Bundling, 15 Geo. Mason L.R. 1231-39 (2008).

30. *Id.*

D. BROADENING THE SAFE HARBOR—MAKING A BETTER PRODUCT, PRODUCING MORE EFFICIENTLY, LOWERING PRICE

As the preceding discussion of Principle 3 indicates, its application could, in theory, constrain what is usually thought to be desirable competitive conduct. To us, the theoretical possibility that competition is bad is so remote (and hard to detect) that we think certain additional safeguards are needed to prevent imposing antitrust liability on what is thought to be admirable conduct.

Under virtually any coherent competition policy regime, the creation of market power achieved through the introduction of a better product ought to be viewed as legitimate—indeed, laudable. The provision of better and less costly goods and services constitutes virtually the essence of competition itself, and achieving it should be a primary objective, rather than a concern, of sound competition policy. Competitors will doubtless suffer when a rival develops a better mousetrap. And, indeed, market concentration may increase dramatically—but only to the extent that consumers voluntarily defect to the better offer of one firm's particularly attractive product.[31]

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Producing a better product may give its creator market power. And yet, the market power being created will increase not only the welfare of the producer, but the welfare of consumers as well. An automobile monopolist setting a monopoly price for autos, for example, is likely better for consumers and for the economy as a whole than the alternative—a world with no automobiles but perfect competition among horse-drawn carriages.

Improving one's offering has, in common with what we are calling monopoly extension, the fact that it will tend to make one's competitors worse off. An important difference, however, is that if the offering is improved, one's competitors are worse off because their actual or potential consumers are being diverted by something the consumers believe will make them better off. In this critical sense, even where a better product eliminates competitors, the improved offering represents more competition, not less.[32]

31. Advertising is another form of competition that, where successful, tends to attract business away from one's competitors. It should be subject to similarly lenient treatment by antitrust authorities, assuming the advertising does not constitute fraud or libel.

32. Where introduction of a better product is accompanied by contractual restrictions—including tying—that may potentially extend monopoly power, our view is that when there is a proper antitrust concern it is with the contracts themselves. For a discussion of the difficulties of treating technological tying as an antitrust offense *see* Carlton & Waldman (*supra* note 27).

Nevertheless, as the discussion of Principle 3 indicated, the development of an improved product (or the achievement of efficiencies through merger or competition through aggressive above-cost pricing by a dominant firm), may result in both the elimination of inefficient rivals and higher prices after they exit. Such a possibility cannot be ruled out on purely theoretical grounds, and an argument could be made that, in these cases, seemingly desirable conduct has caused the firm's market power to be "extended." Such outcomes appear likely only under highly specialized circumstances, however, and are exceedingly difficult to predict ex ante.

"Possibility theorems" do not translate readily into efficient or practical policy recommendations. We are far from omniscient, and neither competition authorities nor courts have full information about the present, much less the future. Costly mistakes are not only possible but likely, despite one's best intentions.

This is one reason why, due to the serious risk of chilling beneficial price competition, antitrust policy towards predatory pricing—in the U.S. at least—requires that the alleged predator's price be below an appropriate measure of its cost. Applying antitrust policy to attack product improvement strikes directly at the very core of dynamic efficiency and economic welfare, and the cost of occasional mistakes in this area (mistakes which, in the language of decision theory, mistakenly "convict the innocent") likely dwarf the hoped-for benefits from not "acquitting the guilty."

Heyer addresses a related argument in the context of merger policy. He notes that while cost-reducing mergers can, in theory, lower consumer welfare by driving out inefficient rivals and permitting the more efficient firm to charge prices above pre-merger levels, blocking mergers for this reason would be a poor use of merger policy. His skepticism towards the use of merger policy applies equally in the case of single-firm conduct:

> "This analysis does not suggest that projected merger-specific efficiencies should be used as a rationale for blocking mergers ... There are a number of reasons why doing so might be bad public policy. For one thing, in the short run at least (prior to possible exit by less efficient incumbents), society saves resources ... and consumers can be expected to benefit from lower prices. This round of competition may possibly be quite long. In addition, the length of time during which any future monopoly position might be obtained and exploited is unknown and relatively speculative. Indeed unless ... a natural monopoly [results], rivals may well remain in business and provide the same competitive constraint they provided pre-merger. And, if the ... efficiencies are large enough, it may be the case that the monopoly price of the ... firm will be no higher than (or not much higher than) the [previous] price.

> Second, rivals may themselves find ways of reducing their costs . . . to better compete and survive. Although rivals who may be harmed by . . . a more efficient competitor have an incentive to lobby the antitrust agencies . . . holding a price umbrella above the heads of inefficient rivals does not provide much incentive for them to develop efficiencies themselves . . .
>
> Finally, in a worst-case scenario, if the firm eliminates its competition, there is no competitive entry/alternative on the horizon, and consumers are being seriously and adversely impacted, government (though generally not competition authorities themselves) could, in principle, opt to regulate the firm directly—as we regulate a number of utilities. Though regulation is generally costly and undesirable, if the alternative is a clearly entrenched (though perhaps more efficient) natural monopoly, explicit regulation may be more efficient policy than . . . essentially requiring that there be multiple, inefficiently-sized competitors."[33]

This leads us to:

E. PRINCIPLE #4:

Certain core components of competition—in particular, introducing better products, lowering production costs, and lowering price (so long as it is still above one's own cost)—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.

IT IS WORTH EMPHASIZING THAT CREATING A BETTER PRODUCT OR LOWERING COSTS OR PRICE WOULD NOT, UNDER OUR APPROACH, ENTIRELY IMMUNIZE A FIRM FROM ANTITRUST LIABILITY.

It is worth emphasizing that creating a better product or lowering costs or price would not, under our approach, entirely immunize a firm from antitrust liability. Firms would continue to be subject to the usual prohibitions against, for example, (below-cost) predatory pricing or the anticompetitive use of vertical restraints. In this sense we would distinguish between conduct that is almost always welfare-enhancing and that makes business sense apart from possible anticompetitive consequences, and conduct that does not.

33. *See* Kenneth Heyer, *A World of Uncertainty: Economics and the Globalization of Antitrust*, 72(2) ANTITRUST L. J. 405-06 (2005)

IV. Is There a Limiting Principle for Permitting Single-Firm Conduct?

We noted earlier that an important economic justification for monopoly extraction is the increased incentive that higher profit potential provides for dynamic efficiency. Why then, one might ask, shouldn't antitrust policies be even more permissive than they are now—perhaps permitting all unilateral conduct that increases profits, even conduct amounting to monopoly extension? Failure to address or even recognize this tension in current antitrust policy points to a widely ignored gap in our knowledge.

One immediate response is that monopoly extension is objectionable because, like cartels and anticompetitive mergers, it represents an elimination of interfirm competition, which we normally take to be desirable. But why is that taken to be desirable? Indeed, why not allow cartels and mergers to monopoly in order to create incentives for innovation? One answer is that the history of cartels and anticompetitive mergers does not show that these combinations occur largely in markets where dynamic efficiencies are potentially substantial, or that dynamic efficiencies are an important reason for such arrangements. We think, however, this topic deserves greater study.

But even if one accepts that the elimination of interfirm rivalry through cartels or merger is undesirable, what about monopoly extension—unilateral conduct that antitrust regularly condemns? Permitting monopoly extension will, in one obvious sense, eliminate competition, but it will, in an indirect sense, potentially enhance it. Anticipating that part of the expected return from obtaining market power would be the prospect of even greater profit—from leveraging that power into additional markets (or maintaining it longer)—firms would possibly have stronger ex ante incentives to develop desirable new products. Would permitting monopoly extension simply drive competition backwards in time as firms compete to be "the" monopolist and, conceivably, make such competition even more vigorous? And while the degree and effectiveness of ex post competition (and static welfare) might suffer under such a regime, what basis is there for concluding that these costs likely outweigh the potential benefits of greater incentives to innovate?[34] This is a legitimate question.

However, anticompetitive behavior by firms temporarily in the lead (or "dominant") in particular markets may prevent and deter, rather than enhance, the chances of better products achieving success (and hence being developed and introduced in the first place). While we are unaware of empirical studies showing how an added incentive to become a bigger and more impregnable monopolist through legalizing monopoly extension would affect welfare, we remain skep-

34. Dennis W. Carlton & Robert H. Gertner, *Intellectual Property, Antitrust, and Strategic Behavior*, *in* INNOVATION POLICY & THE ECONOMY 29-59 (Adam Jaffe, Josh Lerner, & Scott Stern, eds., 2003).

tical that such incentives would raise it. Although we are nervous about making errors by intervening when we should not, we are equally nervous about the error costs of not intervening when we should. We do not favor a change in the current system to permit virtually all manner of unilateral conduct by firms. However, we remain open to further evidence.

V. Liability vs. Remedy

It is important to recognize that the efficiency argument for permitting firms to fully extract the value of their product does not readily transfer to situations in which the firm has been found guilty of illegally obtaining or abusing its monopoly power. Where a firm has already been found liable (presumably for conduct other than what we have argued should be exempt from antitrust liability), an efficient remedy may well prohibit or restrict behavior that would in other contexts be perfectly acceptable.

ACCEPTABLE—INDEED EFFICIENT—REMEDIES FOR ANTITRUST VIOLATIONS TYPICALLY INVOLVE INTERFERENCE WITH, OR PERHAPS EVEN ELIMINATION OF, THE FIRM'S PROPERTY RIGHTS.

Acceptable—indeed efficient—remedies for antitrust violations typically involve interference with, or perhaps even elimination of, the firm's property rights. Just as anticompetitive mergers, for example, are frequently dealt with by requiring the merging parties to divest assets to an independent firm, so it might be appropriate for monopoly extension to be dealt with by remedies such as divestiture of intellectual property ("IP") rights, or a requirement that IP be licensed to others at a low or zero royalty.

The economic rationale for not interfering with a firm's ability to extract profit from its property—dynamic efficiency—simply does not apply in cases where either the property itself has been illegally obtained or maintained, or where it has been used to extend the firm's monopoly power. Where the firm has violated antitrust laws by illegally obtaining or using monopoly power, imposing costs on that firm or otherwise limiting its ability to maximize profits can serve as a valuable deterrent to firms contemplating violating the antitrust laws. Moreover, appropriately crafted remedies can serve to move the price towards the more competitive market equilibrium that would have existed had the firm not violated the antitrust law to begin with.

Efficiency considerations should play a critical role in the design of any remedy. Some remedies are more costly to police than are others, and some remedies can generate serious economic costs of their own. This is one reason why the use of fines can be more efficient than structural or conduct remedies. In any event, whatever form of punishment is chosen, its magnitude should be proportionate to the expected harm from the violation. Excessive punishment results in overdeterrence, which produces its own inefficiency.

Nevertheless, it is important to emphasize that the principles relevant to determining an appropriate remedy for an antitrust harm are different than the principles relevant to the determination of antitrust liability.

VI. Conclusion

We propose that antitrust policies distinguish between conduct that is purely extractive and conduct that might also be exploitive in the sense of extending market power. Where single firm conduct is being used for no purpose other than extracting value from what the producer itself has lawfully created, the conduct should be permitted by competition authorities. Apart from the cost savings to enforcement officials and the courts, this would make antitrust policy towards single-firm conduct consistent with how U.S. antitrust policy treats simple monopoly pricing. And it would do so for the same basic reasons: the importance of creating incentives for dynamic efficiency along with avoiding a variety of enforcement costs.

Antitrust scrutiny is warranted for conduct that enables a firm to extend its market power by rendering its rivals' competitive constraints less effective in the precise way defined in this paper. We appreciate that the distinction we are making between extraction and extension will not always be a clean one, and that implementing policy based on this distinction will not in all cases be easy. Principles do count, however, and recognizing the distinction between extension and extraction should immunize a lot of conduct now susceptible, wrongly in our view, to antitrust challenge.