ECONOMIC ANALYSIS GROUP
DISCUSSION PAPER

Does Antitrust Need to be Modernized?

by

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Abstract

In 2002, Congress established the Antitrust Modernization Commission to address whether the antitrust laws needed to be changed in light of globalization and rapid technological change. This paper addresses that question. Although the basic framework of the antitrust laws is suitable to deal with current economic conditions, the paper identifies several areas where antitrust can be improved. The paper first examines whether the proper criterion for antitrust should be total or consumer surplus. Then it identifies some key issues that need to be clarified and explains how they should be clarified. Those issues include market definition, merger policy and the treatment of efficiencies, the interaction of antitrust and intellectual property, exclusionary conduct, the right of indirect purchasers to sue, and the proper allocation of responsibility between regulation and antitrust.

I. Introduction

In 2002, Congress established the Antitrust Modernization Commission (AMC) to investigate whether the antitrust laws and their administration need to be modernized, especially in light of changes in the worldwide economy. The topic of antitrust is timely because antitrust laws influence how firms compete and a significant policy question is whether antitrust is impeding economic growth driven by technological change and new products. Congress was particularly interested in whether rapid technological change and globalization required new laws or approaches to antitrust.[1]

An analysis of antitrust doctrines and policy raises fundamental economic questions about what economists know and do not know about competition. Do economists understand enough about the effect of industry concentration on pricing or on R&D that numerical guidelines make sense? Do economists understand enough about abuses of the patent system so as to adjust antitrust policy related to intellectual property to minimize competitive harm? Do economists know enough about some particular business practices (such as tying, one focus of the Microsoft antitrust case) that some practices should be outlawed? Do economists agree that the emphasis on defining markets should remain a pillar of antitrust policy in assessing likely harms to competition? Do economists have any basis for claiming that antitrust is beneficial to the economy? Can economists fashion remedies for antitrust problems so that the remedies do not cause more harm than good? These questions strike me as difficult ones and good ones to try to answer.

Before discussing what I believe to be the most interesting antitrust topics, I begin with the general policy questions of what should be the objective of the antitrust laws and how the laws should be administered in order to achieve that objective. Without this background, no sensible discussion of antitrust is possible. I then turn to a discussion of some controversial antitrust doctrines that need fixing or, at least, some tinkering. Specifically, I analyze market definition, the interaction of intellectual property and antitrust law, certain types of exclusionary conduct (tying and bundling discounts), and procedural issues involving economic matters such as damage multiples, the right to sue, and laws of contribution. I conclude with a brief summary and suggestions for future research.

II. What Is the Objective for Antitrust and How Should It Be Achieved?

A fundamental question for antitrust is "what is its goal?" One early debate was whether antitrust should try to favor certain groups, such as small firms. That debate was resolved by courts with the statement that antitrust protects competition, not competitors.[2] But what exactly does it mean that antitrust protects "competition?" Should antitrust maximize consumer surplus,

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[1] The AMC is comprised of twelve members, eleven of whom are, or recently have been, practicing lawyers. I am the sole economist. The Commission expects to issue a report in 2007 based on extensive hearings (available at its website, www.amc.gov). My views do not necessarily reflect those of the AMC.

[2] *E.g.*, *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 508 U.S. 209, 224 (1993).

total surplus (total welfare), or some weighted average of producer plus consumer surplus?[3] Despite the logic described below compelling the use of total welfare instead of consumer surplus, the antitrust laws of most countries focus on consumer surplus rather than total surplus. Canada and New Zealand are the rare exceptions in that they use a total surplus standard. In Canada, there has been considerable litigation over the meaning of total surplus, with the outcome finally reached that the Canadian Competition Bureau can use total surplus in the sense that economists do. In the United States, the Department of Justice and Federal Trade Commission state that their focus is on consumers, but suggest that they may not challenge activities (e.g., mergers) that have unusually large efficiencies, even if some consumers are harmed. (Merger Guidelines (1997) at Section 4). U.S. courts generally have not recognized efficiencies as a defense to antitrust activity that harms consumers. I first discuss what should be antitrust's objective, and then explain the subtle distinction between the objective and how to achieve it in a world with imperfect knowledge. I conclude with the practical consequences for antitrust in such a world.

A. The Objective

The proper objective of antitrust should be total, not consumer, surplus. (See Heyer (2006)). The reasons are the ones familiar to economists who do cost-benefit analysis—that is, the size of the pie is maximized when activities are organized efficiently. By the standard theorems of welfare economics, we therefore know that activities that raise GDP can make everyone better off. It is better to pursue policies that maximize GDP—and only then worry about distributional questions—rather than pursue inefficient policies.

A proponent of the consumer surplus objective for antitrust commits at least two logical errors. First, if only consumers matter, then a buying cartel should be perfectly legal and indeed should be encouraged. Monopsony harm would not matter at all in antitrust cases because the fact that sellers are harmed is irrelevant under a consumer surplus standard.[4] Second, the notion that antitrust should focus on consumers, not firms, is premised on a false vision of who are consumers and who are firms. Most transactions in our economy are between firms. Firms are typically both the consumers and the sellers. The image of antitrust protecting innocent individuals from evil corporate empires is misleading (though sometimes effective). Moreover, firms are owned by shareholders, so profits do flow back to consumers.

The use of total welfare treats all agents in the economy the same, showing preference to no particular group. The use of consumer surplus shows preference to consumers over producers. Once preference is shown to one group over another, it is a small step in logic to treat

[3] There is a semantic confusion in the economic and legal literature with some writers using the term "consumer welfare" to mean total surplus, with other writers using it to mean only consumer surplus. Posner (2001) and Bork (1978) use it in the former sense.

[4] I know of no proponent of the consumer surplus standard that endorses buyer cartels, or believes that monopsony is not harmful. Proponents simply say that buyer cartels and monopsony are exceptions to the otherwise sensible rule of maximizing consumer surplus. The need for these exceptions illustrates the lack of a coherent logic for the consumer surplus standard.

different groups of consumers differently. However, even if one uses consumer surplus as the objective, I think it is generally a mistake to distinguish amongst groups of consumers.[5] Every act of a firm likely harms some consumers and benefits others. Consider an airline merger that will lead to a very efficient route structure but will also result in less service to some remote city. Most passengers are benefited, a few are hurt. Even if one is concerned only with consumers, it is not sensible to stop such mergers if the benefits outweigh the harm. Otherwise, every merger could be stopped if only one customer is harmed. In fact, my experience is that government agencies do look at aggregate consumer effects, and courts typically do also, although technically under the Clayton Act, antitrust harm to any substantial consumer group could provide a basis to enjoin a merger. Therefore, whether one uses consumer or total surplus, one should not distinguish amongst consumers.

B. Achieving the Objective in a World of Uncertainty

Even if one agrees that the objective of antitrust should be to maximize total surplus, the question remains how best to achieve that objective.[6] It has long been recognized that the legal system involves costs. Aside from out-of-pocket costs, there are costs of making errors. If courts are unable to figure out perfectly which actions maximize total surplus, then the cost of the legal system must include not just the cost of mistakes on the firms involved in a particular case, but also the effect of legal actions on other firms who may adjust their behavior in response to the possibility of legal liability.[7]

The recognition that courts make errors means that one might want to adopt a legal process that does not tamper with what we think is generally, though not always, efficient behavior. For example, we would not want the court to engage in a detailed investigation of every action of a firm to make sure it was behaving in a way to maximize total surplus, rather than engaging in some form of strategic behavior that harms welfare. The reason is that the court might well come to the incorrect conclusion and then that could chill competition among firms wishing to avoid legal hassles. A good example of this reasoning is the treatment of predatory pricing. As long as price is above cost (let's put aside which cost), courts do not intervene under our antitrust laws even though one can easily construct models of above-cost predation. A legal rule that exposes firms to legal liability from above-cost price competition could stifle competitive behavior to the detriment of consumers. Hence, courts choose a safe harbor for pricing that allows firms to escape legal liability as long as price is above cost.[8]

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[5] The not-for-profit sector raises special issues which I abstract from.

[6] The inability of a court (or social planner) to costlessly figure out efficient allocations is precisely why economists advocate the use of markets.

[7] The antitrust laws are designed to preserve the process of competition because that process presumably achieves a desirable objective. By specifying the objective, it becomes clearer what processes should be protected.

[8] Just as there is a rationale for safe harbors to protect actions that are unlikely to harm competition, so too there is a rationale for unsafe harbors (known as "per se" rules) to forbid actions that are almost always anticompetitive, such as explicit price fixing.

A similar logic applies to entry. It is not an antitrust offense for a firm to enter an industry even when that entry reduces total surplus. For example, suppose an inefficient firm enters a monopoly market. Depending on the magnitude of the inefficiency, it is possible for total surplus to fall, but no one proposes that the antitrust laws allow courts to engage in such a welfare calculation in order to prevent entry. Courts would have a hard time figuring out when entry does harm and would make errors. Entry is so vital to competition that subjecting firms to possible legal liability for entry is unwise policy: likely, it would chill competition so widely that the gain from those few cases where entry does harm competition (and the court can so identify them) pales in comparison to the harm from stifling competition.[9]

Figuring out what should be safe harbors for competitive behavior depends on judgments about how error-prone courts are and how vital the attacked behavior is to competition. However, recognition that the administration of any law, including antitrust, involves errors, emphasizes that the antitrust rules courts adopt should not require a detailed investigation of each and every action of a firm to determine whether total surplus is being maximized. Such an approach ignores the costs of the (error-prone) process on non-litigants in addition to litigants. My own view is that markets are generally better than courts at producing competition (Easterbrook (1984)) and therefore, for certain acts such as entry, pricing, and product innovation, safe harbors generally make lots of sense, even though there are numerous academic articles (including my own) showing the theoretical possibility of social harm from strategic use of these actions in certain circumstances.[10]

B. Practical Implications

As a practical matter, how much difference does it make if one focuses on consumer surplus, not total surplus? For most situations, there is unlikely to be a different outcome regardless of the standard used. The reason is that actions that achieve efficiencies should be expected to help consumers.[11] Even in those cases where an activity (e.g., a merger) would pass the total surplus standard but not the consumer surplus standard, we know from welfare economics that the firm engaging in the action has enough resources to pay the consumers to make them better off. Indeed, some merging firms now undoubtedly go to their major customers and, by offering desirable long term pricing, eliminate the customers' opposition to the merger. The danger with this policy of paying off consumers is that it can raise a host of bargaining games in which customers assess whether their complaint to a government agency could scuttle an entire merger, and if so, demand the total surplus from the deal. If the government agency blindly accepts such customer complaints, then efficient deals could get scuttled because buyers, failing to coordinate their demands, behave opportunistically and collectively demand too much. Conversely, if buyers anticipate that their opposition will not scuttle the deal, then they accept a

[9] See Farrell and Katz (2006) and Popofsky (2006).

[10] A clever theoretical insight (Lyons (2002)) is that firms choose which mergers to pursue subject to antitrust constraints. The profit maximizing merger in the feasible set can differ depending upon whether consumer surplus or total surplus is used as an antitrust criterion. The empirical significance of this point and whether it suggests that consumer or total surplus is the better criterion is ambiguous.

[11] For example, see the evidence on merger efficiencies in Carlton and Perloff (2005) Chapter 2.

pittance not to complain. If the government agencies rely only on the lack of customer complaints in deciding whether to approve a merger, then again, deals that harm welfare can be approved. What this analysis does indicate, though, is even with bargaining costs, the likely small number of cases where using a consumer surplus versus a total surplus standard matters may be even smaller than it first appears. It also illustrates that a government agency must examine why customers are (or are not) complaining (Heyer 2006).

In assessing a merger, assume, as is commonly believed, that a government agency typically focuses on price effects over a two-year future period. Suppose further that a fixed cost saving often is not considered as a benefit to consumers while a lowering of marginal cost is, since a lower marginal cost leads to a lower price, but a lower fixed cost does not. The problem with this logic is that in many high-tech industries with high fixed costs and low marginal costs, the product cycle is more than two years. Lower fixed costs today likely will lead to lower future fixed costs, which ex ante are properly viewed as variable. The future fixed costs influence whether to invest in R&D, new products, and plants. By focusing only on efficiencies that influence price over a short period, a government agency runs the risk of failing to credit the future efficiencies, which will benefit consumers in the long run. The fixed cost savings of today are the variable cost savings in the future for new products. Of course, if one is estimating consumer surplus, one could (and should) estimate the discounted value of consumer surplus. Suppose, however, that is not usually done and instead, the government agency focuses on only short run calculations. In such cases, focusing on total surplus even in the short run, rather than consumer surplus, will better encourage the government agencies to recognize fixed cost savings as a source of future benefit to consumers.

A serious objection to total surplus as an objective is that it is politically unpopular because it is perceived as being less favorable to consumers than is consumer surplus. I believe this populist justification for antitrust is based on false premises. From the arguments I have made, a (short run) total welfare standard is more likely to maximize long run consumer surplus than is a (short run) consumer surplus standard. This is especially so in a dynamic economy where new products are the greatest way that consumers benefit. The public needs to be convinced that the criterion of (short run) total surplus is likely to do a better job for consumers than the current (short run) consumer surplus criterion.

The most potent reason to support the consumer surplus standard relates to the monitoring of antitrust policy. If an antitrust agency adopts a (short run) consumer surplus standard, then some monitoring of the agency is possible by seeing whether consumers are harmed in the short run by the agency's decisions. If instead one adopts a (short run) total surplus standard (or long run consumer surplus standard), it will be more difficult to verify whether agency officials are achieving their objectives. By eliminating the ability of a government agency to offset consumer harm with claimed producer efficiencies, a (short run) consumer standard limits improper government action in which, for example, a merger to monopoly is allowed because of claimed efficiencies that are bogus. It is easier to see whether price rises than to figure out a change in profits (though even determining whether price has risen can be hard to do). Especially in countries where the rich can exert strong political influence, a short run consumer surplus standard may be politically favored over any other standard simply because of the fact that the consumer surplus standard can be implemented in a more transparent

way than a total surplus standard.[12] Therefore, although the total surplus standard (when correctly administered) is superior to the consumer surplus standard, paradoxically, implementation of the consumer surplus standard in countries where judges or government agencies will be susceptible to political influence may lead to higher total welfare than implementation of a total surplus standard.

Let me now turn to a discussion of some of the controversial topics in antitrust.

III. Does Antitrust Need to be Modernized?

A. Market Definition

Market definition and the subsequent calculation of market shares remain central concepts that courts rely on to evaluate antitrust claims as to whether a firm or group of firms have market power, meaning the ability to price above competitive levels. Although there are numerous subtleties in its definition, a *market* loosely speaking is defined to be all those products whose presence constrains the price of a particular product. So, for example, if there are 100 firms each of which sells one unit of a homogenous product, each firm's share is 1%. Matters get more complicated when products are differentiated (does a Mercedes compete enough with a Chevrolet to be considered in the same market?) and when there are additional firms that could produce the product.

Economists' interest in market definition is primarily driven by its use in antitrust cases. In the absence of the antitrust laws, economists would spend much less time discussing what the denominator of a market share should include. Instead, they would try to econometrically estimate demand systems to get a sense of substitution patterns amongst different products and then use that knowledge to estimate the effect of either a merger or some questioned business practice. Market shares might be used, but if so they would be, at best, a crude first step in any economic analysis, though they are based on the correct intuition that with lots of roughly similar firms competing, market power should not be a serious concern, where market power presumably means some ability to price so far above the competitive level (usually taken to be marginal cost) that it raises policy concerns.[13]

My experience has been that the crude nature of market shares as a tool to analyze market power is well understood by government agencies and some courts. But many antitrust offenses hinge on a finding of market power, whose determination is often heavily influenced by market

[12] The same lack of transparency as attends a total surplus standard also attends a long run consumer surplus standard. Moreover, monitoring decisions over long term periods is not only difficult but makes it hard to punish the original malfeasor at the government agency where employee turnover may well occur.

[13] How far above marginal cost should price be, to raise policy concerns? What does the "competitive level" mean in an industry where only a few firms can efficiently exist because of scale economies? (Good questions with no unambiguous answers.) The answer to the second question, given by the contestability literature, fails because that literature abstracts from adjustment costs. See Carlton (2004).

share. For example, some courts use market shares as a screen at summary judgment to decide whether to allow a case to go forward. It is for this reason that so much emphasis is placed on the concept of market definition, especially in cases involving a single firm alleged to have misbehaved. The defendant can avoid trial by convincing the court that he has no market power. The economist probably would prefer to inquire whether the alleged misbehavior had an anticompetitive effect and, if it could (or did) not, the economist would explain why that finding should trigger dismissal of the case. Given that courts are error-prone in deciding what economic evidence shows, a screen of market power based on a crude market share analysis may be sensible, though as we are about to see, it is in precisely such cases that economists' ability to define a market are quite limited.

If one is to use market definitions and market shares, are there any inherent flaws and, if so, is there anything we can do to improve matters? There are three separate circumstances where the use of market definition merits discussion. One involves multiple firm behavior (e.g., horizontal mergers), another involves single firm behavior (e.g., strategic behavior), while the third involves new technologies. Only in the first circumstance is market definition immune from serious flaws, though even there, problems can arise.

1. Horizontal Mergers

The Merger Guidelines of the Department of Justice and Federal Trade Commission go through an elaborate and, for the most part, well-reasoned method for defining a market. Basically, a market has the property that, absent entry, a monopolist of the products in the market would raise price by 5% above current levels. Once the market is defined, one calculates market shares. If two firms with large market shares merge, then there is a presumption that prices will rise from current levels (although this presumption is rebuttable—see Merger Guidelines at § 1.51). Notice that the benchmark is the current price, not some (unobserved) competitive price. The question of how to define a market in a merger case is well posed. Whether, or how well, it can be answered is another matter.

One way to answer the question of what products to include in a market is to estimate a demand system for differentiated products. These demand estimates can then be used to figure out what set of products have the property that a monopolist of that set of products could profitably raise price by 5%.[14] Given a market definition, one then calculates market shares to make inferences about the effect on prices of a proposed merger. This is quite an odd sequence of calculations.

Econometric demand estimation is sophisticated and often difficult. But once estimated, it can be used in conjunction with assumptions of a particular competitive game (including how that game might change, though this is seldom done), to yield structurally-based estimates of the

[14] Suppose there are several possible products. Is the subset of possible products that comprise a market unique? No. Therefore, one must add some additional criterion such as minimum number of products to obtain uniqueness. If products are not homogeneous, should each product's price rise by 5% or should some index rise by 5%? This question is not answered by the Merger Guidelines.

effect of a proposed merger. Though there are complications and limitations[15] to merger simulation, it is conceptually well-founded on the underlying economic structure. To go through a complicated econometric demand analysis—and then to base prediction from the effect of a merger on only a general intuition based on market shares—seems like using a jack hammer to bang in a nail. A much better way of proceeding is to use the market definition to calculate shares and then relate those shares econometrically to price, using either a time series or cross-section. This traditional price-concentration study is a reduced form analysis, but as long as the endogeneity of market share can be dealt with, it can be a reasonable way to estimate the effect of a merger. The effects predicted from a reduced form can be checked for consistency with results from the econometric demand estimations and merger simulation.

One approach to market definition is to ask consumers to which products they would substitute if the price of the product under analysis were to rise 5%. One can then consider all those mentioned products as being in the market. Although this approach may be easy to implement, it is not equivalent to that in the Guidelines because the Guidelines include products in the market only if substitution to those products is sufficient to make unprofitable, say, a 5% price increase of the product under analysis, while the alternative approach ignores the strength of the constraining effect on price of the products to which consumers switch. The fact that this approach is not equivalent to the Merger Guidelines' definition does not seem to be well understood.

2. Non-Horizontal

Aside from collective firm action, the antitrust laws in certain circumstances may deem as anticompetitive a wide range of single firm strategic conduct, such as vertical distribution policies (e.g., exclusive dealing, exclusive territories), nonlinear pricing, tying, and predation. Such cases are usually brought under Section 2 of the Sherman Act and are referred to as "bad act" cases. There are usually two requirements for a violation: 1) market power and 2) that the "bad act" maintains or enhances the market power.

Often, analysts try to adapt the Merger Guidelines to define markets in a Section 2 setting. The key adaptation is to the benchmark price—that is, the market is defined to include all those products such that a hypothetical monopolist of the products could profitably raise price 5% above the competitive price (not, as previously discussed in the case of mergers, the existing price). If one knows the competitive price, there is no need to implement the definition since the whole point of the definition and subsequent use of market shares is to figure out if price exceeds the competitive price. But if one does not know the competitive price, this definition cannot be implemented!

This dead end leads to the following conclusions. One can retreat and use the existing price as a benchmark in market definition, but this leaves open the possibility that the existing price already reflects market power, which will not be detected if the current price is used as the

[15] These limitations include reliance of a particular assumption about the game, assumptions usually of no market power in distribution and ignorance of any dynamic considerations. See Carlton (2004), and Scheffman and Coleman (2005).

benchmark.[16] Alternatively, one can base market definitions on similarity of firms and say that with enough similar firms, price must be competitive, and there can be no antitrust violation.

A further difficulty is that most Section 2 cases involve firms selling differentiated products. Should market power in such industries mean price above marginal cost or profits above competitive levels? Since most firms have at least some market power in the sense that price exceeds marginal cost, presumably the deviation between price and marginal cost (the size of the deadweight loss would be a superior measure) should be significant if it is to trigger some legal decision. But there is no consensus in the courts or among economists as to how large this deviation should be. Maybe, then, the courts should focus on profits. After all, the entry process erodes profits, not necessarily the gap between price and marginal cost, when monopolistic competition exists. Yet, for courts to enter into the difficult calculation of economic rates of return strikes me as not generally helpful. Too many assumptions and too many arguments about the relevant time frame and accounting issues are likely to make this analysis difficult.

The difficulty of detecting market power in these "bad act" cases is even more complicated than I have described because the alleged "bad act" may in fact be used to improve product quality and appear in the short run to raise price. So, for example, a standard reason for exclusive territories is to provide incentives to distributors to advertise and otherwise promote effectively, the consequence of which is to raise price (and maybe output). Although one can design sophisticated tests of such a promotion hypothesis, the fact is that relying just on price comparisons with and without the alleged "bad act" fails to address the relevant economics because the "quality" (or marketing) of the good may not be held constant. Economists are sometimes better at addressing the full consequences of an alleged "bad act" than in sorting out how to define a market in such cases. Unfortunately, courts often rely heavily on market definition as a screen as to whether to proceed to a more sophisticated analysis. It might sometimes be better to flip the sequence of analysis and first ask whether the conduct should be immune from antitrust challenges (even if there is market power), then (if it should not be immune), ask whether there is significant market power, and if so, perform a full analysis of the "bad act." For example, if a firm is charged with using vertical restrictions in a Section 2 case, it may be easier to dismiss the case by asking first whether the challenged vertical restrictions are so likely to be procompetitive that they ought to be permitted as a matter of public policy.

3. R&D

One of the most difficult issues in antitrust is how to treat R&D activity in the context of market definition. This topic is important because many mergers (e.g., telecom), and several

[16] This possibility is called the "Cellophane Fallacy," after the "Cellophane" case, *United States v. E.I. du Pont de Nemours Co.*, 351 U.S. 377 (1956). The government charged that du Pont monopolized interstate commerce in cellophane in violation of Section 2 of the Sherman Act, and showed that du Pont produced almost 75% of the cellophane sold in the U.S. The district court dismissed, and the Supreme Court affirmed, largely on the grounds that cellophane constituted less than 20% of all flexible packaging materials sold in the U.S.; however, the courts did not adequately consider the degree to which other flexible packaging materials constrained (or rather, did not constrain) cellophane prices.

recent cases (e.g., Microsoft), are in industries where technological change is key. One approach is to define an "innovation market" consisting of resources devoted to R&D in the relevant industry. This switches the emphasis from products to inputs. This definition would perhaps be sensible if there were a clear connection between R&D (an input) and output. But there is not, except perhaps in a few industries such as pharmaceuticals—where there is a describable timeline for new drugs being developed. And, in that case, one is really identifying future product markets. In fact, many innovations come from outside the industry. Attempts to link R&D concentration to speed of discovery are on much less solid footing than the (already weak) empirical base linking concentration to undesirably high pricing (see Gilbert (2005)). Accordingly, the use of innovation markets as a way to measure market power in industries undergoing rapid technological change has little theoretical or empirical support (see Carlton and Gertner (2003)).

B. Intellectual Property and Antitrust

There is probably no more important topic in antitrust than its relation to intellectual property, especially given the dependence of growth on innovation. Property rights in intellectual property are designed to create incentives to innovate. Antitrust applauds the creation of market power through innovation. The difficult tension arises when either there is no innovation or the intellectual property rights are strategically created or manipulated.

The premise that protection of intellectual property necessarily fosters its development turns out to be false. There is no question that protection of intellectual property is necessary to encourage innovation. But too much protection can inhibit innovation. The reason is that if, for example, obvious ideas are patented, then subsequent innovations that rely on these ideas will be forced to pay for the use of these obvious ideas, and that reduces the incentives to innovate. There has been much criticism of our current patent system (see, e.g., National Academy of Science (NAS) and Federal Trade Commission (FTC) studies), especially with regard to the non-obviousness standard which many have claimed leads to too many patents. There have been several proposed reforms of our patent system.

The antitrust laws have important interactions with the laws on intellectual property. There are several ways in which firms can strategically behave to take advantage of our flawed patent laws. I discuss three: settlements, standard setting, and cross-licensing.

Suppose Firm A has a patent on Product 1 and Firm B starts producing it. Firm B believes that Firm A's patent is not valid. Firm A sues Firm B. The court adjudicates whether the patent is valid and infringed and, if it is, the court either can enjoin Firm B from producing Product 1 or can force Firm B to pay a royalty to Firm A. Suppose Firm A—knowing the patent, in fact, to be invalid and infringed—says to Firm B, "Listen, let's settle the lawsuit. Why don't you stay out of the market for Product 1, let me reap monopoly profits, some of which I will give to you." This "settlement" of the lawsuit involves Firm A paying Firm B, the alleged infringer, to cease to be a competitive force in the market. To make matters worse, if a subsequent Firm C produces Product 1, Firm A can use any royalty received from Firm B as evidence of the patent's validity. This anticompetitive set of circumstances contrasts with an alternative set of circumstances in which there is a patent that is likely to be judged valid and infringed, but the

litigation costs (including the failure to resolve uncertainty quickly, which could, for example, adversely affect investment behavior) are so high that the patent holder settles by paying the alleged infringer an amount less than the cost of litigation. Getting rid of this nuisance lawsuit may well be in the patentee's (and society's) interest under certain circumstances and it is unclear why such a settlement should be prevented.[17] Distinguishing between these two sets of circumstances can sometimes be difficult, but some progress is possible (see Lemley and Shapiro (2006)).

Absent settlement and absent litigation costs, the entrant would earn some expected profits $l\,p_1 + (1-l)\,p_2 = p^e$ where l = probability that the patent is valid, p_1 = profits (possibly negative) from infringing sales, and p_2 = profits earned from valid sales. It must be that the settlement terms leave the entrant better off. To prevent consumers from being worse off in an expected sense from settlement, the courts could forbid lump sum payments and require that the only way to settle a case in which the patent holder provides terms of value to the alleged infringer is to require that the settlement terms stipulate only <u>when</u> the infringer can compete. For example, patentee A sues infringer B. A is not allowed to pay B to stay out of the market but can settle only by allowing the infringer to enter at some time t_1 (before patent expiration). Such early entry will benefit consumers compared to no entry and will generate profits for B. Although not always a complete answer, this method of settlement does mitigate the use of patent settlements as a cartelization device, though the analysis has ignored litigation costs.

There are now so many patents in some areas that firms find it hard to innovate without having their own patent portfolios, which they use to bargain with other firms who might claim that an innovation infringes an existing patent. Such patent thicket problems are a result of the patent laws, not antitrust. (See, e.g., Shapiro (2001)). But even here antitrust can make a difference. Consider two areas: standard setting, and remedies, when a patent is found to have been infringed.

Some standard setting organizations wish to set industry standards that do not entail large royalties. In the design phase, it may be easy to re-specify a product so that it avoids infringing a patent, but there are so many patents both filed and to be filed that it is not so easy to be sure that a particular standard does not (or will not) infringe. In such situations, some firms have expressed a desire to agree in advance amongst themselves either not to charge a royalty or to charge a specified (small) royalty should one of their patents be triggered by the standard. Firms have expressed concerns about antitrust liability for such arrangements because these activities involve collective action regarding pricing. Courts should generally encourage such arrangements and use rule of reason as the mode of analysis in order to recognize the efficiency of such an arrangement, while preserving the ability to condemn an arrangement that is a sham

[17] *See Schering-Plough Corp. v. Federal Trade Commission*, 402 F.3d 1056, 1072 (11th Cir. 2005) ("the interchange of rights and royalties in a settlement agreement 'may promote rather than restrain competition' (quoting *Standard Oil Co. v. United States*, 283 U.S. 163, 170-71 n.5 (1931))).

price fixing agreement. The Department of Justice recently considered such a proposal by a standards development organization, and declined to challenge it under the antitrust laws.[18]

Now consider remedies. Suppose A unknowingly infringes B's patent. Suppose A makes a trivial use of the patent, but it would take A one year to alter the product design. Should B be allowed to threaten to shut A down? Such a draconian threat will allow B to extract A's profits for the year. (It also will give B an incentive to encourage A to go forward initially without revealing B's patent. Recent patent reform legislation puts limits on such "submarine patenting."[19]) Under the equitable relief doctrine, a court can use its discretion whether to allow exclusion or to allow A to pay a "reasonable" royalty. This may be sensible in some circumstances, but there is a serious danger that courts could become regulators of patent royalties. Limiting the "reasonable" royalty to a design-around period may be one way to mitigate this danger,[20] though one must be wary of firms like A failing to make reasonable effort to gain knowledge about relevant patents.

C. Exclusionary Conduct

One of the most controversial areas in antitrust involves exclusionary conduct. What acts can a firm with market power engage in without creating antitrust liability? The Microsoft lawsuit is only one illustration of the wide-ranging scope of activities that can be attacked. The controversy can be easily understood in the context of our earlier framework emphasizing type I and type II errors. Many acts attacked as exclusionary (e.g., vertical restrictions such as exclusive dealing, exclusive territories, and tie-in sales), clearly have efficiency-enhancing properties, though those efficiencies may be hard to measure. These acts can also have anticompetitive consequences under certain conditions. But if it is very hard to identify those conditions, do we really want to create the threat of antitrust liability for what are normally efficient practices? One reasonable answer is to have broad areas of safe harbors for permitted activity that is generally efficient or at least not likely to harm competition. That is how our laws on predatory pricing work. For example, although it can be shown that above-cost predation is

[18] See VMEbus Business Review Letter (2006).

[19] The American Inventors Protection Act of 1999, in combination with the Intellectual Property and High Technology Technical Amendments Act of 2002, made a number of reforms intended to reduce strategic patent-application behavior. Among these were: publication of applications 18 months after the filing date, except where the applicant certifies that the invention will not be the subject of an application in foreign jurisdictions where such publication is not required (35 U.S.C. § 122); and a change in the term of utility patents, previously 17 years from the date of issuance, to 20 years from the date of patent application filing (35 U.S.C. § 154). These reforms reduce both the opportunities and the incentive for submarine patenting. A further proposed Patent Reform Act is currently under consideration in the Congress.

[20] Curiously, the International Trade Court (ITC) also has jurisdiction to adjudicate patent disputes involving foreign infringers, though it lacks the ability to set a reasonable royalty and can only issue exclusion orders. This jurisdiction derives from the Smoot-Hawley Tariff of 1930, a piece of protectionist legislation. (See *Wall Street Journal*, editorial, August 23, 2006.)

possible (to deter inefficient rivals), such pricing is generally allowed because courts are (in my view, properly) reluctant to interfere with price cutting behavior, the heart of the competitive process. Only if the price cutting is too unusual to square with rational profit maximization (e.g., price below cost), do courts investigate the antitrust claim further.

Notice how this test carves out safe harbors and does not require a detailed look at every pricing action. In contrast, some courts, economists, and government agencies have suggested a "no economic sense" or "profit sacrifice" test for any type of exclusionary conduct, in which one asks whether, but for a strategic effect on rivals, the action makes sense.[21] Although several proponents are sophisticated and would likely utilize the test reasonably, I am skeptical that one test can work well in practice for all the varied types of exclusionary conduct. Moreover, the logic of the test cuts to the core of competition. Firm A invests today in some activity that consumers value, to gain future sales from its rival. That's good, generally. Yet, blind application of, say, a profit sacrifice test could condemn this behavior. When application of a test cuts to the core of competitive behavior, it is dangerous.

Remedies for anticompetitive exclusionary conduct can be hard to fashion, as the *Microsoft* case illustrates. The difficulty of devising effective remedies does not necessarily mean the government should refrain from prosecuting such matters, because a liability finding likely would trigger private actions in which monetary damages could be awarded.

One of the areas of greatest current concern in exclusionary conduct is tying and bundling.[22] Even though economists have a great deal to contribute here,[23] both courts and economic thinking remain somewhat confused. The key issue is the distinction between price discrimination and harm to the competitive structure resulting in higher prices. It is well known that tying can be an effective pricing strategy to extract consumer surplus. This is even true if only one good, good A, is monopolized and all other goods are competitively produced both before and after the tie. The simplest example is probably the one where the willingness to pay for A (e.g., salt machines) is directly related to the intensity of use of some competitive product (e.g., salt). A tie will extract surplus from consumers of A but leave unchanged the shadow price of salt to others who have no demand for salt machines, assuming salt is produced competitively. Consumers of salt machines likely are worse off, producers are better off, and efficiency can go either up or down,[24] though the better the discrimination, the more likely efficiency will increase.

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[21] *See, e.g.*, Werden (2006), Melamed (2006). *See* Popofsky (2006) and Salop (2006) for criticisms of these tests.

[22] In a tie, good A can be purchased only if good B is also purchased. With bundling, either a tied good or separate goods can be purchased, but combined purchases are offered on more attractive terms.

[23] For some recent articles on tying and bundling, see Whinston (1990, 2001), Carlton and Waldman (2002, 2005), Tirole (2005), Nalebuff (2005), and Greenlee, Reitman & Sibley (2006).

[24] Posner (2001) notes that economists too readily accept that price discrimination can lead to efficiency. The profits from discrimination induce the use by firms of resources to engage in it and by consumers to avoid it. Such a use is a waste.

The antitrust laws generally allow a firm to set a profit maximizing price. Similarly, they generally allow a firm to charge final consumers different prices. Therefore, being opposed to price discrimination through tying is odd since explicit price discrimination generally is not an antitrust violation.[25] Firms should be able to produce products as they choose and should likewise be able to price them as they see fit. It is hard to distinguish a rationale for allowing one but not the other. Moreover, rules on pricing strike again at the heart of competitive activity. Therefore, for reasons explained earlier, I would regard all pricing activity dealing only with extraction of consumer surplus as falling in a safe harbor of protected behavior.

Matters are quite different when the alleged exclusionary conduct alters the shadow prices faced by the market. Consider a tie-in sale in which, in order to buy A, one must also buy B. If there are scale economies in the production of B, then at the price equilibrium with firms that produce only B, the scale of the demand for B by those not wanting A could be insufficient to support B firms. This insight, due to Whinston (1990), explains how a tie can alter industry structure for B and thereby harm consumers of B, who do not consume A. It is possible to extend this insight to a dynamic model to show how a firm like IBM or Microsoft can use an initial monopoly to maintain monopoly as goods evolve technologically (see e.g., Carlton and Waldman (2002)).

This same logic distinguishing price discrimination from competitive effects would apply to exclusive dealing in which, if there are scale economies in distribution, the use of exclusive dealing can alter the competitive landscape by raising rivals' costs (Salop and Scheffman (1983)).

To illustrate the principles we have been discussing, consider the *LePage's* case.[26] LePage's makes private label transparent tape, as does 3M. 3M decides to bundle its premier tape brand (Scotch Tape) with its own private label brand. LePage's sues, claiming 3M is violating the antitrust laws. The court agrees, since LePage's, without a brand name comparable to Scotch Tape, cannot compete in the same way as 3M. Although there are numerous flaws in the analysis[27] (e.g., no examination of the magnitude of the discount, whether the discount stimulated sales), a key one is that LePage's continued to exist, and therefore, the shadow price of private label transparent tape to non-3M customers was likely unchanged. That alone should end the inquiry. Moreover, although there may be limited circumstances where discounts are anticompetitive, general attacks on discounts are likely to wind up harming the competitive process, just as attacks on "unfair" price discrimination (e.g. Robinson-Patman Act) have inhibited competition.[28]

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[25] I discuss below how the Robinson-Patman Act bans certain types of pricing. While price discrimination is rampant in the economy, plaintiffs succeed in very few Robinson-Patman Act claims.

[26] *LePage's Inc. v. Minn. Mining & Mfg. Co.* [3M], 324 F.3d 141 (3d Cir. 2003) (en banc).

[27] See Rubinfeld (2005) for an analysis.

[28] The reader might surmise that repeal of Robinson-Patman would be desirable, a position economic analysis seems unanimous on (e.g. Posner (2001)). The Robinson-Patman Act was passed in 1936 in response to small firms complaining about large firms (e.g., A&P

When alleged exclusionary practices cause both efficiencies and competitive harms, the optimal policy is unclear. It is easy to say that one should weigh the costs versus the benefits for each particular circumstance; however, this can be exceedingly difficult to do. I would go further and require that one consider the economy-wide cost and benefit of finding liability. Even if one does correctly find liability for one particular case, will the effect be to chill the use of an efficient practice in other circumstances? If so, the finding of liability could impose large costs and the wiser course may be to not attack the practice.[29]

IV. Mechanism Design for the Legal Process

A system of law is not self-enforcing. In addition to judges and legal principles, one needs to figure out how to create incentives for the law to be enforced. This means that one has to answer questions such as who can sue, what damages are recoverable, who pays attorneys' fees, and how settlements should reduce damages when some firms settle but others do not. Each of these questions involves economic issues about mechanism design. We will see that the economic answers sometimes comport with the current laws, but many times do not. Let us discuss each in turn.

A. Who can sue?

A private party that has been injured by anticompetitive acts can sue and recover (treble) damages plus attorneys' fees. Under federal law, only a direct purchaser can sue, while under some state laws, indirect purchasers can also sue. If a cartel of steel manufacturers raises the price of steel, then a direct purchaser is someone such as a car maker who purchases the steel from a cartel member, while an indirect purchaser is someone who purchases a car containing steel. If there is an overcharge of $1 per unit of steel as a result of the cartel, then the direct purchaser who successfully sues receives $1, trebled to $3, as damages for each unit he has purchased. Assuming there is 1 unit of steel per car, an indirect purchaser of one car would also receive the $3 if he is allowed to sue.

In *Hanover Shoe*, the Supreme Court decided not to allow the "pass-on" defense in which a defendant claimed that he was liable for only those overcharges that were not passed on.[30] So, for example, the cartel cannot claim that the overcharge of $1 to direct purchasers is not damage because direct purchasers responded by raising their prices to final car consumers. The Court in

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supermarkets) being able to obtain discounts from suppliers. One of the requirements of the Robinson-Patman Act is that under certain circumstances, such discounts must be cost-justified.

[29] The counter-argument is that the failure to detect and punish an anticompetitive harm will create incentives for additional anticompetitive actions, which also will harm the economy. An asymmetry favoring inaction arises if the potential for anticompetitive harm is less than the potential for efficiency harm, and conversely. An assessment of the asymmetry requires an empirical judgment based on the strength of market forces to correct court errors of inaction versus errors of intervention. See Easterbrook (1984).

[30] *Hanover Shoe, Inc. v. United Shoe Machinery Corp.*, 392 U.S. 481 (1968).

Illinois Brick banned recovery by indirect purchases because a) it leads to duplicative recovery, and b) it is hard to track all indirect purchases.[31]

The federal system is logically consistent, but the interplay with state laws has created a mess. Twenty-five states and the District of Columbia have passed "*Illinois Brick* repealer" statutes allowing indirect purchasers to sue in state court, and several other states permit the same result by judicial interpretations.[32] Therefore, there is now duplicative (or more) recovery in certain states, separate state actions for indirect purchasers that arise whenever there is a federal antitrust suit involving direct purchasers, and duplicative trials.

The logic underlying the federal law is that direct purchasers have the most knowledge about an antitrust harm and therefore should be given an incentive to bring suit, and this incentive would be diluted if their damage award were reduced by what they were able to pass on to indirect purchasers. See Landes and Posner (1979). The logic underlying the position of states that allow indirect purchasers to sue is that it is unfair that final consumers who were harmed too receive no compensation. Moreover, direct purchasers may be reluctant to sue their suppliers, in which case there could be insufficient private actions and sub-optimal deterrence if only direct purchasers can sue.

If the purpose of penalties is to create incentives for efficient behavior, then the first justification underlying the states' indirect purchaser statutes is not relevant. Moreover, the first justification loses sight of the broader incentive effect on economic behavior other than in one particular case. Deterrence is valuable even if a harmed indirect purchaser receives nothing. The second concern is more serious. For example, in the recent Microsoft cases, computer distributors that were direct purchasers brought no private cases.[33] In such instances, the failure of direct purchasers to sue leaves a void that can be filled only by agents acting on behalf of indirect purchasers. This suggests that banning all indirect purchaser suits would lead to under-deterrence, but that such suits should be allowed only where direct purchasers have chosen not to sue. A complication arises if only some direct purchasers sue. In that case, only indirect purchasers purchasing from the non-suing direct purchasers should have standing to sue. Though this procedure itself has complications and may require new legal mechanisms to be put in place, it avoids the current flaw in the system in which indirect purchasers can collect duplicative recoveries and have duplicative state trials. Finally, whether or not one resolves the current conflict between state and federal law, consolidation of direct and indirect suits into one trial proceeding to coordinate presentation and evaluation of evidence would be superior to the current situation where separate state and federal trials occur.

[31] See *Illinois Brick Co. v. Illinois*, 431 U.S. 720 (1977) (indirect purchasers can seek injunctions, but not damages, under the Sherman Act).

[32] Cavanagh (2004).

[33] I served as an expert opposed to Microsoft.

B. Damages

Economics has a lot to say about optimal damages in antitrust cases, but it is largely ignored by the antitrust laws. The economic theory of damages (see, e.g., Landes (1983) or Baker et al. p. 1040 – p. 1046 (2002)) shows that the optimal penalty equals the expected net harm imposed on society by the anticompetitive act. This penalty will deter anticompetitive acts that lower society's welfare, but will encourage acts that raise society's welfare. If all anticompetitive acts were detected and fined, the optimal penalty from, say, a cartel, would equal the lost consumer surplus from the price increase from cartelization. Courts use the overcharge on actual purchases as a measure of damage and ignore the loss in surplus from purchasers who cut back or eliminate their purchases in the face of the cartel price increases. In the absence of efficiencies, this damage award will deter cartelization.

Under the Sherman Act, antitrust damage equals treble the overcharge, regardless of whether the anticompetitive act is overt or not. For example, cartel activity is typically covert. A multiple of 3 is appropriate if we detect cartels only 1/3 of the time. (As far as I know, there are no studies estimating this detection probability.) In contrast, a firm's decision to employ exclusive territories, or to use bundled discounts, to tie its product to others, or to lower its price are all actions observable in the marketplace. Absent litigation costs and legal error, there is no justification for treble damages in those situations since the acts are observable to all and single damages (including lost surplus) are optimal. This suggests the possibility that at least for overt acts the current damage system over-deters by inefficiently penalizing acts that raise total surplus. There is an obvious financial incentive for plaintiffs to fashion claims as antitrust actions in order to obtain treble damages when only single damages are otherwise available. For example, contract disputes such as those between franchisee and franchisors are often brought as antitrust suits precisely to obtain treble damages.

Complications arise when certain conduct such as price fixing have global effects, yet penalties differ by jurisdiction. Following the *Empagran* case[34], the courts have generally held that purchases in foreign countries are not subject to the jurisdiction of the U.S. antitrust laws. For example, if any sales made in or into the U.S. trigger antitrust damages because sales made elsewhere are exempt from U.S. laws and if there are no damages or other penalties available in jurisdictions outside the U.S., then damages recoverable in the U.S. (assuming those have been set optimally to deter domestic cartels) will compensate U.S. consumers but will not optimally deter an international cartel from forming. (I am ignoring the impact of criminal penalties – both monetary and incarceration – available in the U.S.) Attempts to increase deterrence by increasing the amount of damages that U.S. courts award in cases specifically involving international cartels would raise complicated problems of international comity in which U.S. courts would be viewed as interfering with the right of other countries to decide how to regulate their own economies.[35] These complications emphasize the desirability of convincing other

[34] *F. Hoffmann-La Roche Ltd. v. Empagran S.A.*, 542 U.S. 155 (2004).

[35] An additional complication arises because increasing damage awards can disrupt the operation of U.S. and foreign leniency programs in which government prosecutors grant a complete or partial reduction in government penalties to firms that reveal a cartel and/or that provide evidence to prosecute a cartel.

countries to develop and enforce strong laws against cartels in their own country, a direction in which some countries seem to be headed.

C. Contribution

Most lawsuits are settled, not litigated to conclusion, but the threat of litigation influences the settlement terms. Suppose that A and B form a cartel and raise prices by 10% on purchases of $10 million for an overcharge of $1 million which equals $3 million in damages after trebling. Each cartel participant is jointly and severally liable, meaning that either one or both (in aggregate) could be liable for the damage. So if B has no assets, A would have to pay the full $3 million to the plaintiffs. Suppose B settles prior to trial for $1 million. Under current rules, if A goes to trial and loses, A is liable for $2 million. Knowing this, A would offer to settle for, say, $1.9 million. But B would of course realize that if B settles for 1¢, then A would settle for $3 million - 1¢.[36] The plaintiffs are indifferent to the split between A and B, hence plaintiffs would accept B's offer of 1¢. Realizing this, A would bid for the right to be first to settle and, in fact, the equilibrium to this game is that both A and B settle and each pay $3 million (or a bit less). A and B are stuck in a prisoner's dilemma and the no-contribution rule creates an incentive for each to settle for an amount that in aggregate exceeds total damages. This "whipsaw" effect is well recognized and leads to over-deterrence and quick settlements.[37] One solution would be to make non-settling defendants jointly and severally liable for only their collective market share of sales, though this likely increases the use of judicial resources since the incentive to settle will be diminished. The AMC has recommended, at least preliminarily, such a change to the rule of no contribution.

D. Antitrust versus Regulation

The interaction between antitrust and regulation has a long history with significant federal regulation of industry beginning with the Interstate Commerce Commission (1887) and significant antitrust laws beginning with the Sherman Act in 1890. Antitrust and regulation represent two competing approaches to competition policy. One is general, the other specific. History has revealed that regulation, even well intentioned, can wind up leading to inefficiencies as regulators with imperfect information set policies that are designed to please various interest groups. Antitrust, when administered by judges not beholden to special interests and when guided by economic reasoning (as it has been guided, at least recently), has shown itself to be a valuable tool to promote efficiency. The (developing) comparative advantage of antitrust over regulation has led to a decline in regulation and increasing reliance on the antitrust laws to control competition. See Carlton and Picker (2006) for more details. But antitrust is not good at setting prices or other terms of trade. Judges are generalists and lack expertise to become industry regulators. Antitrust is designed to let markets work when they can work. But when markets fail—as in natural monopolies—antitrust is not a substitute for regulation. Instead, antitrust should be used as a complementary tool in which regulation is confined to as few areas

[36] Plaintiffs may want to reward the first to settle by accepting a low settlement, since the first to settle often provides valuable evidence against the cartel.

[37] See, e.g., Easterbrook et al. (1980), though their "whipsaw effect" relies on a different argument than that given above.

as necessary with antitrust covering the remainder. In such settings, the issue of how firms in the regulated sector interact with firms in the unregulated sectors defines a boundary between antitrust and regulation. The Supreme Court in *Trinko*[38] drew a sharp line: Antitrust courts have no business in setting prices. Where prices must be set by other than the market, then that is a task for regulators. Moreover, with rare exceptions, there is no legal basis in antitrust to impose affirmative duties on a firm to deal with its rivals.[39]

The most interesting place where antitrust and regulation interact is where there is an "antitrust savings clause," as in the Telecommunications Act of 1996. Such a clause ensures that a regulated industry remains subject to the antitrust laws. This means, for example, that the DOJ can challenge a merger between two phone companies, even if the FCC has approved it. This clause limits the behavior of regulators. Although regulation and antitrust are administered by separate agencies in the United States, this is not so in other countries. For example, in Australia, the same agency responsible for enforcing the antitrust laws is also in charge of regulation of certain industries. A good research question is whether regulatory capture is less likely when those who enforce the antitrust law are the same as those who regulate industries, or, more generally, whether market performance in such industries is better with a single government overseer than with two.

Summary

Antitrust laws affect the vigor of competition. Their benefits are easy to see when those laws prevent cartels or mergers that will lead to price increases. Their use is more controversial when the conduct of a single firm is at issue. Delineating the boundary between acceptable and unacceptable single firm behavior continues to generate controversy, especially in the area of bundling and intellectual property. The controversy depends in part on how one accounts for errors in decision-making and the effects of those errors on incentives to compete. There is no comprehensive study that quantifies the benefits (or costs) of our current U.S. antitrust policy compared to other possible policies. Although studies of individual cases abound, and are informative, these studies are not a substitute for examining the overall economic effects of antitrust policy.

Although U.S. antitrust policy could be improved, perhaps along the lines suggested, there is no question that it is an enormous improvement over the antitrust policy of, say, 40 years ago before economics had much effect on many lawyers and judges. A significant policy question is whether countries with relatively limited experience with antitrust (most of the world) will learn from or repeat our mistakes.

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[38] *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407-08 (2004).

[39] The exception is *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985), where the Court ruled it an antitrust violation for one firm to cease cooperating with the other when in the Court's view the cessation of cooperation was harmful to competition. *Aspen Skiing* is "at or near" the outer boundary of liability under Section 2 of the Sherman Act, according to *Trinko*. For a criticism of *Aspen Skiing*, see Carlton (2001).

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