Businesses engage in a variety of practices to increase sales and profits, often at the expense of competitors. These "unilateral practices" usually become suspect under the competition laws only when the firm using them has what is termed "monopoly power" under U.S. law and a "dominant position" in the European Union (EU). There is great variation in how the courts analyze unilateral practices. The courts have, for example, devised quite different rules for prices: compare *LePage's Inc v 3M* (Minnesota Mining and Manufacturing Co)\(^1\) with *Manufacture Francaise des Pneumatiques Michelin v Commission of the European Communities*\(^2\) (Michelin II). By the same token, plaintiffs face high hurdles in showing predatory pricing in U.S. law under *Brooke Group Ltd v Brown & Williamson Tobacco Corp*,\(^3\) but low hurdles in showing tying under *Jefferson Parish Hospital District No 2 v Hyde*.\(^4\)

This variation results in part from the reality that the welfare effects of unilateral practices are inherently difficult to assess. Economics and experience provide a strong presumption that certain coordinated practices are harmful; there is thus little variation in the analysis, for example, of price fixing. By contrast, there is no reason to assume that aggressive unilateral pricing is bad—quite the opposite. Still, a firm could use low prices to secure a monopoly. Given this uncertainty,
it is not surprising that courts have reached different conclusions. This is hardly a satisfying outcome, especially since the differences are seldom justified in economic terms. Legal uncertainty dulls investment and deters welfare-increasing competition.

Scholars have suggested two major approaches to antitrust analysis of unilateral practices, either of which would impose some rationality and consistency. Beginning in the early 1950s, the Chicago School argued that many unilateral practices should be per se legal for two reasons. First, these practices usually create efficiencies. Second, one can often derive "impossibility theorems" showing that firms with monopoly power lack incentives to engage in unilateral practices that reduce welfare.

The post-Chicago literature used game theory to challenge the second reason. Beginning in the early 1980s, industrial organization specialists derived "possibility theorems" showing that certain behavior could prove anticompetitive. One might argue that those theorems support the adoption of a rule of reason approach to the assessment of unilateral practices by firms with market power. Thus William Kovacic and Carl Shapiro observe:

Some types of conduct, such as long-term contracts with key customers or preemptive capacity expansion, could deter entry and entrench dominance, but they also could generate efficiencies. The only way to tell in a given case appeared to be for the antitrust agencies and the courts to conduct a full-scale rule of reason inquiry. But since the models are highly sensitive to specific assumptions and parameter values, they do not provide much practical guidance.

This Essay offers an approach to designing rules for assessing unilateral practices based in part on the error-cost framework pioneered

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6 See, for example, Robert H. Bork, The Antitrust Paradox: A Policy at War with Itself 231–38 (Free Press 1993) (arguing that the concept of "foreclosure," used by courts to inform the analysis of vertical integration, is economically unsound); William H. Page, The Scope of Liability for Antitrust Violations, 37 Stan L Rev 1445, 1472–73 (1985) ("[T]here are great inherent disincentives to [the use of boycotts and predatory pricing], and the circumstances in which they are profitable are rare.").

by Judge Frank Easterbrook. Our approach is grounded on three principles:

(1) Distinguishing procompetitive from anticompetitive actions with certainty is impossible.

(2) Socially desirable antitrust rules would minimize the expected cost of errors resulting from condoning harmful practices or condemning beneficial ones, while maintaining a degree of predictability for businesses and administrative ease for the courts.

(3) Assessments of the likelihood and cost of errors associated with legal rules should turn on presumptions based on current economic knowledge and experience.

We will refer to this as a neo-Chicago approach, since it (a) accepts the Chicago tenet that legal rules can and should be assessed on their consequences in terms of efficiency, and (b) makes use of Chicago and post-Chicago insights in designing these rules.

In Part I, we summarize economic thinking on the antitrust consequences of unilateral behavior and its impact on the way courts and regulators analyze such behavior. In Part II, we offer our alternative approach. We focus (a) on the role of economic theory and evidence in forming presumptions about the likelihood that specific unilateral practices reduce welfare, and (b) on the implications of this approach for the research needed to evaluate unilateral practices. In Part III, we apply our approach to tying—one of the more unsettled areas of antitrust law concerning unilateral practices.

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8 Easterbrook emphasized the importance of presumption in structuring antitrust inquiries. He observed that the full rule of reason approach is often impractical and advocates a more structured rule of reason inquiry. See Frank H. Easterbrook, The Limits of Antitrust, 63 Tex L Rev 1, 9-14 (1984). Unlike Easterbrook, we have the benefit of over twenty years of game-theoretic industrial organization models; the results of these models make us skeptical about the ability of economics to provide the necessary guidance for a full-blown rule of reason inquiry.

9 This error-cost approach has been applied to legal rules in general as well as antitrust in particular. See, for example, id at 10; Richard A. Posner, An Economic Approach to Legal Procedure and Judicial Administration, 2 J Legal Stud 399, 400 (1973) (applying error-cost analysis to civil, criminal, and administrative cases). For recent applications, see Keith N. Hylton and Michael Salinger, Tying Law and Policy: A Decision-Theoretic Approach, 69 Antitrust L J 469, 470 (2001) (analyzing tying in an error-cost framework and focusing on the importance of "the relative frequencies of pro- and anticompetitive conduct," as well as the likelihood of judicial error); C. Frederick Becker III and Steven C. Salop, Decision Theory and Antitrust Rules, 67 Antitrust L J 41, 45-49 (1999) (analyzing decisionmaking and advocating antitrust screens to reflect the fact that courts may err when evaluating the effect of the conduct at issue).
I. UNILATERAL PRACTICES: FROM PRE- TO POST-CHICAGO

"Chicago" has come to be the shorthand used by antitrust scholars to describe a temporal and intellectual dividing line. It refers to both a way of thinking about antitrust issues and periods during which those ways of thinking have predominated.

A. Pre-Chicago

The "pre-Chicago approach" asks whether firms have the power to engage in anticompetitive behavior—not whether they have that incentive. The resulting judgments typically fail to consider whether suspect business practices result from efforts to achieve efficiencies. The Supreme Court used this instinctive approach in many cases involving unilateral practices in the first three-quarters of the twentieth century—a period sometimes called the pre-Chicago era in antitrust.

One major pre-Chicago contribution is the "leverage doctrine," which is behind a number of decisions condemning various unilateral practices when used by firms with significant market power. Starting with United States v Terminal Railroad Association of St. Louis, the Supreme Court seemingly concluded that a firm with a monopoly in one market always has an incentive to extend that monopoly to a market for a complementary product in order to capture two monopoly profits instead of one. Following this reasoning, the courts found that several unilateral practices should be illegal per se. Tying, a practice in which a firm links sales of a product in which it possesses market power to purchases of other products that could be acquired com-

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10 See Massimo Motta, Competition Policy: Theory and Practice 7 (Cambridge 2004) (describing pre-Chicago antitrust efforts as fueled "more by the desire to restrain large firms than by the objective of increasing economic efficiency"); Jonathan B. Baker, A Preface to Post-Chicago Antitrust, in Antonio Cucinotta, Roberto Parodolesi, and Roger Van den Bergh, eds, Post-Chicago Developments in Antitrust Law 60, 60-64 (Edward Elgar 2002) (discussing antitrust's classical and structural eras).

11 See, for example, Dr. Miles Medical Co v John D. Park & Sons Co, 220 US 373 (1911) (holding that resale price maintenance is illegal); International Salt Co v United States, 332 US 392, 396 (1947) (holding that "foreclos[ing] competitors from any substantial market" is per se illegal); United States v Yellow Cab Co, 332 US 218 (1947) (holding that a conspiracy to eliminate competition violates the Sherman Act regardless of the amount or importance of interstate commerce affected); Standard Oil Co v United States, 337 US 293, 314 (1949) (holding that a practice substantially lessens competition if it can be shown that "competition has been foreclosed in a substantial share of the line of commerce affected"); United States v Arnold, Schwinn & Co, 388 US 365 (1967) (holding that the imposition of territorial restrictions on resellers is a per se violation of the Sherman Act).

12 See, for example, Ward S. Bowman, Jr., Tying Arrangements and the Leverage Problem, 67 Yale L J 19, 29-32 (1957).

13 224 US 383, 409-10 (1912) (reasoning that the railroad association would use its monopoly on railroad terminals in St. Louis to also monopolize interstate commerce of goods).
petitively, was deemed inherently illegal. Another broad concern was that manufacturers would use agreements with their distributors to extend monopolies downstream. Thus, resale price maintenance, exclusive territories, and exclusive dealing were deemed illegal per se.

Still, another pre-Chicago view was that firms were prone to predatory actions to drive rivals from the market and create monopolies. Predation was considered under the rule of reason. But courts were free to apply reason as they thought best, and defendants often lost.

B. The Chicago School

The Chicago School revolutionized antitrust by viewing a variety of practices deemed suspicious by the courts through the lens of price theory. It developed "impossibility theorems," which showed that, under some circumstances, it was not possible for firms to have the incentive to engage in certain practices even if they had the ability to do so. The most famous is the "single monopoly profit theorem," which was considered fatal (or so it appeared) to the leverage doctrine.

Economic theory shows that, under some assumptions, in a vertical chain of production, there is fixed potential for monopoly profit. A firm with a monopoly at one level of the chain gets all of the monopoly profit if it charges a monopoly price and everyone else in the chain charges a competitive price. Indeed, it serves the monopolist to encourage competition at every other level because any monopoly profit earned by others will reduce its own. Variants of the single-monopoly-profit theorem have been applied to tying, essential facilities, and, more broadly, to the analysis of vertical integration.

*Continental TV, Inc v GTE Sylvania Inc,* one of the earliest Chicago-influenced Supreme Court decisions, overruled precedent by analyzing territorial restraints imposed by manufacturers on distributors under the rule of reason, rather than finding them illegal per se. More recently, the Court has overturned the per se prohibition on a
manufacturer setting the maximum price a distributor could charge. Chicago-influenced Supreme Court decisions have also made predatory pricing claims difficult to pursue. Indeed, the period after Sylvania is sometimes described as the “Chicago era” in antitrust.

C. Post-Chicago Ideas and Models

In the 1980s, some economists started kicking the tires on the Chicago results. They found that it was possible to develop models in which a firm could use a monopoly in one market to affect adjacent markets in ways that reduced social welfare. Michael Whinston’s seminal article on tying showed that leveraging a monopoly position may increase monopoly profits if two necessary conditions apply. The first is that the tied market is subject to economies of scale (and is therefore imperfectly competitive). The second is that leveraging induces exit or deters entry in the tied market, thereby resulting in a secure monopoly in the tied market.

Other economists subsequently identified other situations in which a monopoly could generate more profits or protect existing profits by foreclosing competition in a second market. A further strand of modern economics undercuts the proposition that firms had no incentive or ability to engage in predatory pricing. The post-Chicago approach had an impact on both U.S. and European antitrust law. It received a limited Supreme Court imprimatur in Eastman Kodak Co v Image Technical Services, Inc. On a review of a summary judgment decision, the Court, in effect, rejected

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22 See, for example, Brooke Group, 509 US at 226; United States v AMR Corp, 140 F Supp 2d 1141, 1194 (D Kan 2001) (holding that the government had not met the “high standard of proof of a predatory pricing claim”), affd, 335 F3d 1109 (10th Cir 2003). The development of the Areeda-Turner test for predatory pricing, severely limiting successful predatory pricing claims, was also influenced by the Chicago School. See Kitch, 26 J L & Econ at 209 (cited in note 5).
24 See Dennis W. Carlton and Michael Waldman, The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries, 33 RAND J Econ 194, 205, 212 (2002) (proposing that tying can extend an existing monopoly into a new market, as well as preserve an existing monopoly); Jay Pil Choi and Christodoulos Stefanadis, Tying, Investment, and the Dynamic Leverage Theory, 32 RAND J Econ 52, 60-62 (2001) (proposing that tying by an incumbent lowers the investment incentive of entrants, thereby lowering the probability of entry into the market).
25 See, for example, Jean Tirole, The Theory of Industrial Organization 361–80 (MIT 1988) (discussing how firms can use limit pricing and predation to preclude entry—and how a firm’s reputation for engaging in such behaviors will affect how potential rivals respond). See also Bolton, Brodley, and Riordan, 88 Georgetown L J at 2250–51 (cited in note 16) (discussing the incentive dominant firms have to set prices below average variable cost in order to send “strategic communication involving threats and sanctions”).
the per se legal approach in favor of a rule of reason approach that would consider the possibility of anticompetitive behavior in light of the factual circumstances.\footnote{This decision has been criticized from a post-Chicago perspective as relying on bad economics. See Dennis W. Carlton, \textit{A General Analysis of Exclusionary Conduct and Refusal to Deal: Why Aspen and Kodak Are Misguided}, 68 Antitrust L J 659, 678–81 (2001) (arguing that in \textit{Kodak}, the Supreme Court failed to recognize the lack of an injury to consumers). See also Motta, \textit{Competition Policy} at 7 (cited in note 10); Herbert Hovenkamp, \textit{The Reckoning of Post-Chicago Antitrust}, in Cucinotta, Pardolesi, and Van den Bergh, eds, \textit{Post-Chicago Developments} 1, 7–9 (cited in note 10) (discussing the irrationality of \textit{Kodak} and noting that lower courts have “bent over backwards to construe \textit{Kodak} as narrowly as possible”).}

The European Commission has relied on post-Chicago arguments in several key merger cases, for example blocking a merger between Tetra Laval and Sidel.\footnote{\textit{Tetra Laval BV v Commission}, Case T-5/02, 2002 ECR II-4381, ¶ 338 (Court of First Instance Oct 25, 2002).} It was concerned that the combined entity would have the ability and incentive to use its dominance in carton packaging “as a ‘lever’ in order to achieve a dominant position on the [plastic bottle] equipment markets.”\footnote{Id ¶ 143.} On appeal, the Court of First Instance accepted the possibility of such conglomerate effects but decided that the Commission had failed to show, as a factual matter, that such anticompetitive effects were likely.\footnote{Id ¶¶ 141, 336.}

The post-Chicago literature is a collection of what we call “possibility theorems.”\footnote{Paul L. Joskow, \textit{Transaction Cost Economics, Antitrust Rules, and Remedies}, 18 J L, Econ, & Org 95, 104 (2002) (noting that such theorems have “shown that a variety of market imperfections can theoretically lead to the possibility that vertical integration and vertical contractual restraints can enhance market power . . . and as a result, lead to . . . welfare losses”).} In the vertical foreclosure strand of the literature, these theorems all begin with the assumption that vertical foreclosure does not generate any benefits such as reductions in production costs and transaction costs, or improved convenience for consumers.\footnote{Making such extreme assumptions to focus on a particular issue is standard in economics. Moreover, the authors are careful to note that the models should be used with great caution for antitrust analysis and point out the omitted role of efficiencies. See Choi and Stefanadis, 32 RAND J Econ at 70 (cited in note 24) (“The debate about tying cannot be conclusive unless formal models incorporate the aspects of the world that practitioners consider important.”); Whinston, 80 Am Econ Rev at 855–56 (cited in note 23). Unfortunately, economists and regulatory authorities sometimes ignore these caveats. See, for example, European Regulators Group, \textit{Consultation Document on a Draft Joint ERG/EC Approach on Appropriate Remedies in the New Regulatory Framework} (Nov 21, 2003), online at http://erg.eu.int/doc/publications/erg0330_draft_joint_approach_on Remedies.pdf (visited Dec 10, 2004). Section 1 of this report reaches conclusions about competition policy problems with reference to some of the economic literature but without taking into account the relevant caveats.)

The theorems are based on further assumptions about demand, cost, and firms’ strategic interactions. Finally, the theorems show that a practice reduces social welfare if specific parameters of the model (elasticity of
demand, the magnitude of fixed costs, etc.) fall within a particular range of values. But they are of limited practical value because the data critical to deciding whether reality fits the models is typically unavailable.

D. What’s Next?

The Chicago and post-Chicago literatures have relied on economic theory to question the intuitions of the pre-Chicago approach. Both literatures emphasize efficiency as the ultimate objective of antitrust and reject most pre-Chicago per se illegality rules concerning unilateral practices. Yet where the Chicago School tended to advocate per se legality, post-Chicago thinking enthuses over rule of reason analyses. The post-Chicago literature has shown that, under some circumstances, otherwise benign unilateral practices may reduce social welfare. But the findings turn on assumptions that are hard to test with available data.

We are less confident in the ability of economics to help juries, courts, and regulators to reason their way to the right answer. As Benjamin Franklin noted, “So convenient a thing it is to be a reasonable Creature, since it enables one to find or make a Reason for every thing one has a mind to do.” We are, however, convinced that economic knowledge, both theory and evidence, can provide useful guidance in the design of administrable legal rules that (a) minimize legal uncertainty for businesses and (b) maximize consumer welfare in expected terms. In the following Parts, we explain how these goals may be achieved.

II. UNILATERAL PRACTICES: A NEO-CHICAGO APPROACH

Firms will get away with welfare-reducing practices if competition policy is too lenient, and they will be discouraged from engaging in welfare-enhancing practices if it is too strict. Sound policy must thus begin with an assessment of the likelihood and cost of the two types of mistakes. Policymakers must then devise rules that minimize the expected costs of these errors and make antitrust enforcement predictable for businesses.

To implement this approach, we make three presumptions—or, in the language of Bayesian decisionmaking, we state three prior beliefs—regarding the nature, cost, and likelihood of the errors resulting from the assessment. These prior beliefs are independent of the facts

33 Kovacic and Shapiro, 14 J Econ Perspectives at 57–58 (cited in note 7).
34 Benjamin Franklin, Writings 1339 (Viking 1987).
of any specific case. However, they affect how we process the evidence in each case and how we establish burdens of proof and the degree of antitrust scrutiny. Then, based on those presumptions, we create legal rules that minimize the likely cost of the inevitable errors.

Our three presumptions are:

1. Many unilateral practices that have raised concerns are also widely used in competitive markets, and therefore sometimes result in welfare-enhancing efficiency.

2. Firms with the ability to cause consumer harm often do not have the incentives to do so, while firms that have the incentives to engage in anticompetitive practices often do not have the ability (monopoly power) to do so.

3. Barring procompetitive practices is likely to be more costly, on average, than permitting anticompetitive practices.

Below, we explain the economic reasoning behind each presumption and weigh their implications for the design of legal rules.

A. Prior Beliefs About Efficiency

Consider a practice in which firms in both competitive and uncompetitive markets engage. We would expect that the practice cuts costs or enhances value to consumers—after all, competitive firms cannot survive indefinitely if they do not use the most efficient methods of producing, designing, and distributing products.

Yet nondominant firms regularly engage in unilateral practices challenged under the antitrust laws. These include tying, vertical restraints such as exclusive contracts and exclusive territories, nonlinear pricing, including loyalty discounts, and aggressive price cutting. Practices that generate efficiencies where firms lack market power logically should generate those same efficiencies where firms possess market power. There is no economic reason to believe that these efficiencies become less important as firms acquire market power.

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36 See Jan B. Heide, Shantanu Dutta, and Mark Bergen, Exclusive Dealing and Business Efficiency: Evidence from Industry Practice, 41 J L & Econ 387, 388 (1998) (observing that manufacturers such as Haagen-Dazs and Marvel have required that their distributors not carry competing products).


38 See Motta, Competition Policy at 443 (cited in note 10) ("[T]he alleged non-dominant predator is just trying to increase its market share through an aggressive but lawful behavior.").
therefore presume these practices are procompetitive, even if prac-
ticed by firms with monopoly power, unless shown otherwise.

It is not surprising that businesses have difficulty documenting
and sometimes even articulating efficiencies. In reality, businesses op-
erate instinctively and often cannot show that their prices are profit
maximizing or that they are minimizing costs—even though we as-
sume successful businesses gravitate toward best practices. The effi-
ciency gains from practices such as tying and distribution agreements
are often subtle and not readily reduced to accounting numbers. For
example, David Evans and Michael Salinger show that fairly competi-
tive midsize automobile sedan manufacturers have increasingly tied
more features to their cars. The explanation seems to be that car
manufacturers recognized that they could save money by reducing the
number of product variants. But we doubt that the car manufacturers
could prove the existence or amount of these savings to the degree
often required by the courts and regulatory agencies.

B. Prior Beliefs on Anticompetitive Intent and Effect

The principal implication of several decades of economic investi-
gation on the competitive effects of unilateral practices, such as exclu-
sive dealing and tying, is that there should be no presumption on the
part of competition authorities that these practices are anticompeti-
tive, even when undertaken by firms with monopoly power. Firms
with the ability to cause consumer harm do not often have an incentive
to do so. Anticompetitive actions aimed at excluding competitors from
adjacent markets to achieve monopoly power often result in a reduc-
tion of overall firm profits. Firms with the incentive to act anticompeti-
tively do not often have the ability to do so, either because they do not
have the ability to pre-commit to an anticompetitive course of action
or because they cannot extract any anticompetitive rents due to the
countervailing power of buyers and/or potential entrants.

There is no economic basis, therefore, for presuming that a firm is
engaging in such practices for the purpose of maintaining or acquiring
a monopoly. That is a key result of the Chicago and post-Chicago eco-
nomic literatures. Similarly, there is little reason to presume that, even
if the intent is anticompetitive, the effect will be anticompetitive. The
economics, to date, shows that conditions must be just right to lever-

40 See, for example, Michael D. Whinston, Exclusivity and Tying in U.S. v. Microsoft: What
We Know, and Don’t Know, 15 J Econ Perspectives 63 (2001); Patrick Rey, Paul Seabright, and
Jean Tirole, The Activities of a Monopoly Firm in Adjacent Competitive Markets: Economic Con-
sequences and Implications for Competition Policy (Institut d’Economie Industrielle Working
age a monopoly anticompetitively. We discuss these conclusions below in the context of tying.

C. Prior Beliefs on Error Costs

Table 1 shows the standard error matrix with the shaded boxes reflecting the two possible errors that enforcement agencies and the judicial system can make: falsely condemning competitive practices ("false convictions") and falsely absolving anticompetitive practices ("false acquittals"). The costs of false convictions in antitrust decisions involving unilateral practices are likely to be significantly larger than those of false acquittals. As Judge Easterbrook has observed, "There is no automatic way to expunge mistaken decisions of the Supreme Court. A practice once condemned is likely to stay condemned, no matter its benefits. A monopolistic practice wrongly excused will eventually yield to competition, though, as the monopolist's higher prices attract rivalry." This overstates the case: bad decisions do get expunged or worked around, and monopolies can slow their eventual destruction sometimes through anticompetitive methods (for example, the De Beers diamond cartel) and sometimes through the political process (for example, AT&T). But there are sound economic reasons to believe that the cost of prohibiting efficient practices outweighs the costs of perpetuating monopolies.

41 We borrow the colorful acquittal/conviction terminology from the criminal context, even though it is technically incorrect.

42 Easterbrook, 63 Tex L Rev at 15 (cited in note 8). See also Barry Wright Corp v ITT Grinnell Corp, 724 F2d 227, 234 (1st Cir 1983) ("[W]e must be concerned lest a rule or precedent that authorizes a search for a particular type of undesirable pricing behavior end up by discouraging legitimate price competition."); Ronald A. Cass and Keith N. Hylton, Antitrust Intent, 74 S Cal L Rev 657, 701-02 (2001):

Competition from existing firms provides another constraint on false acquittal costs . . . . If there are existing firms outside of the cartel that are operating in the same market, we should expect them to take advantage of the cartel's output-restraining policy in order to expand their businesses . . . . A dominant firm that consistently charges monopoly prices will attract entrants to its market.


44 See Paul W. MacAvoy and Kenneth Robinson, Losing by Judicial Policymaking: The First Year of the AT&T Divestiture, 2 Yale J Reg 225, 260-61 (1985) (suggesting that AT&T had benefited from "substantial state-by-state regulatory agency support" prior to divestiture).
If an anticompetitive business practice is mistakenly permitted, the resulting monopoly profits attract competition and new entrants, at least in the long run. We are not suggesting that competition cures all anticompetitive ills—only that the forces of competition, and creative destruction, provide some limitation on the magnitude and duration of monopoly profits. The monopoly or near-monopoly positions of firms such as General Motors (automobiles), IBM (computers), RCA (television sets), Kodak (photographic film), Xerox (photocopiers), U.S. Steel (finished steel), and Harley-Davidson (motorcycles) were not ephemeral but not permanent either.45

By contrast, market forces play little corrective role for procompetitive business practices deemed anticompetitive. We would expect that the ease with which plaintiffs won predatory pricing cases before *Matsushita Electric Industrial Co, Ltd v Zenith Radio Corp*46 and *Brooke Group* tempered price competition by firms with significant market power, and that the per se rule against tying has resulted in many firms with market power being advised by their lawyers against realizing the efficiencies that are obtainable from tying. Moreover, by

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46 475 US 574 (1986) (requiring a plaintiff charging price predation to proffer a motive for the charged conduct in order to survive summary judgment).
restraining legitimate acts, antitrust laws reduce the value of being a legitimate market leader—the goal that drives innovation. 47

D. Design of Legal Rules

Consider a spectrum of rules for challenging market practices that ranges from pro-plaintiff to pro-defendant. Increasing the hurdle for plaintiffs makes it harder to conclude that a practice is anticompetitive and therefore decreases the percentage of false convictions and increases the percentage of false acquittals. Error costs vary as we move across this spectrum. From society’s perspective, the best rule on this spectrum is the one that minimizes the expected cost of errors. This cost is a function of the likelihood of error and the cost of each type of error.

Consider first how legal rules can be designed to minimize the likelihood of error. The total proportion of cases that are erroneously decided is the sum of the percentages in the top right and lower left boxes in Table 1. Now, consider the implications of our presumptions for choosing a legal rule. Our priors tell us that practices, such as tying or exclusive dealing, that are commonly used by competitive firms as well as by firms with market power, are generally procompetitive. This means that most cases involving such practices belong in the bottom row (that is, not harmful to competition). In this situation, it is better, all else being equal, to choose a stricter standard, lowering the rate of false convictions, while accepting an increase in the rate of false acquittals. Intuitively, if most of the cases involve permissible business practices, the error rate in evaluating those cases is more important, as they result in a greater number of errors. 48

47 That is why both EU and U.S. antitrust laws do not condemn the mere possession of monopoly. For instance, the Supreme Court’s unanimous decision in Verizon Communications Inc v Law Offices of Curtis V. Trinko, LLP noted:

The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system. The opportunity to charge monopoly prices—at least for a short period—is what attracts “business acumen” in the first place; it induces risk taking that produces innovation and economic growth. To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive conduct.


48 A numerical example may be instructive. Suppose forty cases involve permissible practices and twenty cases involve anticompetitive practices. And suppose that the error rate for both types of cases is 10 percent at the existing legal standard. There will thus be on average four false convictions (10 percent of forty) and two false acquittals (10 percent of twenty), for a total of six erroneously decided cases. Suppose we can move to a stricter standard that lowers the error rate in assessing permissible practices to 5 percent while increasing the error rate in assessing anticompetitive practices to 15 percent. (The error rates for false convictions and false acquittals do
Another important factor in choosing the right legal standard in an error-cost framework is the relative social cost of false convictions and false acquittals. (We implicitly assumed that they were identical in the example above.) When the social cost of false convictions is large compared to the social cost of false acquittals, as our presumptions imply, error-cost minimization requires a stricter standard.

Given our presumptions about efficiency, anticompetitive intent and effects, and error costs, the legal rule that minimizes the expected cost of false convictions and acquittals will necessarily involve significant evidentiary hurdles to establishing that a unilateral practice by a firm with market power is anticompetitive. In practice, such a rule can be implemented by using a series of screens suggested by the economic literature.

Economics has not identified the necessary and sufficient conditions for any unilateral practice to be anticompetitive. But it has done a better job at determining the necessary conditions that can be used to screen out practices that could not be anticompetitive. When one of those necessary conditions fails, we can assume that the practice is not suspect.

Even if all the necessary conditions for anticompetitive effects are met, we still have to balance these effects against possible pro-competitive effects before concluding that the practice is anticompetitive.

We have greatly simplified the analysis here for expositional purposes. Table 1 is presented in terms of outcomes of litigated cases. A more comprehensive analysis would have to also consider “errors” that do not get to court—there will be harmless practices that firms do not engage in for fear of antitrust liability under the prevailing legal standard, as well as harmful practices not litigated because potential plaintiffs do not believe their expected gain from litigation to be positive under the prevailing legal standard. On a related note, we have to recognize that the behavior of firms may change as legal rules change. Moving to a stricter legal standard may encourage more anticompetitive behavior. For example, literal per se legality may result in firms undertaking new forms of anticompetitive behavior that would easily be identified as anticompetitive if litigated.

49 In our experience, economists and regulators often use post-Chicago reasoning to motivate an anticompetitive claim but then ignore the necessary conditions that flow from the post-Chicago literature. The blocked merger of de Havilland and Aerospatiale is one example. Case IV/M.53, Aerospatiale-Alenia/de Havilland, Commission Decision of 2 Oct 1991, 34 Off J Eur Communities (L 334) 42 (Dec 5, 1991) (blocking the proposed merger based on a contention that it would lead to the merged firms occupying a dominant market position). See also Paul Klemperer and A. Jorge Padilla, Do Firms' Product Lines Include Too Many Varieties?, 28 RAND J Econ 472, 482-83 (1997) (suggesting that a net welfare loss from the proposed de Havilland/Aerospatiale merger would have been unlikely). Kodak, 504 US 451, is another example.
tive overall. Indeed, it is important to consider efficiencies in the analysis. A proper inquiry into efficiencies can be costly and time consuming and is accordingly best done for only those practices that pass the earlier screens. For example, if a defendant lacks significant market power, economic theory says that it lacks the ability to cause consumer harm, so the inquiry should end there. Similarly, if a defendant's tying arrangements or exclusive contracts do not actually foreclose rivals, anticompetitive effects are also unlikely. Again, the inquiry should be terminated.

The "predatory pricing test" prevailing in the United States since Brooke Group is structured along the lines we have suggested. Two screens are applied. First, one determines whether the prices are below a reasonable measure of the seller's costs. Second, one asks whether there is a "reasonable prospect, or, under § 2 of the Sherman Act, a dangerous probability, of recouping its investment in below-cost prices,"50

This test fails to identify all possible price predation practices but follows from the view that it is better to err by allowing some predatory pricing than to condemn some competitive pricing. The Supreme Court has properly moved to a stricter standard for showing predation because (a) setting prices low is a hallmark of competition (so that the cost of falsely condemning legitimate price cutting is high) and (b) successful predation is rare (so that the likelihood of false acquittals is low).51

The European Court of Justice's "exceptional circumstances test" utilized in Radio Telefis Eireann and Independent Television Publications Ltd v Commission of the European Communities52 (Magill) and IMS Health GmbH & Co v NDC Health GmbH & Co KG53 is also structured this way. The court compels licensing of intellectual property only if (1) it is indispensable for firms if they are to compete in a secondary market, (2) the failure to license the intellectual property would eliminate competition in that secondary market, (3) the intel-

50 Brooke Group, 509 US at 224.
51 See, for example, John S. McGee, Predatory Price Cutting: The Standard Oil (N.J.) Case, 1 J L & Econ 137 (1958); John R. Lott, Jr., Are Predatory Commitments Credible?: Who Should the Courts Believe? (Chicago 1999) (suggesting that what competitors often claim is predation is often just ordinary competition). For an alternative view, see Malcolm R. Burns, Predatory Pricing and the Acquisition Cost of Competitors, 94 J Polit Econ 266 (1986) (arguing that predation reduces the cost to a firm of acquiring its competitors).
52 1995 ECR I-743, 785 (Court of Justice Apr 6, 1995) (joining Cases C-241/91P and C-242/91P) (holding that in exceptional circumstances, the refusal to grant an intellectual property license to a competitor can be an abuse of a dominant position).
53 Case C-418/01, 2004 ECJ CELEX LEXIS 166 (Court of Justice Apr 29, 2004) (refining the holding in Magill).
lectual property is needed to create a new product for which there is likely consumer demand, and (4) there is no objective justification for refusing to license it. We have argued elsewhere that these conditions limit compulsory licensing to cases in which the prospective social benefits are so large that they offset the chilling effect on incentives to innovate.

Both the predatory pricing test and the exceptional circumstances test can be viewed as "modified per se legality" rules. The practices (pricing low, refusing to license a competitor) are presumed to be legal even for firms with monopoly power unless the plaintiff can make a very compelling case. Not surprisingly, there have been no successful prosecutions of predatory pricing claims in the United States since Brooke Group, and only one successful attempt to compel licensing of intellectual property under EU law (the licensing of television listings sought by Magill).

III. IMPLICATIONS FOR TYING DOCTRINE

Tying was long treated as a per se offense in the United States. In an early decision that epitomizes the pre-Chicago approach, Justice Frankfurter wrote that tying agreements "serve hardly any purpose beyond the suppression of competition." Then in 1984, the Supreme Court came close to eliminating the per se rule in Jefferson Parish; four justices advocated a rule of reason. But the majority decided, "It is far too late in the history of our antitrust jurisprudence to question the proposition that certain tying arrangements pose an unacceptable risk of stifling competition and therefore are unreasonable 'per se.'"

Instead the Court required that a tying allegation pass several screens before being considered illegal on its face—a modified per se illegality standard. Tying is also an abuse of dominance under Article 82 of the European Communities Treaty. The European approach is

54 Id. See also Christian Ahlborn, David S. Evans, and A. Jorge Padilla, The Logic and Limits of the "Exceptional Circumstances Test" in Magill and IMS Health (working paper Sept 2004).
55 See Ahlborn, Evans, and Padilla, Logic and Limits (cited in note 54). The Supreme Court also seems to have moved to a modified per se legality standard for the refusal to share property. See Trinko, 540 US 398.
56 Magill, 1995 ECR I-743 at 785 (finding that a compulsory license was "essential in order to maintain effective competition").
59 Treaty of Amsterdam Amending the Treaty on European Union, the Treaties Establishing the European Communities and Certain Related Acts, Art 82, 40 Off J Eur Communities (C 340) 147 (Oct 2, 1997).
similar in many respects to the U.S. approach, and we assume the two are identical for the purposes of this discussion.\textsuperscript{60}

Courts and enforcement agencies have never taken Justice Frankfurter's condemnation literally.\textsuperscript{61} If they did, they would be deluged with cases, and the economy would grind to a halt. For tying is pervasive, and, as we discuss below, there is seldom a principled basis for distinguishing ties that fail the modified per se illegality standard from ones that are never challenged.

Yet tying claims can have profound economic effects. In April 2003, for instance, MasterCard and Visa settled an antitrust case in which a certified class of some five million merchants claimed that the payment card associations had illegally tied merchant acceptance of their debit cards to acceptance of their credit cards. After a district court found on summary judgment that the associations failed some of the criteria set forth in \textit{Jefferson Parish},\textsuperscript{62} the associations agreed to allow merchants to accept credit and debit independently and to pay $3 billion in damages.\textsuperscript{63} And in March 2004, the European Commission found that Microsoft committed a tying violation by failing to market a version of its Windows PC operating system without media player technology.\textsuperscript{64} Microsoft's ability to include and integrate new features, beyond media player technology, in its operating system would be affected significantly if the European courts affirm the Commission's analysis.\textsuperscript{65}

\textsuperscript{60} See Christian Ahlborn, David S. Evans, and A. Jorge Padilla, \textit{The Antitrust Economics of Tying: A Farewell to Per Se Illegality}, 49 Antitrust Bull 287, 315–18 (2004) (noting that U.S. and EC tying law "use[] almost the same analytical framework" but that current EC competition law more closely resembles a per se rule).

\textsuperscript{61} For an overview of the Supreme Court's positions in tying cases throughout the past century, see Victor H. Kramer, \textit{The Supreme Court and Tying Arrangements: Antitrust as History}, 69 Minn L Rev 1013 (1985).

\textsuperscript{62} See \textit{In re Visa Check/Mastermoney Antitrust Litigation}, 2003 US Dist LEXIS 4965 (ED NY). The first author was a consultant to Visa U.S.A. in this matter.

\textsuperscript{63} The payments are to be made over ten years, with a present discounted value of approximately $2.2–$2.6 billion. See Howard H. Chang, David S. Evans, and Richard Schmalensee, \textit{The Retailer Class Action Case Against the Card Associations}, 2 Payment Card Econ Rev 123,126 (2004).

\textsuperscript{64} Case COMP/C-3/37.792, \textit{Microsoft}, Commission Decision of 24 Mar 2004, online at http://www.europa.eu.int/com/competition/antitrust/cases/decisions/37792/en.pdf (visited Dec 10, 2004). Microsoft has appealed this decision to the Court of First Instance (CFI). \textit{Microsoft Corp v Commission}, Case T-201/04 (Court of First Instance 2004). The appeal is still pending. Both authors made written and oral submissions to the Commission on behalf of Microsoft during the investigation as well as to the CFI on Microsoft's motion for annulment.

\textsuperscript{65} The Commission rejected a settlement negotiated by the staff because it wanted to establish a legal precedent that would govern Microsoft's ability to integrate new features in Windows. See \textit{Commissioner Monti's Statement on Microsoft} (Mar 18, 2004), online at http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/04/365&format (visited Dec 10, 2004) (noting that a precedent with "clear principles" would be beneficial to consumers and
Today, both the law and the economics of tying are best described as confused. There is little support among economists for the modified per se illegality standard applied in the United States and Europe since it does not correspond to any theory that could be used to distinguish procompetitive from anticompetitive tying. Yet economics has not provided sharp tests for distinguishing anticompetitive from procompetitive tying that could provide the courts with clear guidance. This is fertile ground for the neo-Chicago approach proposed in this Essay.

A. Prior Beliefs on Efficiencies

Tying covers a range of circumstances. Consider components A and B, which firms could sell separately or as a single product AB. Tying occurs in an economic sense when firms offer AB but do not sell one or both components separately. In *Jefferson Parish*, A was hospital surgical services and B was anesthesiology services. Patients buying surgical services were not permitted to bring in their own anesthesiologists.

Tying, in the economic sense of the term, is everywhere. Cars only come with air conditioners, mobile phones with ring tones, newspapers with arts sections, law school curricula with courses on torts, computer operating systems with internet-communication protocols, and cameras with built-in flashes. In some cases consumers can only get the bundle (newspapers with arts sections), while in others they can get the bundle (mobile phones with ring tones) as well as the components (extra ring tones). Sometimes the components are available from different suppliers than the bundle.

There are obvious business reasons why firms offer A and B together. These include benefits of integration, economies of scope in distributing products, packaging cost savings, reduced transaction costs for businesses and consumers, and increased reliability for consumers. A firm that offers AB would only sell A and B separately as well if there were sufficient demand to cover the costs. If the fixed costs of offering B are high relative to the demand for B, a firm may decide to offer only AB and A. It therefore ties the purchase of B to the pur-
chase of A. If consumers generally use A and B together, they may find it is cheaper and more convenient to buy them together. Even if the fixed costs of offering A and B separately are modest, if there are few potential takers, firms will only offer AB.69

Thus, while hard economic evidence is limited, casual empiricism suggests that tying typically does yield efficiencies. And the fact that tying persists in competitive markets suggests that it must result in lower prices or better quality. These sources of efficiency remain, regardless of the degree of market power of the firm engaging in the practice.

B. Prior Beliefs on Anticompetitive Intent and Effect

As noted earlier, firms with a monopoly in X prefer that complementary product Y be supplied at the lowest possible price. They will lose profits in the short run if they tie for any reason other than efficiency. And they may lose profits in the long run, too, even if they are able to use tying to inhibit competition.70

Dennis Carlton and Michael Waldman analyze the impact of tying to protect an initially monopolized market from competitive entry.71 In their model, entry takes more time in one market than the other, and there are economies of scope from selling in both markets. By reducing the profitability of being in one market only, tying may deter entry in either or both markets.

This model, and similar ones, is useful in identifying the conditions necessary for tying to be a competitive problem.72 However, their practical value is limited because the data is rarely adequate to determine whether a tie will actually reduce welfare. As Carlton and Waldman note:

[T]rying to turn the theoretical possibility for harm . . . into a prescriptive theory of antitrust enforcement is a difficult task. For example, the courts would have to weigh any potential efficiencies from the tie with possible losses due to foreclosure, which by itself is challenging due to the difficulty of measuring both the relevant efficiencies and the relevant losses.73

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70 See Rey and Tirole, A Primer on Foreclosure (cited in note 17).
72 Ahlborn, Evans, and Padilla present a structured rule of reason test that is based on the necessary conditions for welfare-reducing tying found by Whinston, as well as Carlton and Waldman. See Ahlborn, Evans, and Padilla, 49 Antitrust Bull at 330–36 (cited in note 60).
Tying may be used for the anticompetitive reasons described in the post-Chicago literature. Or it could be used nefariously in ways that economists have yet to imagine. However, a balanced reading of the post-Chicago literature suggests that firms with the ability to tie anticompetitively often do not have an incentive to do so, and those with the incentive often fail to have the power to cause harm to competition. Our prior belief, therefore, is that firms generally engage in tying because it is efficient.

C. Prior Belief on Error Costs

Condemning procompetitive tying wipes out the efficiencies provided by tying in the cases considered by the courts, increases the likelihood that the courts will condemn similar tying arrangements in other cases, and deters all firms from providing efficiencies through tying arrangements that subsequently seem vulnerable to legal challenge. Conversely, the courts’ failure to condemn anticompetitive tying increases the likelihood that a firm with monopoly power in one market will obtain a monopoly in an adjacent market or perpetuate its existing monopoly—in both cases restricting output and reducing economic efficiency. Moreover, other monopolies will not be deterred from engaging in similar anticompetitive behavior, leading to additional losses.

It is not possible to compare these error costs precisely. However, some limited insights into the likelihood and direction of errors comes from a recent study by Barry Nalebuff and David Majerus. They reviewed eleven tying cases in the United States and Europe, assessing whether the courts judged correctly. Nalebuff and Majerus are more disposed than we are to the view that tying is anticompetitive. There-
fore, they are more likely to conclude that tying is anticompetitive than are those who share our prior beliefs about efficiencies and anticompetitive intent. Table 2 summarizes their conclusions.

### TABLE 2
A Decision-Theoretic Perspective on Nalebuff and Majerus (2003)

<table>
<thead>
<tr>
<th>Harmful to competition</th>
<th>Illegal</th>
<th>Legal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Four (36%)</td>
<td>None (0%)</td>
</tr>
<tr>
<td>Not harmful to competition</td>
<td>Three (27%)</td>
<td>Four (36%)</td>
</tr>
</tbody>
</table>

This is a small sample. But it comprises the leading cases in the United States and the European Union, and the authors' judgments are striking. There are no instances in which the courts found that an anticompetitive tying practice (by the authors' judgment) was legal—that is, there were no false acquittals. There are three instances in which the courts found that a procompetitive tying practice was illegal—the rate of false convictions was therefore 27 percent. Assuming that each type of error is equally costly—denote the error cost per case by $c$—the expected error cost per case is $0.27c$.

The distribution of cases in Table 2 suggests that existing tying law does not come close to minimizing error costs. To see why, suppose we made the existing standard stricter, decreasing the likelihood of false convictions by 20 percentage points while increasing the likelihood of false acquittals by 20 percentage points. This would result in the error-cost matrix in Table 3.

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*Entry Barrier, 119 Q J Econ 159, 183 (2004) (concluding that a monopolist “has incentives to bundle, either as a way to achieve better price discrimination . . . or to help save costs”).*

*Evans, Padilla, and Salinger argue that the actual percentage of false convictions is probably much higher. Evans, Padilla, and Salinger, *A Pragmatic Approach* (cited in note 76).*

*Table 2 shows that of the eleven tying cases examined, 64 percent (7/11) were not harmful to competition and 36 percent (4/11) were harmful. For a harmful act, the existing standard will correctly condemn it 100 percent (4/4) of the time and falsely exonerate it 0 percent of the time (0/4). Similarly, for a nonharmful act, the existing modified per se illegality standard will correctly exonerate it 57 percent (4/7) of the time and falsely condemn it 43 percent of the time (3/7).*
Errors are now made 22 percent of the time (7 percent false acquittals plus 15 percent false convictions), so that the expected error cost per case is lower under the new standard—0.22c compared to 0.27c. This calculation is only an illustration. But it does confirm our intuition that because most cases involve harmless practices, we should err toward a standard that is more likely to result in false acquittals than false convictions. Moreover, since we suspect that the cost of false convictions is higher than the cost of false acquittals, the illustration offers reasons to move toward an even stricter legal standard for condemning tying.

D. Design of Legal Rules

Based on the prior beliefs outlined above, we can discard two extreme approaches for assessing tying practices. We can reject a per se illegality standard—the pre-Chicago approach—on the grounds that tying is generally procompetitive. While the Nalebuff-Majerus work implies that two-thirds of the cases they examined involved practices that were not harmful to competition, a per se illegality test would result in all of them being condemned. We may also be able to reject, although less confidently, a per se legality standard—the Chicago School approach—on the grounds that tying could be used anticompetitively. The Nalebuff-Majerus results find that roughly one-third of their cases involved anticompetitive ties.

80 If the cost of false convictions were substantially higher than the cost of false acquittals, a per se legality rule might well be optimal under certain circumstances. With per se legality, the four cases of anticompetitive tying in Table 2 from the Nalebuff-Majerus analysis would become false acquittals (with no false convictions), compared to the three false convictions (with no false acquittals) under prevailing legal standards. If false convictions were more than four-thirds as costly as false acquittals, then a per se legality standard would be preferable. We also note that a
Two other possible standards, which impose significant hurdles to a finding of anticompetitive tying, are consistent with our approach to the design of legal rules. A modified per se legality standard would presume that tying is procompetitive unless the plaintiff offered compelling evidence that tying was used mainly to obtain or maintain a monopoly. Such evidence would require a significant demonstration of a causal link between the practice and a likely reduction in consumer welfare. Tying could be found illegal only in exceptional circumstances.  

Alternatively, a structured rule of reason approach would employ a series of screens to focus only on tying practices that could plausibly result in anticompetitive behavior. A plaintiff would need to show:

1. An anticompetitive effect is possible. A number of safe harbors would allow ties where they are unlikely to be anticompetitive, such as cases in which the defendant lacked market power in the tying product.
2. An anticompetitive effect is plausible. An economic theory of anticompetitive effect must fit the facts of the case.
3. Offsetting efficiency benefits are insubstantial.

E. The Role of Efficiencies in Choosing Between Standards  
The choice between a structured rule of reason approach and modified per se legality is difficult, and the best approach may depend on the class of tying arrangements under consideration. A modified per se legality rule will result in more false acquittals. The cost of false acquittals must be compared to the cost of the additional administrative costs of screening as well as the costs of false convictions from applying the structured analysis.

The structured rule of reason would be most useful in extreme situations—that is, cases in which it is clear after the first few screens that the alleged anticompetitive effects are highly implausible, but there is convincing evidence supporting efficiency benefits. Or when the tie survives the two first screens, and no efficiencies can be rigorously argued. Otherwise, it may prove inconclusive.

The efficiency properties of tying arrangements should thus play a paramount role in the adoption of a standard. Evans and Salinger find in their study of competitive tying that efficiencies are likely present in the cases they examine—in part because the structure of the complete analysis would also have to consider a range of factors not included here, such as "errors" that do not get to court and the impact of changing legal standards on firms' behavior.

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81 See Ahlborn, Evans, and Padilla, 49 Antitrust Bull at 319–20 (cited in note 60).
82 Id at 329–36.
markets makes other explanations implausible—but are difficult to quantify.\footnote{Evans and Salinger, 22 Yale J Reg (forthcoming 2005) (cited in note 35).} The same is likely true for tying by firms with market power. To minimize errors, Evans and Salinger suggest that defendants should bear the initial burden of offering efficiency explanations for their practices, but that plaintiffs should bear the burden of showing that the efficiency explanations are invalid.\footnote{See Evans and Salinger, 22 Yale J Reg (forthcoming 2005) (cited in note 35).}

Efficiencies are apparent in several leading tying cases, but with one exception their presence was ignored or rebuffed by the courts. In the Jefferson Parish district court decision,\footnote{Hyde v Jefferson Parish Hospital District No 2, 513 F Supp 532 (ED La 1981), revd, 686 F2d 286 (5th Cir 1982), revd, 466 US 2 (1984).} the court agreed with the defendant that the anesthesiology system in place was efficient because it provided twenty-four-hour coverage, and a closed group of physicians, nurses, and technicians provided for better standardization of procedures, monitoring of staff, and maintenance of equipment.\footnote{Jefferson Parish, 513 F Supp at 540.} That seems plausible to us and consistent with transaction cost economics.\footnote{For a discussion of the transaction cost economics of firms, see Joskow, 18 J L, Econ, & Org at 96–97 (cited in note 31); Don Waldman and Elizabeth Jensen, Industrial Organization: Theory and Practice 54–57 (Addison-Wesley 1998).} But the Fifth Circuit rebuffed it, noting that anesthesiologists testified they would have been willing to provide twenty-four-hour coverage without a contract and that the defendants had not adequately demonstrated that other alleged efficiencies existed and could not be achieved through less restrictive means.\footnote{Jefferson Parish, 686 F2d at 292.}

The Supreme Court never seriously considered the efficiency defense in Jefferson Parish, finding for the hospital on the grounds that it lacked market power.\footnote{466 US at 32–33.} By contrast, it recognized in Times-Picayune Publishing Co v United States\footnote{345 US 594 (1953).} that a newspaper created efficiencies by requiring advertisers to place ads in both the morning and evening

\footnote{83 Evans and Salinger, 22 Yale J Reg (forthcoming 2005) (cited in note 35). The D.C. Circuit concluded that the single-product test in Jefferson Parish was a proxy for determining whether there are efficiencies. United States v Microsoft Corp, 253 F3d 34, 87 (DC Cir 2001). The economics of tying explains why that is not correct. Consider a situation in which A is the tying product, B is the tied product, and AB is the combination. The Jefferson Parish test looks at whether there is separate demand for B. That focuses on the wrong question. Tying is a violation because the firm did not offer the tying product A in addition to the tied combination AB. The question is therefore whether the failure to offer that separate choice (that is, not offering A separately and allowing customers to supply their own B) is driven by efficiency reasons. Many competitive products would fail the single-product test because they consist of bundles (AB) for which components or spare parts are available separately.}

\footnote{84 See Evans and Salinger, 22 Yale J Reg (forthcoming 2005) (cited in note 35).}

\footnote{85 Hyde v Jefferson Parish Hospital District No 2, 513 F Supp 532 (ED La 1981), revd, 686 F2d 286 (5th Cir 1982), revd, 466 US 2 (1984).}

\footnote{86 Jefferson Parish, 513 F Supp at 540.}

\footnote{87 For a discussion of the transaction cost economics of firms, see Joskow, 18 J L, Econ, & Org at 96–97 (cited in note 31); Don Waldman and Elizabeth Jensen, Industrial Organization: Theory and Practice 54–57 (Addison-Wesley 1998).}

\footnote{88 Jefferson Parish, 686 F2d at 292.}

\footnote{89 466 US at 32–33.}

\footnote{90 345 US 594 (1953).}
Nevertheless, the Court’s main reason for ruling in favor of the newspaper was lack of market power in the advertising market.\(^9\)

In EU tying cases, there has been no successful defense based on efficiencies, although there have also been few cases.\(^9\) For example, in *Eurofix-Bauco v Hilti*,\(^4\) the defendant argued that the reliability and safety of its nail gun system was enhanced by tying the sale of nail guns to nails.\(^9\) The European Commission rejected Hilti’s justification on the grounds that there were less restrictive means to the same ends.\(^9\) The European courts affirmed the Commission’s decision. However, as Nalebuff and Majerus observe, Hilti’s efficiency justification is more plausible than the Commission’s theory of anticompetitive behavior.\(^7\) Hilti customers also had to purchase Hilti cartridges over which Hilti had intellectual property rights that precluded entry from competing suppliers. Hilti could earn all that it could earn through pricing its guns and cartridges and therefore had no reason to seek a monopoly in nails. It is the poster child for the single-monopoly-profit theorem.

CONCLUSION

Our proposed approach provides a unifying framework for evaluating unilateral practices. It draws on research by both Chicago and post-Chicago scholars, and is consistent with some of the seminal court decisions in the United States and the European Union. While this approach imposes some coherence on antitrust law, it also offers some flexibility. First, it does not require that the same form of rule apply to every practice. Prior judgments on the procompetitive and anticompetitive uses of a practice can influence the choice of rule as well as the screens used to minimize error costs. Second, the same analytic framework could be used for different presumptions. Indeed, this approach offers a rigorous way of analyzing whether and to what extent antitrust rules should vary across jurisdictions, practices, and time.

It is unrealistic to ask economics to provide off-the-shelf guidance for the myriad situations encountered in real-life antitrust. But economics could be made more useful in separating good from bad.

91 Id at 623.
92 Id at 611–12.
93 See Ahlborn, Evans, and Padilla, 49 Antitrust Bull at 314 (cited in note 60).
95 Id ¶ 52.
96 Id ¶ 88.
Although the game-theoretic approach embraced by the post-Chicago literature is valuable in helping to understand business practices, it has yet to demonstrate a capacity to produce what we would call identification theorems—useful descriptions of the circumstances determining whether a practice is procompetitive or anticompetitive.

Kovacic and Shapiro conclude their survey of the first century of antitrust by noting, “The availability of new data sources like electronic point-of-purchase data, the refinement of flexible game-theoretic models, and the new emphasis on innovation assures that robust arguments over the proper content of competition policy will flourish in the 21st century.”98 Yet in the five years since those words were published, we have seen very little progress in the theoretical literature that would help regulators and courts separate procompetitive from anticompetitive behavior.

The neo-Chicago approach described in this Essay points to a research agenda for economists that could help provide the guidance now lacking. Economists need to better understand the extent to which nondominant firms engage in the kinds of business practices that become suspect when they are used by firms with market power, and why competitive firms engage in these practices. This will help to determine whether there are plausible efficiencies from those practices, as well as to inform judgments about the likely importance of those efficiencies. More generally, economists need to develop theory and empirical practice that can help assess the cost and likelihood of errors (of both kinds) in assessing the consequences of unilateral business behavior. It may be possible to develop more identification theorems that can be used to separate procompetitive from anticompetitive practices.

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98 Kovacic and Shapiro, 14 J Econ Perspectives at 58–59 (cited in note 7).