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## A Framework for Analyzing Predatory Pricing Policy\*

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Recent literature on the law and economics of antitrust has devoted increasing attention to the issue of "predatory pricing"—a dominant firm's use of price to restrict competition by driving out existing rivals or excluding potential ones. A number of scholars—including Areeda and Turner, Baumol, Bork, Posner, Scherer, and Williamson—have contributed to this discussion,<sup>1</sup> and each has taken a different

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1. The current discussion began with proposals made by Professors Phillip Areeda and Donald Turner in the mid-1970s. See Areeda & Turner, *Predatory Pricing and Related Practices under Section 2 of the Sherman Act*, 88 HARV. L. REV. 697 (1975) [hereinafter cited as *Areeda-Turner Proposal*]. A year later, Professor Frederick Scherer commented on the Areeda-Turner contribution and made proposals of his own. See Scherer, *Predatory Pricing and the Sherman Act: A Comment*, 89 HARV. L. REV. 869 (1976) [hereinafter cited as *Scherer Proposal*]. A debate between Areeda and Turner and Scherer ensued. See Areeda & Turner, *Scherer on Predatory Pricing: A Reply*, 89 HARV. L. REV. 891 (1976) [hereinafter cited as *Areeda & Turner on Scherer*]; Scherer, *Some Last Words on Predatory Pricing*, 89 HARV. L. REV. 901 (1976) [hereinafter cited as *Scherer Response*]. A year later, Professor Oliver Williamson introduced an analysis that led him to a new substantive proposal. See Williamson, *Predatory Pricing: A Strategic and Welfare Analysis*, 87 YALE L.J. 284 (1977) [hereinafter cited as *Williamson Proposal*]. Williamson also engaged in a debate with Areeda and Turner. See, e.g., Areeda & Turner, *Williamson on Predatory Pricing*, 87 YALE L.J. 1337 (1978) [hereinafter cited as *Areeda & Turner on Williamson*]; Williamson, *Williamson on Predatory Pricing II*, 88 YALE L.J. 1183 (1979) [hereinafter cited as *Williamson Response*]. Most recently, Professor William Baumol has proposed another approach to predatory pricing. See Baumol, *Quasi-Permanence of Price Reductions: A Policy For Prevention of Predatory Pricing*, 89 YALE L.J. 1 (1979).

Aside from these four proposals, several other positions are evident in the literature.

approach to the predatory pricing problem. A variety of different "rules" have been suggested, and these suggestions have played key roles in the decision of recent Sherman Act and Federal Trade Commission Act cases.<sup>2</sup> Although each author discusses the approaches of writers who have preceded him and although the opinions in the cases have compared the various approaches, no unified structure has been provided for evaluating the alternative approaches and choosing among them.

It is not always clear from the discussions in the respective contributions exactly why the several authors have been led to different conclusions. In fact a variety of factors seem to account for the divergent positions at which they arrive. First, the various commentators rely on alternative theoretical models.<sup>3</sup> Some of them use a static framework<sup>4</sup> to examine firm behavior, while others concentrate on

*See, e.g.,* R. BORK, THE ANTITRUST PARADOX 149-55 (1978) (suggesting predatory price cutting is unlikely to exist and any rule prohibiting it is likely to harm consumers more than the absence of any legal sanction); R. POSNER, ANTITRUST LAW: AN ECONOMIC PERSPECTIVE 188, 191 (1976) (suggesting that predatory pricing is most usefully defined as "pricing at a level calculated to exclude from the market an equally or more efficient competitor" and suggesting as a safeguard that plaintiff be required to show relevant market has characteristics—many purchasers, or defendant operating in more markets than competitors or potential entrants—predisposing it to effective predatory pricing) [hereinafter cited as POSNER BOOK].

Finally, attention has been given to predatory pricing in general works on antitrust law and policy. *See, e.g.,* 3 P. AREEDA & D. TURNER, ANTITRUST LAW ¶¶ 711-722 (1978) [hereinafter cited as AREEDA-TURNER TREATISE]; POSNER, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925, 939-44 (1979) [hereinafter cited as *Posner Article*].

2. *See, e.g.,* *Hanson v. Shell Oil Co.*, 541 F.2d 1352, 1358-59 (9th Cir. 1976), *cert. denied*, 429 U.S. 1074 (1977) (applying Areeda-Turner rules in Sherman Act § 2 case); *International Air Indus., Inc. v. American Excelsior Co.*, 517 F.2d 714, 723-26 (5th Cir. 1975), *cert. denied*, 424 U.S. 943 (1976) (applying Areeda-Turner rules in predatory pricing case brought under Robinson-Patman Act); *Borden, Inc.*, [1978] TRADE REG. REP. (CCH) ¶ 21,490 (FTC cease and desist order with multiple opinions discussing and applying various rules from predatory pricing literature).

3. Professor Richard Schmalensee has pointed out that often a multitude of economic models can provide potential frameworks for analysis of any particular issue in an antitrust case. *See* Schmalensee, *On the Use of Economic Models in Antitrust: The RealLemon Case*, 127 U. PA. L. REV. 994, 995-97 (1979). He notes that choosing among models may be difficult:

Because the literature contains a host of internally coherent models with different assumptions and implications, and because the methods of economic analysis can be used to construct new models, analysis of any particular industry or behavior pattern may pose difficult problems of model selection. Often such problems can only be dealt with satisfactorily by creative theoretical analysis, along with careful organization and evaluation of available evidence.

*Id.* at 996. Professor Schmalensee illustrates the importance of model selection by examining how some economic issues were treated in the Federal Trade Commission's Initial Decision of *Borden, Inc.*, [1976] 3 TRADE REG. REP. (CCH) ¶ 21,194, *modified*, [1978] TRADE REG. REP. (CCH) ¶ 21,490. *See* Schmalensee, *supra*, at 998-1043.

4. *See* R. BORK, *supra* note 1, at 149-52; *Areeda-Turner Proposal*, *supra* note 1, at 703-20. Static analysis examines the behavior of economic agents at a single moment.

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strategic aspects in a dynamic context.<sup>5</sup> Some authors, in discussing social goals, focus on short-run social welfare maximization,<sup>6</sup> while others are more explicitly concerned with long-run social welfare maximization.<sup>7</sup>

Second, the different policy conclusions are at least partially the result of different empirical guesses about market characteristics. Consider two examples: first, if one believes that predatory pricing is a rare event, he will be led to a very different policy recommendation than will someone who believes it is a much more common occurrence; second, if one believes that dominant firms frequently produce under conditions of excess capacity, rather than at or above the level for which their plants are best-suited, he will be led to a policy decision that is quite different from the conclusion derived from the opposite empirical guess.<sup>8</sup>

A third factor is the commentator's views of the ease with which legal controls on price or output can be administered. Although al-

5. See, e.g., *Scherer Proposal*, *supra* note 1, at 871-75 (use of preemptive entry deterrence in form of output expansion by dominant firm); *Williamson Proposal*, *supra* note 1, at 292-302 (establishing dynamic, strategic framework of analysis). Dynamic analysis focusing on strategic behavior examines the incentives and behavior of economic agents who take into account the intertemporal effects of their actions.

An example of strategic behavior in a multi-period context is "dynamic limit pricing." See Gaskins, *Dynamic Limit Pricing: Optimal Pricing under Threat of Entry*, 3 J. ECON. THEORY 306 (1971). A dominant firm pursuing a dynamic limit pricing strategy sets price in each period below the level that would maximize profits in that period but at a level that will serve to maximize long-run discounted profits. (For an explanation of discounting, see note 30 *infra*.) Setting each period's price at its short-run profit-maximizing level generally will not maximize long-run profits because the entry induced by high current prices will erode the dominant firm's market power and its ability to charge supranormal prices in later periods. For a detailed discussion of various forms of limit pricing behavior, see F. SCHERER, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 219-30 (1970).

6. See *Areeda & Turner on Scherer*, *supra* note 1, at 896-97 (defending focus of original Areeda-Turner proposal on short-run welfare maximization: "long-run possibilities must be disregarded because they are intrinsically speculative and indeterminate. No suitable administrable rules could be formulated to give them recognition."). Short-run welfare maximization focuses on current welfare gains and losses and does not take into account those that will occur in the future.

7. See, e.g., *Scherer Proposal*, *supra* note 1, at 883-86 (arguing that long-run rather than short-run welfare maximization is proper criterion); *Williamson Proposal*, *supra* note 1, at 306-10 (examining welfare effects both before and after entry). Long-run welfare maximization considers both present and future welfare gains and losses.

8. A commentator's judgment about how likely or unlikely it is for a dominant firm to be operating above its optimal scale and to be charging a price somewhere between its average cost and its marginal cost is also crucial for the kind of policy recommendation that is made. Compare *Areeda-Turner Proposal*, *supra* note 1, at 705 n.22 (case where price equals or exceeds average cost but is less than marginal cost is "unusual") with *Scherer Proposal*, *supra* note 1, at 872-73 (production at above optimal scale with price greater than average cost but less than marginal cost may deter entry and yet pass Areeda & Turner's "price greater than average variable cost" test; this situation is "more apt to occur in the real world than the 'excess capacity' case" that Areeda & Turner consider "more typical and more important").

most all of the contributors to the recent literature voice dismay at the prospect of instituting anything that resembles public-utility regulation for dominant firms, they hold substantially different views of the degree of control that is feasible within the current framework of antitrust institutions.<sup>9</sup>

Fourth, the writers differ on the question of institutional competence; different authors have different conceptions about what courts can do well,<sup>10</sup> what kinds of information they can process, and what issues are "too speculative" for judges or juries to decide.<sup>11</sup> Of course, similar questions can be raised about the capability of administrative agencies.

Fifth, in framing a policy or an approach, different authors attach different weights to the importance of having a simple per se rule instead of a rule-of-reason approach. A per se rule not only limits the complexity of case-by-case inquiry and analysis, but also is supposed to generate accurate and consistent results when applied by judges and juries. As a result, it is argued that a simple per se rule gives clear signals to firms as to what constitutes legal pricing behavior and what does not.<sup>12</sup> On the other hand, a detailed case-by-case analysis associated with a rule-of-reason approach permits consideration of the variety of specific structural and behavioral aspects of the particular dominant firm's situation that are relevant to a determination of whether the firm was violating the antitrust laws.<sup>13</sup> The rule-of-reason approach, its proponents would argue, allows the decisionmaker to go beyond loose language and mechanical rules to the specific conduct of the dominant firm and the implications of that

9. Compare *Scherer Response*, *supra* note 1, at 902-03 (Scherer proposal would not be too complex for courts to use; companies have good grasp on required data and costs of obtaining it would be comparable with other antitrust cases) with R. BORK, *supra* note 1, at 154-55 (items on Scherer's list for consideration "that would not be altered by the monopolist's knowledge of the rules are unknowable by either courts or economists;" list is not "fit for judicial employment") and *Areeda & Turner on Scherer*, *supra* note 1, at 897 (given Scherer's "formidable list of the relevant variables" there is "no realistic way" that courts could make findings required by Scherer proposal) and *Williamson Proposal*, *supra* note 1, at 288 n.16 (agreeing with Areeda & Turner criticism of Scherer on institutional feasibility).

10. See note 9 *supra*. Compare *Areeda & Turner on Williamson*, *supra* note 1, at 1345-50 (Williamson proposal would be harder for courts to enforce than Areeda-Turner proposal) with *Williamson Response*, *supra* note 1, at 1191-97 (Areeda-Turner proposal would be harder for courts to enforce than Williamson proposal).

11. See notes 6 & 9 *supra*.

12. See *Areeda & Turner on Scherer*, *supra* note 1, at 897; cf. *Areeda & Turner on Williamson*, *supra* note 1, at 1351 (because proving predatory pricing or its absence is difficult, "relatively arbitrary rules are necessary to minimize administrative difficulties").

13. See *Scherer Response*, *supra* note 1, at 902-03; *Scherer Proposal*, *supra* note 1, at 890.

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conduct for economic efficiency and other goals of antitrust law.<sup>14</sup>

A related factor that may lead to differing conclusions, and the last one we will mention here, is the degree of concern about the litigiousness of market participants. Some commentators are very concerned about the use of private treble damage suits against alleged predators when such suits are of dubious merit. Others, while worried about such suits, are also concerned about how dominant firms will respond to particular predatory pricing rules in an attempt to avoid litigation.<sup>15</sup>

This list of possible reasons for different policy recommendations with regard to predatory pricing is not exhaustive. It is clear that a large number of diverse factors play a part in the presentation of the several policy conclusions, and thus it seems important to develop a comprehensive framework for comparing and evaluating alternative approaches to the predatory pricing problem. Each of the factors we have just noted as relevant is incorporated in the decision-theoretic<sup>16</sup> framework developed here. The analytical structure we suggest will make clearer exactly how these various factors and judgments enter into the formulation of a policy toward predatory pricing. Furthermore, it will be apparent as we proceed that this structure also provides a framework for evaluating alternative rules in other areas of antitrust.

In designing a policy toward predatory pricing, one is confronted with the difficult task of inferring long-run market outcomes from observable short-run behavior and short-run market conditions. Any such inference entails uncertainty and hence the possibility of error; an assessment of long-run considerations is necessarily "speculative and indeterminate."<sup>17</sup> Nevertheless, such an assessment is required because the essence of predatory pricing is the alleged predator's sacrifice of short-run gains for greater long-run gains.

Consider a particular market, and suppose that we are trying to

14. See *Borden, Inc.*, [1978] TRADE REG. REP. (CCH) ¶ 21,490, at 21,518, 21,523 (Pitofsky, Comm'r, concurring).

15. See *Scherer Proposal*, *supra* note 1, at 883 (Areeda-Turner rules will encourage dominant firms to hold costly excess capacity); *Williamson Proposal*, *supra* note 1, at 295-302 (describing responses of dominant firm to various rules).

16. Decision theory is concerned with making optimal decisions when various aspects of the world are uncertain. See, e.g., M. DEGROOT, OPTIMAL STATISTICAL DECISIONS (1970) (advanced treatment); H. RAIFFA, DECISION ANALYSIS (1968) (elementary treatment). The specific application of decision theory in this article is presented at pp. 218-19 *infra*.

17. *Areeda & Turner on Scherer*, *supra* note 1, at 897. At least one court has agreed with Areeda & Turner and has chosen to ignore long-run considerations in light of the "limitations of the judicial process." *Janich Bros. v. American Distilling Co.*, 570 F.2d 848, 857 n.9 (9th Cir. 1977), *cert. denied*, 439 U.S. 829 (1978).

select a rule that takes long-run considerations into account and that can be applied if and when a charge of predatory pricing is leveled against a firm in this market. The evaluative structure we develop indicates that for each proposed predatory pricing rule one should consider, for this market, the probability of each kind of error<sup>18</sup> the rule can lead to, the cost of each kind of error, and the cost of implementing the policy.

Our decision-theoretic framework directs that we choose the policy that would minimize the sum of the expected costs of error and the costs of implementation that would result if the policy were applied to the market we are considering. If all markets were identical in their structural and behavioral aspects, then having found the optimal predatory pricing rule for one market, we could apply it with confidence to all others. But, as one might expect, different markets are not identical with respect to the features that determine the sum of the expected error costs and the costs of implementation for alternative rules. Hence, our decision-theoretic evaluative mechanism reveals that no single rule will be best for all market situations; if a predatory pricing rule is formulated with one particular market in mind, we cannot be sure that it should be applied to other market situations.

What is needed is an approach that can accommodate important market differences: the characteristics of firms and markets that affect the probabilities of error, the error costs, and the implementation costs of alternative policy approaches. We will demonstrate how consideration of the links between certain firm and market characteristics, on the one hand, and the probabilities of error, error costs, and rule-implementation costs, on the other, can be used to develop a two-tiered "structuralist" rule-of-reason approach to be applied in cases of alleged predatory pricing behavior.

To avoid misunderstanding, it should be emphasized that we are using a decision-theoretic framework as an analytical device for evaluating alternative standards or approaches, under the assumption that each standard or approach evaluated would be applied uniformly to all cases. We are not suggesting that a judge or a jury should go through our evaluative calculus in deciding a particular case. Rather, our examination of alternative policies, and our use of the decision-theoretic framework to evaluate their respective expected performance, leads us to suggest a particular approach to predatory pricing that

18. See pp. 223-24 *infra* (distinguishing the types of errors a rule can generate).

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most appropriately accounts for uncertainty and the costs of making incorrect decisions, *ex ante*. The two-stage rule-of-reason approach we suggest would then be applied uniformly on a case-by-case basis.<sup>19</sup>

### I. Identification of the Predatory Pricing Problem

Although there is a substantial and growing literature and case law on predatory pricing, no definition of predatory pricing seems to have commanded the assent of all concerned.<sup>20</sup> It is fair to say, however, that “predatory pricing” is generally used to describe the adoption of a pricing policy that somehow restricts competition by driving out existing rivals or by excluding potential rivals from the market.<sup>21</sup> The differences in usage arise when this general idea is given specific content.

#### A. Definition of Predatory Pricing

We shall use the following rather simple definition: Predatory pricing behavior involves a reduction of price in the short run so as to drive competing firms out of the market or to discourage entry of new firms in an effort to gain larger profits via higher prices in

19. We are taking a “meta-rule-of-reason” approach to the evaluation of alternative *per se* rules for predatory pricing cases. Our examination of the expected performance of these *per se* rules leads us to argue that no one of them should be adopted as *the* rule for a judge or jury to apply in any particular case. Instead, we will argue that the best way to decide a specific predatory pricing case is by applying a rule of reason, as that is traditionally understood in antitrust law. We will suggest a two-stage structuralist approach as a particular way of organizing a rule-of-reason inquiry in predatory pricing cases.

20. Both courts and commentators have noted that there is no accepted definition of predatory pricing or of attempted monopolization under § 2 of the Sherman Act. *See, e.g., Pacific Eng’r & Prod. Co. v. Kerr-McGee Corp.*, 551 F.2d 790, 795-96 (10th Cir.), *cert. denied*, 434 U.S. 879 (1977) (no definitive standard defining predatory pricing exists in federal law); NATIONAL COMM’N FOR THE REVIEW OF ANTITRUST LAWS AND PROCEDURES, REPORT TO THE PRESIDENT AND THE ATTORNEY GENERAL 144-45 (1979) (scope of Sherman Act § 2 attempted monopolization offense not well-defined) [hereinafter cited as ANTI-TRUST COMMISSION REPORT]. Indeed, one economist who has contributed to the predatory pricing discussion has stated that:

An attempt to provide a universally acceptable definition for a vague term such as “predatory pricing” probably can contribute little. However, the term does relate to a problem that is real and significant—the design of means to permit full and fair competitive measures by the established firm, without foreclosure of entry. Baumol, *supra* note 1, at 26 (footnote omitted).

21. *See, e.g., Areeda-Turner Proposal, supra* note 1, at 697 (predatory pricing exists when there are sales at “unremunerative prices”). At least one court has adopted the Areeda-Turner characterization. *See Janich Bros. v. American Distilling Co.*, 570 F.2d 848, 855 (9th Cir. 1977), *cert. denied*, 439 U.S. 829 (1978). After utilizing the “unremunerative pricing” characterization, the *Janich* court went on to say that “[p]ricing is predatory only where the firm foregoes short-term profits in order to develop a market position such that the firm can later raise prices and recoup lost profits.” *Id.* at 856.

the long run than would have been earned if the price reduction had not occurred.<sup>22</sup>

The predator expects that its entry-impeding, exit-inducing strategy will enable it either eventually to raise prices or to maintain an existing market structure in which prices are above competitive levels for a longer period of time than would be possible if entry were allowed to occur immediately. In either case, the firm pursuing such a strategy does so in the expectation that long-run profits will increase more than enough to compensate for what has been sacrificed in the short run. Predatory pricing behavior, as defined here, may or may not entail actual short-run economic losses for the alleged predator; it almost always imposes short-run losses on some or all of the firm's existing competitors.<sup>23</sup>

### B. *The Goals of Antitrust Law*

The primary objective of antitrust policy is to promote full and fair market competition and to reap the benefits that competition brings with it.<sup>24</sup> Stated in negative terms, the goal is to discourage

22. The definition utilized in this article is similar to that adopted by the Ninth Circuit. See *Janich Bros. v. American Distilling Co.*, 570 F.2d 848, 856 (9th Cir. 1977), *cert. denied*, 439 U.S. 829 (1978); *Hanson v. Shell Oil Co.*, 541 F.2d 1352, 1358 (9th Cir. 1976), *cert. denied*, 429 U.S. 1074 (1977).

23. We might note that there is another version of predatory pricing that may have the same long-run effects on prices and profits but is not calculated to drive other firms from the market or to deter potential entrants. It involves the dominant firm's use of pricing policy to enforce price and market-share controls through "market signals" rather than through more direct collusive devices. Specifically, in a market where there is a dominant firm and a few small fringe firms, the dominant enterprise may use changes in its price to discipline the other firms. The goal is to discourage the fringe firms from breaking effective oligopolistic coordination by reducing prices or trying to draw customers away from the dominant firm. The larger firm, while not necessarily driving the small firms from the market, demonstrates that it can and will inflict serious losses if it chooses to do so. This credible threat is intended to encourage the fringe firms to "toe the line" and follow the dominant firm's supra-competitive pricing policy. Fringe firms may not be forced out of the market but they are effectively given the choice of remaining small and supporting the dominant firm's pricing policy or being forced to leave. See R. BORK, *supra* note 1, at 144.

24. There is, of course, a diversity of views about what the objectives of antitrust policy ought to be and what relative weight economic and noneconomic considerations should be given in designing antitrust policy. In the view of some commentators, economic efficiency should be the only objective of antitrust law. See, e.g., R. BORK, *supra* note 1, at 7-8; POSNER BOOK, *supra* note 1, at 4, 8-22. Others argue that noneconomic considerations and political values are also relevant and important to the interpretation and enforcement of the antitrust laws. See, e.g., Pitofsky, *The Political Content of Antitrust*, 127 U. PA. L. REV. 1051 (1979); Scherer, Book Review, 86 YALE L.J. 974, 980-81 (1977) (reviewing R. POSNER, *ANTITRUST LAW: AN ECONOMIC PERSPECTIVE*). Professor Scherer's extensive writings in industrial organization and antitrust leave no doubt, however, as to the importance he attaches to the economic goals of antitrust. And Commissioner Pitofsky, who argues that, "it is bad history, bad policy, and bad law to exclude certain political values



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monopoly, monopolization, and associated monopoly behavior and the inefficiencies they generate. Given this end, how do we move from our working definition of predatory pricing to a legal rule or standard or approach to cope with such behavior?

A major obstacle to a smooth transition from objective to operational policy is the problematic nature of the "offense" with which we are concerned.<sup>25</sup> First, predatory pricing suits are brought in response to price cuts by a dominant firm. But price cuts are generally thought to reflect the pressure of competition—a good—rather than an attempt to monopolize—a bad. Second, a private predatory pricing action is often motivated by the plaintiff's understandable concern for its own preservation. Such suits tend to confuse the preservation of particular competitors and the corresponding private benefits with the preservation of competition and its attendant social benefits.<sup>26</sup> The natural working of competitive market forces often causes the erosion of particular firms' profits as a result of price competition. Indeed particular firms may be driven out of business. Because preserving particular competitors may well be in conflict with the goal of preserving and fostering competition, private predatory pricing actions carry with them the seeds of protectionist abuse.

The difficulty of formulating a predatory pricing policy that is

in interpreting the antitrust laws," Pitofsky, *supra*, at 1051, believes that although these noneconomic factors should be taken into account, "economic concerns would remain paramount," *id.* at 1075. Indeed, Pitofsky suggests that vigorous antitrust enforcement generally furthers both economic and political goals, at least as he defines political goals, because

[e]limination or containment of monopoly and elimination of unnecessary barriers to entry and unreasonable business practices not only promote economic efficiency but tend to avoid undue concentrations of economic power, to reduce the range of private discretion in the business field, and to minimize the risks of state interference.

*Id.* at 1066. It is at least arguable that this confluence of economic and political goals occurs in designing a policy toward predatory pricing. This Article focuses, as the recent literature on this subject has focused, solely on the economic merits of alternative approaches to the predatory pricing problem.

25. Courts have recognized that predatory pricing is not a well-defined offense. See *Janich Bros. v. American Distilling Co.*, 570 F.2d 848, 855-56 (9th Cir. 1977), *cert. denied*, 439 U.S. 829 (1978); *Pacific Eng'r & Prod. Co. v. Kerr-McGee Corp.*, 551 F.2d 790, 795-96 (10th Cir.), *cert. denied*, 434 U.S. 879 (1977).

The National Commission for the Review of Antitrust Laws and Procedures has noted that it is important in designing Sherman Act standards aimed at attempts to monopolize not to draft rules that can be used "to attack aggressive behavior that increases competition in a market and benefits consumers even at the expense of particular competitors." ANTITRUST COMMISSION REPORT, *supra* note 20, at 149 (footnote omitted).

26. See, e.g., *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 488 (1977); *Brown Shoe Co. v. United States*, 370 U.S. 294, 320 (1962); *Janich Bros. v. American Distilling Co.*, 570 F.2d 848, 855 (9th Cir. 1977), *cert. denied*, 439 U.S. 829 (1978); *Pacific Eng'r & Prod. Co. v. Kerr-McGee Corp.*, 551 F.2d 790, 795 (10th Cir.), *cert. denied*, 434 U.S. 879 (1977).

responsive to our basic concern for preserving and fostering the vitality of competition is increased by the fact that the alleged offense involves a charge of improper *behavior* by the defendant firm. Policy can draw on a body of received economic theory and accumulated empirical studies when addressing itself to structural remedies that alleviate the characteristics that make monopolistic behavior possible; it is possible to evaluate, with some confidence, structural characteristics of a market that may suggest that more firms are necessary to ensure the health of competition. It is much more difficult to try to define precisely what pattern of behavior, whether pricing or otherwise, a firm should be allowed to follow and what it should be enjoined from undertaking when the structure of the relevant market is not specified.<sup>27</sup> However, it is precisely such behavioral restrictions that a policy toward predatory pricing seeks: it must distinguish a "predatory" price cut from a "competitive" one and develop behavioral constraints that deter the former, but not the latter.

## II. The Framework for Analysis

Given our working definition of predatory pricing, the central problem in formulating a policy to cope with such behavior is the difficult task of inferring unobservable long-run market outcomes from observable short-run market conditions. Such an enterprise, no matter how carefully it is done, is inherently uncertain and involves the possibility of error both because the actual effects of any kind of observable short-run behavior on long-run outcomes are themselves uncertain and because our methods of predicting those effects are imperfect. This task, however, is unavoidable: to dismiss entirely an assessment of long-run effects, as for example Areeda and Turner seem to do,<sup>28</sup> is to dismiss the essence of the predatory pricing problem.

Since a profit-maximizing<sup>29</sup> dominant firm will depart from short-

27. The divergence of views one finds in the recent predatory pricing literature concerning the "optimal" rule to apply in evaluating dominant firm behavior, *see* note 1 *supra*, is testimony to the difficulty of trying to formulate such behavioral restrictions.

28. *See* notes 12 & 17 *supra*.

29. Our analysis assumes, as have most of the contributions to the recent discussion of predatory pricing, that firms are profit-maximizers. This assumption is common to the earlier contributions despite the fact that, as we have noted, *see* notes 4 & 5 *supra*, some commentators have focused primarily on short-run profit maximization while others have assumed the firm seeks to maximize long-run profits. For a discussion of the implications for our analysis of relaxing the assumption of profit-maximizing behavior and recognizing other firm objectives, *see* note 50 *infra*.

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run maximizing behavior only if it expects that such a move will lead to larger long-run profits,<sup>30</sup> the best way to assess whether current behavior is predatory is to evaluate its expected effects on long-run market outcomes. Recognizing the perhaps substantial degree of uncertainty involved, we must use information on the existing market structure and short-run firm behavior to try to infer what the long-run outcomes will be. The potential errors resulting from such an inferential process can be classified into two categories. Adopting the terminology of statistical hypothesis testing, we will characterize the two kinds of errors as “false positives” (or Type I errors) and “false negatives” (or Type II errors). These terms, which we now define, are central to our discussion and the reader is urged to keep them firmly fixed in mind. A *false positive* or *Type I error* results when the standard being applied to a particular case labels as predatory behavior that is not, in fact, predatory. On the other hand, a *false negative* or *Type II error* occurs when the standard does not label as predatory behavior that is, in fact, predatory. Either error is costly; each causes a loss in economic efficiency. The nature of the costs associated with each type of error is developed below.

### A. *Analysis of Error Costs*

Two kinds of costs are associated with false positive errors—that is, with errors that involve labeling truly competitive price cuts as predatory. First, welfare losses result from the fact that prices may be kept too high for too long as compared to the levels that would have resulted if the dominant firm had more leeway to adjust prices. Second, inefficient firms may be encouraged to remain in the market or to enter the market. This increases the cost of production of the product above the efficient level and results in a waste of scarce resources and hence in a loss of social welfare. It should be noted that any standard that encourages entry by forcing price to be kept above long-run marginal cost for a period of time necessarily runs the risk of preserving inefficient firms, whether existing ones or entrants, for some period. The question is whether such a standard leads a sufficient number of firms to enter or to mature so that monopoly pricing is eliminated more quickly than it would have

30. In comparing present and future profits, future profits must be discounted to present value to reflect the fact that they are not available today. A dollar today is, *ceteris paribus*, worth more than a dollar a year from now. For a simple exposition of discounting to present value, see V. BRUDNEY & M. CHIRELSTEIN, *CASES AND MATERIALS ON CORPORATE FINANCE* 35-44 (1979).

been otherwise. If it does, then the short-run social cost of such a standard may be worth incurring.

The costs associated with false negative errors, with errors that result because the predation standard is too permissive, are of three kinds. First, there is a short-run allocative inefficiency<sup>31</sup> if the standard is so lax that it permits the dominant firm to price below short-run marginal cost for any period of time. Second, there is the deadweight loss<sup>32</sup> commonly identified with monopolistic pricing. Under a lax standard, this cost is incurred during those periods after the dominant firm has succeeded in either driving others from the market or disciplining the remaining firms to follow its monopolistic-pricing lead. The third type of social loss caused by a false negative error consists of the cost inefficiencies that may result from the insulation of the monopoly or dominant firm after it has successfully restricted competition. If removing the pressure generated by competing firms diminishes the dominant firm's incentive to find ways to reduce costs—for example, by innovation—the social costs of producing that firm's product will be higher than they need be.

Many structural characteristics affect these error costs; no single structural characteristic is determinative. Instead, one must look at the interaction of a variety of market characteristics to make reasonably sound empirical judgments about the relative magnitudes of the two sets of error costs. The relevant structural characteristics can be grouped into three basic categories: (1) factors indicative of short-run monopoly power; (2) conditions of entry into the market; and (3) the dynamic effects of competitors or entrants on the costs of production and the quality of products offered to consumers.

31. Short-run allocative inefficiency occurs in such a situation because short-run marginal cost represents the short-run opportunity cost—in terms of resources used—of producing an additional unit of output. If price is less than short-run marginal cost, and if demand is at all elastic, the price will not give consumers the proper signal about the scarcity value of the good. Thus, consumers will purchase too much of the good and as a result, too many resources will be devoted to producing the particular good in the short run.

32. The deadweight loss of monopolistic pricing can be intuitively understood as follows. The monopoly price,  $P$ , will be higher than the price,  $C$ , that would prevail in a competitive market, and the latter is equal to the short-run marginal cost of producing the good. Hence, if demand is at all elastic, some consumers will reduce their purchases if the price is  $P$  instead of  $C$ . For those consumers, the value of such purchases lies somewhere between  $C$  and  $P$ . Thus, the increase in price and concomitant decrease in output brought about by monopolistic pricing causes these consumers to lose the difference between their valuations and  $C$ . The sum of all such losses is the deadweight loss. Note that no one recoups such losses. In contrast, for all units that would be purchased whether the price were  $P$  or  $C$ , consumers must pay  $P-C$  more per unit but the firm gains exactly that amount. For a more complete explanation, see F. SCHERER, *supra* note 5, at 13-19; for a diagrammatic illustration of the deadweight loss concept, see note 51 *infra*.

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Discussion of these characteristics serves two purposes. First, we seek to establish the general relationship between the structural characteristics and the costs of making false positive and false negative errors. Second, we examine specific issues that arise in assessing the structural characteristics of any particular market that might be subject to antitrust review. This discussion facilitates a general understanding of how structural factors affect the costs of making errors and provides the basis for the first tier of the rule-of-reason approach to predatory pricing we suggest below.

### 1. *Short-Run Monopoly Power*

By definition, a firm with monopoly power can exercise control over the market price in the short run. If the dominant firm's market power is substantial, the costs of foregoing temporary price cuts in exchange for long-term erosion of that power—that is, the costs of false positive errors—will be smaller than if the firm lacks such market power.<sup>33</sup> The costs of false negative errors are likely to be larger the greater the dominant firm's opportunity to raise prices and increase profits once the entry threat has been eliminated. Incorrectly labeling a dominant firm's temporary price decrease as nonpredatory will result in substantial long-run welfare losses if such a price drop succeeds in deterring entry or in inducing exit and thus leaves the dominant firm with a substantial degree of monopoly power.

Our concern with the market power of the firm as a determinant of the cost of a false negative error is directed at that market power after the price cut has successfully reduced competition. The data to which any predatory pricing rule would have to be applied, however, would be information about the firm's market power before its price strategy succeeded in achieving its anticompetitive end. One would have access to post-price cut data only if one were willing to let any challenged pricing behavior run its full course of effects; the latter is clearly inadvisable. Hence, the current monopoly power

33. Of course, the social benefit of a price cut to marginal cost will be larger during the period price is actually lower, the greater the market power of the firm that institutes the price reduction. Hence, a temporary price cut to marginal cost will, for the period it is in effect, yield more social benefit if it is undertaken by a firm with substantial market power than by one without such dominance. But if the price cut is truly predatory and is being used to drive out existing rivals or to deter new ones from entering, then the social benefits generated by the price reduction will be transitory and will be far outweighed by the long-term benefits that would accrue if competition were maintained or strengthened. Our point is that the ratio of the long-run benefits of competition to the short-run costs of foregoing temporary competition-reducing price cuts will be greater the more market power the price-cutting firm possesses.

of the alleged predator is used as a guide to what its power would be if its price-cutting behavior led competition to be reduced. The current market power provides a lower bound to the power that would follow upon the execution of a successful predatory price cut.

Measuring monopoly power is, to be sure, not an easy task.<sup>34</sup> However, an examination of the dominant firm's market share, the number and size distribution of firms already in the market, the stability of market shares over time, and historical evidence on the profits earned by the dominant firm should be useful in assessing the short-run monopoly power of the dominant firm and in providing insights into whether that monopoly power has been exploited over time. Thus, the traditional indices of monopoly power that are routinely used by the courts in monopoly and monopolization cases<sup>35</sup> constitute the place to begin. Nevertheless, since we propose below that a more detailed and systematic investigation of structural characteristics be undertaken, the traditional emphasis on finding "the relevant market"<sup>36</sup> is probably uncalled for; a fairly rough determination of the products that are close substitutes for one another is all that is needed at this stage.

This basic information should be supplemented by an assessment of the elasticity of demand<sup>37</sup> for the dominant firm's product. Quite

34. See Dansby & Willig, *Industry Performance Gradient Indexes*, 69 AM. ECON. REV. 249 (1979) (discussing structural factors that affect welfare losses resulting from exploitation of market power and discussing which particular indicators of structure are appropriate in different behavioral scenarios).

35. The indicator of a defendant firm's monopoly power that is most widely used by courts is the firm's share of the relevant market. Where a firm controls a predominant share of the relevant market, this alone may suffice for a finding of monopoly power. See, e.g., *United States v. Grinnell Corp.*, 384 U.S. 563, 571 (1966); *American Tobacco Co. v. United States*, 328 U.S. 781, 797 (1946); *United States v. Aluminum Co. of America*, 148 F.2d 416, 424 (2d Cir. 1945); *United States v. United Shoe Mach. Corp.*, 110 F. Supp. 295, 343 n.1 (D. Mass. 1953), *aff'd per curiam*, 347 U.S. 521 (1954). Conversely, a relatively small share of the relevant market may be conclusive of a lack of monopoly power. See, e.g., *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 399, 404 (1956); *Holleb & Co. v. Produce Terminal Cold Storage Co.*, 532 F.2d 29, 33 (7th Cir. 1976); *United States v. Aluminum Co. of America*, 148 F.2d 416, 424 (2d Cir. 1945). At times, when market share data have been inconclusive, other characteristics of the relevant market have been considered. In different instances, the defendant's profit margin, the number of firms in the industry, the relative size and strength of the remaining competitors, the historical trend in the defendant's market share, the ease with which new competitors may enter the market, and the elasticity of demand in the market have been taken into account. See generally 2 AREEDA-TURNER TREATISE, *supra* note 1, at ¶¶ 507-13; 16 J.O. VON KALINOWSKY, BUSINESS ORGANIZATIONS: ANTITRUST LAWS AND TRADE REGULATION § 8.02[3] (1979).

36. See *United States v. Consolidated Laundries Corp.*, 291 F.2d 563, 573 (2d Cir. 1961); I M. HANDLER, TWENTY-FIVE YEARS OF ANTITRUST 691 (1973). *But see* Schmalensee, *supra* note 3, at 1004-16 (there may exist no one precise relevant market in many antitrust cases).

37. The price elasticity of demand for a firm's product is defined as the percentage change in the quantity demanded brought about by a one percent change in the price, *ceteris paribus*. See W. NICHOLSON, MICROECONOMIC THEORY 680 (2d ed. 1978).

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simply, the opportunity to extract monopoly profits is inversely related to the elasticity of demand. Hence the less elastic the demand for the product, the greater is the cost of not identifying a practice that is predatory as such—that is, the higher is the cost of a false negative error. On the other hand, the deadweight loss that results from giving the monopolist less leeway to adjust prices downward in response to entry is smaller when demand is inelastic than when it is elastic. The less elastic is demand, then, the lower the cost of a false positive error.

### 2. *Conditions of Entry*

A dominant firm's short-run monopoly power is not of particular concern in and of itself. The critical question is whether or not the dominant firm can use that monopoly power to maintain prices above the competitive level for some significant period of time, and this depends on the conditions of entry into the market. We have chosen to categorize this part of the structural investigation in terms of "conditions of entry" rather than "barriers to entry,"<sup>38</sup> because the traditional examples of "entry barriers" are both too restrictive and too easily misinterpreted. In particular, they do not capture the dynamics of entry processes in different markets that are essential for determining whether potential competition constitutes an effective constraint on the pricing behavior of a dominant firm.

Even if there is only one firm in the market, and the elasticity of demand for its product is fairly low, a firm is not in a position to exercise its monopoly power if new firms with additional production capacity can quickly and easily enter a market should prices be raised to a point above the competitive level. In this case, potential competition effectively constrains the ability of a dominant firm to engage in monopoly pricing for any significant period of time. On the other hand, if entry is costly and time-consuming, the dominant firm will be in a position to exercise its latent monopoly power. Other things being equal, the more costly entry is and the longer it takes for new firms to enter a market in response to monopoly prices, the higher are the costs of false negative errors and the lower the costs of false positive errors.

The combination of a highly concentrated market, low demand elasticity, and entry conditions that indicate that potential competition does not respond or responds only slowly to prices set at supra-

38. For a discussion of entry conditions and barriers to entry, see 2 AREEDA-TURNER TREATISE, *supra* note 1, at ¶ 409; F. SCHERER, *supra* note 5, at 216-34; *Williamson Response*, *supra* note 1, at 1195-96.

competitive levels should be an area of primary concern for antitrust enforcement; failing to label a predatory price cut as predatory in such situations would be very costly. Similarly, if the conditions of entry are such that competitors enter the market quickly as prices rise above the competitive level, the costs of not labeling a price cut as predatory when it will not be very large since potential competition severely limits the ability of a dominant firm to exercise monopoly power.

There are certain structural characteristics of a market that affect entry conditions and thus the ability of potential competition to provide an effective constraint on the pricing behavior of a dominant firm. First, we should look at the amount of capital required by a new firm to enter a market at minimum efficient scale. If capital requirements are very large, it is less likely that entrants will respond quickly, if at all, as prices rise above competitive levels. Capital requirements may represent a constraint on entry, even when prices are above competitive levels; because capital markets may not be perfect,<sup>39</sup> evidence of substantial sustained supranormal profits may be needed before the required capital commitments can be made. Even if capital markets are perfect, large capital requirements may be indicative of the need to build large-scale production facilities or to develop extensive distribution networks that may take a considerable amount of time to complete. This means that entrants can respond to monopoly prices only after a substantial lag time; a firm with monopoly power easily may be able to exploit this entry lag by raising prices in the interim.

Second, we should seek to determine whether the existing dominant firm has been successful in establishing a significant "brand preference"<sup>40</sup> in the eyes of consumers, not by producing an objectively better product, but by having been first in the market or by having made extensive "image" advertising expenditures. Faced with such a market, an entrant not only may have to invest the resources that are technically required to establish production and distribution networks but also may have to undertake substantial promotional ex-

39. See *Posner Article, supra* note 1, at 945; Williamson, Book Review, 83 *YALE L.J.* 647, 656-59 (1974) (reviewing W. BOWMAN, *PATENT AND ANTITRUST LAW: A LEGAL AND ECONOMIC APPRAISAL*).

40. See *FTC v. Procter & Gamble Co.*, 386 U.S. 568, 572 (1967); *FTC v. Borden Co.*, 383 U.S. 637, 639-40 (1966); J. BAIN, *BARRIERS TO NEW COMPETITION* 116 (1956); Schmalensee, *supra* note 3, at 1002, 1033. "First mover" dominant firms may have a "generic name" advantage, see *id.*, or may have engaged in substantial advertising expenditures to differentiate their products from others that are functionally equivalent, see *FTC v. Procter & Gamble Co.*, 386 U.S. 568, 572 (1967); F. SCHERER, *supra* note 5, at 341.



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penditures, both to get its product known and to overcome brand loyalties that the dominant firm has achieved. In such situations, successful entry will be more costly and more time-consuming, and, as a result, potential competition will be a less effective constraint on the existing dominant firm.<sup>41</sup> As a result, courts should recognize that because generic names and premium brand images induced by advertising change the conditions of entry in such a way that potential competition is a less effective constraint on prices than it otherwise might be, dominant firm behavior in such markets may be worthy of closer scrutiny.

A third characteristic of the conditions of entry in a particular market is the ease with which productive resources or assets can be transferred from one firm to another. For any number of reasons, it may be difficult to transfer to new owners the assets of a firm that exits. If there are substantial benefits to "learning by doing"<sup>42</sup> in production or if production in a technologically sophisticated industry requires the coordination of a number of individuals in important design teams and such teams are broken up when the firm exits,<sup>43</sup> transferability will be limited. The dominant firm could, in fact, facilitate this disintegration of the team by hiring away key personnel when the firm exits.

If assets are not easily transferable, an exit from the market carries with it a reduction in productive capacity and hence the likelihood of social inefficiency. As a result, the cost of a false negative error is higher when there are frictions in the asset-transfer process. The reverse is also true; that is, *ceteris paribus*, the easier it is for the assets of an exiting firm to be taken over and used by an entrant, the more likely it is that effective competitive pressures can be main-

41. See Schmalensee, *supra* note 3, at 1032-43 (analysis in context of processed lemon juice industry); Schmalensee, *Entry deterrence in the ready-to-eat breakfast cereal industry*, 9 BELL J. ECON. 305 (1978) (analysis in context of ready-to-eat breakfast cereal industry). We recognize that the "brand preference" question raises serious problems. For example, how are we to decide whether the benefits of a "generic name" are really attributable to the "accidental" fact that a particular firm was first in the market rather than to the skill and foresight of a first mover? How are we to determine whether advertising expenditures that establish a brand image and a brand preference represent expenditures that "fool" consumers or actually "inform" them of the true differential worth of a particular product? The answer is that such determinations are difficult. But we do know that in such situations entry is more costly and occurs more slowly and thus a dominant firm has more control over price for a longer period of time.

42. See Arrow, *The Economic Implications of Learning by Doing*, 29 REV. ECON. STUD. 155 (1962); Hirsch, *Manufacturing Progress Functions*, 34 REV. ECON. & STAT. 143 (1952).

43. See P. DOERINGER & M. PIORE, *INTERNAL LABOR MARKETS AND MANPOWER ANALYSIS* 15-16 (1971); O. WILLIAMSON, *MARKETS AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS* 60-64 (1975).

tained and the more costly it is for society to force the dominant firm to maintain an excessively high price.

Related to the transferability of assets is the nature of the entry process in the particular market. Consider a dominant firm that serves several different submarkets.<sup>44</sup> The market may be divided by geographical area, product line, or type of consumer. Differential start-up costs may then lead new firms to enter the market sequentially—that is, to start in one submarket and then expand into others.<sup>45</sup> By running losses in the “entry point” submarkets, the dominant firm could protect its dominant position in the other submarkets. In effect, the entrenched firm could use its pricing strategy in the entry point submarkets to make entry more difficult in the other submarkets it serves. This type of strategy could succeed in deterring potential entrants, particularly when the entry sequence is founded on technological considerations. When differential costs of entry lead new firms to sequence submarkets in a particular order, the dominant firm’s strategy may, over time, lead to a reordering of the entry sequence. But, in the interim, potential entrants will have been significantly discouraged, if not totally deterred. When a market is characterized by a natural progression of submarkets to be entered, the costs of false negative errors will be higher than if no such sequence existed. Correspondingly, the costs of false positive errors will be lower when such an entry sequence exists than when one does not.

The last structural factor in this category is the nature of information flows in the market and, in particular, the availability of information concerning the perceptions of risks of entry. The exit of a number of firms from a market, whether simultaneously or in rapid succession, increases the perceived long-term risks of entry into the

44. “Submarket” here is not meant to refer to the antitrust concept of a distinct market as a “line of commerce,” the concentration of which is viewed as relevant for purposes of examining mergers or attempted monopolization. *See, e.g., United States v. Aluminum Co. of America*, 377 U.S. 271, 273-77 (1964); *Brown Shoe Co. v. United States*, 370 U.S. 294, 324-28, 335-39 (1962).

45. The computer industry seems to us to be an example of a market in which a wide range of entry strategies might be considered by potential entrants. A firm could try to enter the market by initially producing a broad array of computer system hardware and software—central processing units of various sizes and a full array of peripheral equipment necessary to complete the system. This would presumably be a high-cost entry strategy. Alternatively, potential entrants might consider entering the market by producing a much narrower array of products—small central processing units only or particular types of peripheral equipment that could be used with central processing units already in production. In the latter case, an entrant’s strategy would be to establish itself in one segment of the market, at lower initial cost than entry across the entire spectrum of products would entail, and then to expand into additional segments of the market with the expectation that such expansion might be accomplished more easily than full-scale entry initially.

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market. This is especially true if those who depart were, in fact, recent entrants. If potential entrants or the suppliers of capital to such entrants perceive that the risks in the particular market are greater than they had previously thought them to be, the cost of capital to new entrants will rise.<sup>46</sup>

If the new perception is grounded in underlying real characteristics of the market—for example, demand is more uncertain than it had been thought to be or input supplies are less reliable than they were thought to be—then the cost of capital should increase to improve the resource allocation signals in the economy. However, if the riskier impression of the market is due, instead, to predatory pricing on the part of a dominant firm, then the resulting increase in the cost of capital is not justified in terms of resource allocation goals; it generates the wrong signals concerning the social value of an input, capital, in alternative uses. Although the rise in the cost of capital to entrants might be accurately reflecting the riskiness of the market given that a dominant firm is allowed to follow a predatory pricing strategy, the cost that it is socially efficient to have reflected is the value of capital in the market when such behavior is not permitted.

Hence, predatory pricing behavior can enable a dominant firm to make the long-run risks of entry look substantially higher than they actually are. The dominant firm's ability to generate such false signals will be greater when information flows concerning the market are poor. The more impacted information is,<sup>47</sup> the higher is the cost of a false negative error and the lower is the cost of a false positive error.

Thus, structural characteristics determine whether potential competition would be sufficient to constrain the pricing behavior of a dominant firm. When entry into a given market is difficult, a dominant firm may enjoy sufficient long-run monopoly power to increase prices for a significant period of time.

### 3. *Dynamic Effects of Competitors and Entrants*

One of the most important factors leading to increases in national income over the last century has been technological change, including the introduction of new processes that reduce the costs of producing

46. See V. BRUDNEY & M. CHIRELSTEIN, *supra* note 30, at 61-68.

47. Information impactedness exists when the "true underlying circumstances relevant to [a] transaction, or related set of transactions, are known to one or more parties but cannot be costlessly discerned by or displayed for others." O. WILLIAMSON, *supra* note 43, at 31.

existing products as well as the development of new and better products that better satisfy the desires of consumers.<sup>48</sup> Although it is generally thought that the structure of industrial markets affects the rate of technological change, the theoretical and empirical literature supports widely divergent views about which structure is preferable. For some commentators, monopoly power is an important spur to innovation, while for others competition with patent protection is the most effective inducement for rapid technological change. We do not intend to resolve this debate here; indeed, the debate may well be unresolvable as a general matter. Technological change is still so poorly understood and the history of innovative activity differs so much from one market to another that we doubt that a general theory linking market structure variables to the rate and direction of technological change will be convincingly sustained empirically in the near future. However, this does not mean that the effects of competition on innovation can be ignored in assessing the costs of false positive and false negative errors. On the contrary, since innovation has such important effects on social welfare and since a general theory is lacking, the innovative characteristics of the specific firms and markets under investigation should be examined.

In order to assess the relevant error costs, an inquiry should be made into the sources of process and product innovations in the market being scrutinized. Has the dominant firm been a primary source of technological innovations or have smaller firms and entrants been the innovators? In markets in which competition appears not to foster innovation but in which, perhaps because of economies of scale, a relatively insulated dominant firm is a more likely source of technological progress, the cost of false positives is higher and the cost of false negatives is lower. Under these circumstances, forcing a dominant firm to keep its price high enough for long enough so that competing firms enter and thrive may engender substantial sacrifices of cost-saving innovation. And, although a social loss will be incurred if we allow a monopolist who temporarily decreases his price to succeed in excluding other firms, the cost of such a false negative error

48. We recognize, as will anyone familiar with the literature on technological change and market structure, that ascertaining the relationship between the degree of competition and the pace of innovation will be very difficult. See, e.g., F. SCHERER, *supra* note 5, at 346-78; Markham, *Concentration: A Stimulus or Retardant to Innovation?* in *INDUSTRIAL CONCENTRATION: THE NEW LEARNING* 247 (H. Goldschmid, et al., eds. 1974). Nevertheless, even if such considerations can enter only in extreme cases—where there is reason to believe that competition has a very beneficial or a very deleterious effect on technological progress in production for the market being examined—they are very important in any genuinely long-run view of the social-welfare effects of short-run pricing behavior.

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will be mitigated by the enhanced technological progress that results from the monopolist's successful self-preservation. In contrast, failing to identify predatory price actions is more costly and mislabeling a truly competitive pricing strategy as predatory is less costly when the rate of technological change is positively affected by an increase in the number of firms in the market, that is, when small competitors or entrants have been the major sources of innovation.

Beyond the consideration of the sources of technological change, a general picture of the dynamics of the market under investigation is important for the evaluation of error costs. Is the market growing rapidly? Is the industry a "declining industry"? Do prices tend to rise and fall with cyclical changes in supply and demand? If an industry is growing very rapidly and the products being sold are new products introduced by the dominant firm, we might expect to find both that there is substantial entry and that the dominant firm is earning profits that appear to be above the long-run competitive level. Rather than indicating a long-run monopoly problem, however, the size and profitability of the dominant firm may be reflecting only the short-run disequilibrium characteristics of a very competitive industry. In such a market, the costs of false positives would be relatively high and the costs of false negatives relatively low. Similarly, in a declining industry we are unlikely to observe entry; rather we are likely to observe some firms exiting while the remaining firms achieve larger shares of a declining market. In this case, we would not necessarily want to interpret increasing concentration as reflecting increases in monopoly power.

Although other structural factors may affect the costs of the two kinds of errors associated with any predatory pricing standard,<sup>49</sup> our discussion has focused on what we think are the principal elements;<sup>50</sup>

49. For example, the structure of the consumer side of the market might also merit examination in particular cases. Is the product purchased by a relatively small number of large, sophisticated industrial firms or is the product purchased primarily by a large number of individual consumers? In the first instance, concentration on the buyers' side might constrain the monopoly power the dominant firm can exercise, while in the second instance the demand side will not impose much restraint on the firm's exercise of monopoly power.

50. Our discussion of how structural factors affect the costs of false positive and false negative errors has assumed that the dominant firm is a "cost minimizer," that is, given existing technology and input prices, the firm produces its chosen level of output at minimum cost. In the microeconomic theory of firm behavior, cost minimization follows from one of two assumptions: (i) the objective of the firm's management is to maximize short-run profits or, alternatively, (ii) there are numerous competitors or there is easy entry so that those firms that survive in the long run will be cost minimizers whether or not specific individual firms observed at any particular time are cost minimizers. See Nelson & Winter, *Factor price changes and factor substitution in an evolutionary model*, 6

examination of these elements provides a way of identifying the kinds of markets in which the costs of false positive errors and false negative errors are likely to be high or low.

### B. *Analysis of the Probabilities of Error*

Let us now turn to the probability of making each type of error. Consider first the probability that a false positive error is made: a particular price reduction is declared predatory when it is not. The probability of such an error depends on three factors: the probability that an observed price cut is, in fact, not predatory; the standard used to classify that reduction as predatory or not predatory; and the accuracy with which the standard is applied. Similarly, the probabili-

BELL. J. ECON. 466 (1975); Nelson & Winter, *Neoclassical vs. Evolutionary Theories of Economic Growth: Critique and Prospectus*, 84 ECON. J. 886 (1974); Winter, *Satisficing, Selection, and the Innovating Remnant*, 85 Q.J. ECON. 237 (1971).

In reality, neither of these assumptions necessarily holds in those markets that are likely to be of most concern to antitrust monopoly policy. Managerial objectives may include other variables besides profits, such as sales or the growth rate of the firm, or more personal managerial objectives such as salary, security, power, or prestige. See W. BAUMOL, *BUSINESS BEHAVIOR, VALUE AND GROWTH* 45-52, 86-104 (rev. ed. 1967); Williamson, *Managerial Discretion and Business Behavior*, 53 AM. ECON. REV. 1032, 1033-38 (1963). Or, there may be so few competitors, or entry may be so difficult, that competition does not perform its "natural selection" role. As a result, a dominant firm may depart from cost minimization and waste resources; this phenomenon has been referred to as "X-inefficiency," see Leibenstein, *Allocative Efficiency vs. 'X-Efficiency'*, 56 AM. ECON. REV. 392 (1966), or "organizational slack," see R. CYERT & J. MARCH, *A BEHAVIORAL THEORY OF THE FIRM* 36-38 (1963). Furthermore, if an existing firm with short-run monopoly power has as its goal the maximization of *long-run* profits, it may find it advantageous to allocate resources to deterring entry. See R. POSNER, *supra* note 1, at 184-85. Thus, for example, a dominant firm may have an incentive to carry excess capacity to deter entry. See Spence, *Entry, capacity, investment and oligopolistic pricing*, 8 BELL. J. ECON. 534 (1977). Whatever the reason, departures from cost minimization, which seem most likely to occur in markets with monopoly characteristics, represent real social costs of monopoly, costs which antitrust policy should seek to eliminate.

Given these considerations, it is reasonable to ask why we have not listed "departures from cost minimization" as one of the structural characteristics affecting error costs. Note first that we have in fact focused on *dynamic* departures from cost minimization by suggesting that the effects of competition on technological change are important. On the other hand, we have not focused directly on *static* departures from cost minimization. A number of reasons support our decision. First, "organizational slack" and "X-inefficiency" are extremely difficult to measure in any systematic or reliable fashion. Second, the sources of inefficiency resulting from *long-run* profit maximization constitute particular aspects of *behavior* that are best addressed as part of an inquiry into behavior rather than as part of the structural analysis. Third and perhaps most important, situations in which departures from cost minimization are most likely to occur are readily identified with structural factors that we have discussed in detail—short-run monopoly power, conditions of entry, and the dynamic effects of competition. As a general matter, where structural factors are such that the traditional welfare costs of false negatives are high (substantial short-run monopoly power, difficult entry conditions, etc.), considerations of static departures from cost minimization make them even higher. Rather than trying to estimate departures from cost minimization directly, we identify the structural factors that are likely to make such costs large.

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ty of committing a false negative error is determined by the probability that an observed price cut is, in fact, predatory, the standard used to identify predation, and the way the standard is applied. Hence, each of the error probabilities depends on the propensity of a dominant firm, operating subject to a particular legal standard, to engage in predatory pricing, on the nature of that standard, and on its application by enforcement agencies, judges, and juries.

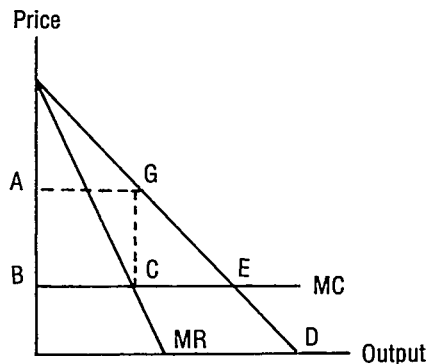
The dominant firm's proclivity to engage in predatory pricing, given that the legality of any price reduction it makes will be evaluated against a particular standard, is rather complicated to assess. One way to examine the firm's pricing decision under these circumstances is to think about it as resulting from the interaction of two component parts: the incentive a profit-maximizing dominant firm would have to make predatory price reductions if its pricing policy were subject to no legal constraints, and the nature of the constraints imposed by the particular legal standard being considered.

The more profitable it is for an "unconstrained" dominant firm—one whose pricing decisions are unfettered by legal constraints—to choose a truly predatory pricing strategy, the more likely it is that such a firm will make that choice. Hence, the first of the two components of the actual firm's decision essentially asks the following: How profitable would it be for a dominant firm whose pricing decision is unconstrained by the law to choose a strategy that is truly predatory? The answer depends on the same structural characteristics that affect the cost of the two types of errors. When, *ceteris paribus*, one of the structural factors we have discussed is associated with a higher cost of failing to detect a truly predatory pricing cut, such a reduction is also more profitable for the unconstrained dominant firm. To see why, observe that such a firm's proclivity to engage in predatory pricing will be greater the higher the level of profit it can expect to earn in the future if it succeeds in deterring new entry or driving out existing rivals. And the firm's tendency to pursue such a pricing strategy will also be greater the smaller the sacrifice in short-run profits it must incur by decreasing its price and keeping it low until the desired restriction of competition has been achieved. But a structural factor that, *ceteris paribus*, increases the social costs in the period after the dominant firm has successfully insulated itself from competition also increases the private gain accruing to the firm in that future period. Similarly, a structural characteristic that, all other things equal, decreases the social benefits of a price cut in the earlier period when competition is being eliminated also decreases

the private costs to the dominant firm of such a price reduction. Hence, the structural characteristics that increase the social cost of a false negative error are also associated with greater net private profitability of truly predatory pricing.<sup>51</sup>

Given an observed price reduction by an unconstrained dominant firm, the probability that the price cut is predatory is therefore higher when the structural factors that raise the social cost of false negative errors are present than when they are not. By a similar line of argument, if a particular structural feature results in a higher cost of a false positive error, it is also associated with a lower probability that a price cut by such an unconstrained firm is actually predatory.<sup>52</sup> When there are no legal constraints on pricing policy, a dominant firm in a market with "monopoly" structural characteristics, which result in higher costs of false negative errors, will find a predatory price reduction more attractive than will a dominant firm in a market with "competitive" structural characteristics, which lead to higher costs of false positive errors.

51. In terms of the standard representation of a monopolist's static profit-maximizing equilibrium, the size of the "deadweight loss triangle" increases as the size of the monopolist's "profit rectangle" increases, and the former decreases as the latter decreases. In the special case of a linear demand curve and constant marginal cost of production, the area of the deadweight loss triangle is always half that of the profit rectangle. To illustrate, consider the diagram:



The profit rectangle ABCG is twice as large as the deadweight loss triangle CGE where MC is the marginal cost curve, MR is the marginal revenue curve, and D is the demand curve.

52. While a particular characteristic of the "unconstrained" dominant firm or the market it serves moves the probability of predation and the cost of a false negative in the same direction, and also alters the probability of truly predatory price cuts and the cost of false positive errors in opposite directions, this says nothing about the magnitude of those effects. Moreover, the probability of predatory behavior by such a firm and the cost of each type of error will, to the extent they depend on structural characteristics, depend on the full set of firm-specific and market-specific structural features.



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We will not present a detailed catalogue of each of the structural characteristics we have discussed. However, consider the following example of how structural factors affect the probability that an unconstrained dominant firm will make a predatory price reduction. The greater the short-run monopoly power of the dominant firm, *ceteris paribus*, the higher is the probability of predatory pricing when the firm is free to choose any pricing strategy. This does not say anything about the absolute size of the probability; it does not, for example, say that if we observe a temporary reduction of price by an unconstrained dominant firm with substantial short-run monopoly power, then it is highly likely that the reduction is part of a predatory pricing strategy. All it says is that if we observe such a price reduction, then it is more likely that the reduction is predatory if the dominant firm currently has considerable short-run monopoly power than if it does not. The more short-run monopoly power the firm possesses, the greater will be its ability to raise prices, and thereby increase profits, if it succeeds in eliminating the threat of entry. Hence, extinguishing such threats is more valuable to a firm with more short-run monopoly power than to one with less control, and, in the absence of legal restrictions, such entry-detering strategies are, *ceteris paribus*, more likely to be pursued by firms with more market power.

The preceding discussion has suggested how structural characteristics affect the profitability, and hence the likelihood, of predatory pricing when the dominant firm knows that its pricing policy will not be subject to legal challenge. However, the introduction of a standard to be used in judging the legality of the firm's pricing behavior will alter this assessment of profitability. The probability that violations of the standard will be detected and the penalties imposed for such violations determine whether the firm perceives itself as absolutely constrained from pursuing certain pricing policies or perceives only a decrease in the probability that it will actually enjoy the long-term benefits of predatory price cuts. Thus, the likelihood that a firm whose pricing policy is being assessed in terms of a particular legal standard will make predatory price cuts will depend on two factors: the behavior that would be most profitable for the unconstrained firm given the structural characteristics affecting the unconstrained firm's profit calculus, and the nature and application of the legal standard.

Thus, the character of the legal standard influences the error probabilities indirectly by affecting the firm's incentives to make preda-

tory price cuts. The nature of the legal standard, however, also has a direct effect on the probabilities of false positive and false negative errors. The factors that the standard takes into account affect the probability that the standard will lead to particular kinds of errors; a standard that ignores the relevant considerations discussed above will be more error-prone than one that takes them into account. For example, a rule that is based only on static market conditions and ignores dynamic considerations is much more likely to generate errors than is one that gives appropriate weight to dynamic factors.

Furthermore, the strictness of the standard in evaluating the factors it does consider also affects the error probabilities. The more stringent the standard is, the greater the probability of a false positive and the smaller the probability of a false negative. For example, a *per se* rule that declares illegal any price reduction by a firm whose share of a particular product market exceeds sixty percent, will have quite a high probability of declaring a firm's price predatory when it is not, while it will also have a relatively low probability of making a false negative error. On the other hand, suppose the rule in effect declares nonpredatory any price at which gross revenues exceed variable costs and requires a demonstration that the firm has set price below average variable cost before the firm's action is declared illegal.<sup>53</sup> In this case, there will be a low probability of making a false positive error, but the probability of a false negative error will be high.

Finally, the ability of judges and juries to understand and apply any particular standard will affect the probabilities that the particular policy will result in each kind of error. This institutional competence issue—the putative inability of judges and juries to make certain kinds of complex determinations and to apply those analyses consistently across cases—is sometimes invoked as a conclusive ground for relying on a *per se* rule rather than on a rule-of-reason approach. The question of how well these decisionmakers can apply the tools of economic theory to monopoly and monopolization cases has often troubled commentators who view economic efficiency as the goal of antitrust policy.<sup>54</sup> Even those people who argue that the antitrust laws were not intended for the single-minded pursuit of economic

53. See *Areeda-Turner Proposal*, *supra* note 1, at 716-18; pp. 250-52 *infra* (discussing use of average variable cost).

54. See R. BORK, *supra* note 1, at 80-81, 411-18; Posner, *The Rule of Reason and the Economic Approach: Reflections on the Sylvania Decision*, 45 U. CHI. L. REV. 1, 20 (1977).

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efficiency<sup>55</sup> agree that if judges and juries are going to use the criterion of economic efficiency as a guideline, it is preferable that they do so in a correct and consistent way.

Given judges' and jurors' training and the available empirical information, the ability of these decisionmakers to apply economic principles correctly and consistently is likely to be imperfect. The critical question is how far short they will fall in applying each of the alternative rules. But the answer to this question is only one factor to be considered in assessing error probabilities and choosing an approach to predatory pricing. For although a per se rule may be easier to apply than a more complicated rule, the benefits of its simplicity may well be outweighed by the cost of its inaccuracy if the rule fails to encompass important elements of the market situation. Moreover, the simplicity of such a rule may be more apparent than real.

Consider, for example, the simple rule mentioned earlier that would declare illegal per se any price reduction by a firm whose market share exceeds sixty percent. This rule would have a low probability of making a false negative error by declaring a firm's pricing behavior nonpredatory when it was predatory, but it would have a high probability of making the opposite kind of error—declaring predatory a truly nonpredatory price cut. The resulting costs of the inaccurate decisions reached could well outweigh the simplicity of the rule. Application of such a mechanical rule can lead to errors that would have been avoided had a broader examination of available economic information been undertaken. Furthermore, the "sixty percent market share" rule is simple only until one begins to inquire into the appropriate way to measure market share. What, for instance, are the bounds of the relevant market? How will degrees of substitutability be gauged? There is no "right" way to define the relevant market if the intention is to use this simple measurement to distinguish predatory pricing from competitive pricing.<sup>56</sup> Hence, the statement of the rule is deceptively simple; articulating a simple-sounding rule does not ensure that it will be correctly applied. Although not all simple per se rules are subject to the same problems as is the "sixty percent market share" rule, simple per se rules can be misused just as more complicated approaches can.<sup>57</sup>

55. See, e.g., Pitofsky, *supra* note 24, at 1051-58, 1060-65; Scherer, *supra* note 24, at 975-81.

56. See Schmalensee, *supra* note 3, at 1015-16.

57. For an example of the difficulties engendered in applying an apparently simple rule, see our discussion of *In re* Certain Welded Stainless Steel Pipe and Tube, United States International Trade Commission Investigation No. 337-TA-29 (Feb. 22, 1978), at pp. 263-64 *infra*.

### C. *Implementation Costs*

There are several kinds of implementation costs associated with any particular standard. First, and most obvious, are the costs of the judicial and legal resources needed to apply and enforce the standard. A truly simple rule that required for its application only a small number of easily determined facts and that provided clear directions for the evaluation of those facts would be the least costly in terms of these resources. As more complicated approaches are considered, more information is required and more complex determinations must be made, with the result that the total cost of the time of lawyers, judges, and jurors increases. Resource demands would be greatest if the approach chosen necessitated an "all-factors" analysis in every predatory pricing case; such an approach would require that, in any case of alleged predation, the judge or jury undertake a relatively unstructured, open-textured inquiry into the complex structural and behavioral characteristics of both the defendant dominant firm and the market in which it operates.<sup>58</sup>

The second kind of implementation cost is rather different. Given any predatory pricing rule or standard, dominant firms will adapt their behavior so as to reduce, if not eliminate, their vulnerability to legal sanction. These strategic adaptations, as Williamson has termed them, are "intertemporal efforts by established firms to take up advance positions and respond contingently to rivalry in ways that either discipline existing rivals, or discourage potential competition, or both."<sup>59</sup> Such patterns of prepositioning and contingent response may engender significant costs of their own. For example, Scherer and Williamson have argued that if the Areeda-Turner cost-based rules were adopted as the rule of law, the response by dominant firms would have adverse welfare consequences for the preentry phase.<sup>60</sup>

58. Professor Scherer has advocated such an approach and believes it can be made operational, but other commentators view the resource costs of using an all-factors analysis in every case as being so high that they characterize the approach as unworkable. See note 9 *supra*.

Professor Williamson equates Scherer's proposal with establishing a price commission to supplant antitrust enforcement and is skeptical about the ultimate success of such a venture. See *Williamson Proposal*, *supra* note 1, at 288 n.16. Of course, if an approach were to require the establishment and operation of a new administrative regulatory agency to hear and to decide cases of alleged predatory pricing, or if the approach were to entail allocating that function to an existing body, the costs of any new administrative agency activity would have to be taken into account. Although no one contributing to the discussion has explicitly suggested such an approach, it is not beyond the realm of possibility.

59. *Williamson Response*, *supra* note 1, at 1185.

60. See *Scherer Proposal*, *supra* note 1, at 883 (Areeda-Turner rules will encourage

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A dominant firm would be led to operate with excess capacity, to produce an output below the socially optimal level, and to sell that output at a price above the socially optimal level. Dominant firms would thereby gain the advantage of being able to respond as strongly as the Areeda-Turner rules allow when a new competitor appears or an existing firm expands. If entry did occur nevertheless, the welfare consequences in the post-entry period would also be adverse; as Williamson shows, the total industry output after the entrant appeared, or the old competitor expanded, would be produced at a higher cost than it need be.<sup>61</sup>

Alternative predatory pricing standards would have different implementation costs associated with dominant firms' adaptation to the legal rules. For example, Williamson's output-restraining rule would prohibit a dominant firm from expanding its output for a specified period of time—twelve to eighteen months—in response to new entry.<sup>62</sup> A dominant firm faced with the Williamson output-limitation rule would recognize that one of its entry-detering (expansion-retarding) strategies—namely, creation of excess capacity, which could serve as a credible threat of output expansion if entry were to occur—had been removed. In response, one would expect such a firm to turn to alternative devices or policies, such as image advertising or other selling activity, to make entry more difficult. A full evaluation of the effects of the Williamson rule, taking into account strategic behavior concerns, would require a determination of the welfare consequences, in both the preentry and post-entry phases, of the firm's substitution of one means of deterring entry for another.<sup>63</sup>

Only if we had a "perfect" rule for coping with predatory pricing would there be no additional resource costs attributable to strategic adaptation by dominant firms. Of course, no such "perfect" rule exists; the idealization serves simply as a benchmark against which to measure the costs of feasible rules.

dominant firms to hold costly excess capacity); *Williamson Proposal*, *supra* note 1, at 299-302, 307-12 (Areeda-Turner rules will result in lower preentry welfare than Williamson output-restriction rule).

61. See *Williamson Proposal*, *supra* note 1, at 309-10.

62. *Id.* at 296.

63. Professor Williamson discusses two entry deterrence strategies that do not involve price reduction or output expansion: holding back technological developments for later strategic use and increasing selling expense (*e.g.*, advertising) to fight entrants. See *id.* at 306 n.61. Williamson concludes that holding back technology is likely to be counterproductive for firms and, in any event, would be difficult for courts to control. *Id.* With respect to selling expense, he notes that it is only likely to be effective as a predatory practice where "image" advertising is involved, *i.e.*, heavy promotion of consumer goods "to emphasize real or imagined differences." *Id.*

Two other kinds of implementation costs are generated by any policy that does not provide a "bright line" between what is legal behavior and what is not. First, in the absence of a bright-line standard, the costs of harassing litigation will increase as suits are brought by competitors seeking to protect themselves. An ambiguous rule makes it easier for such potential litigants to cloak their protectionist enterprise in a predatory pricing suit. Such complaints are costly to the defendant firm, and, to the extent the cause is without merit, they are costly to society as a whole.

Second, in the absence of a bright-line rule, firms' decisionmaking processes are subject to greater uncertainty; a firm cannot be sure whether its pricing policies are legal. The uncertainty generated by the confusing signals that dominant firms would receive from the case law could cause the predatory pricing standard to have no deterrent effect or to have a perverse efficiency effect.

These costs are highest for an "all-factors" unstructured, case-by-case approach, lower for the Areeda-Turner cost-based rule or the Williamson output-restriction rule, and even lower for a per se market share rule.<sup>64</sup> Per se rules reduce litigiousness and spurious private damage actions and reduce firms' uncertainty about what pricing behavior is legal. But, once again, although this is an attractive property of per se rules, it is only one factor to consider.

### III. A Proposed Two-Tier Approach

It should be clear from the preceding discussion that the probability that predatory pricing will occur and the costs that such pricing will engender if it does occur vary according to the inherently different characteristics of different markets. As a result, given any particular predatory pricing rule, there will be differences across markets in both the probabilities and costs of false positive and false negative errors. The costs of implementing any given policy will also vary across markets.<sup>65</sup> In sum, the "optimal" rule for one market situation will not be "optimal" for all market situations.

We can, of course, conceptualize the process of selecting a per se

64. Current concern about the costs of litigation is reflected in the substantial attention the National Commission for the Review of Antitrust Laws and Procedures gave to arguments that rules not focused on conduct (e.g., per se rules based on market structure) will reduce litigation costs. See ANTITRUST COMMISSION REPORT, *supra* note 20, at 151-54.

65. The ease or difficulty of assessing important facts—for example, market share or price-cost margin—will vary across markets as, for example, the degree of product differentiation varies. Also, the ability of a dominant firm to adapt to one legal rule or another will depend on the market in which it operates.

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behavioral rule that would apply to all market situations. But to choose such a rule correctly we must be prepared to make subjective probability judgments about the distribution of market structures and hence the distribution of alternative error cost/error probability/implementation cost combinations. Using this subjective probability distribution together with a complete calculation of the expected total cost of each possible rule for each kind of market situation, we could in principle select the rule that minimizes the expected total costs across all market situations. The description of this calculation suggests how infeasible it would be as a practical means of choosing the “optimal” per se rule.

Not only would it be extremely difficult to arrive at a rule that would meet with any reasonable consensus, but relying on such a rule would also reduce the ability to use all the information that is likely to be available to us. This brings into question the wisdom of subscribing to any single per se rule based on observed firm behavior alone. Restricting or permitting some particular behavior as a general matter may yield economic gains in a few markets, but losses in many others. A rule based solely on behavioral considerations does not provide a means for distinguishing market situations in which the expected costs of predatory pricing are high from those in which they are low.

The decision-theoretic framework that we have presented suggests a way of formulating a rule-of-reason approach to predatory pricing that both preserves the desired flexibility to respond to facts particular to a given market and minimizes implementation costs. The primary objective is to design an approach that makes the probability of a false positive error low when the cost of such an error is high and that makes the probability of a false negative error low when the cost of that type of error is high. Since structural factors that raise the cost of false positive errors lower the cost of false negatives and vice versa, an approach to predatory pricing should employ standards that are carefully conditioned on structural factors. Thus, we suggest a two-tier approach that is sensitive to differences in market structure and allows us to screen out market situations where a reasonable threat of predatory pricing exists from those where it does not.<sup>66</sup>

66. One consideration that appears to have been very important in leading Areeda and Turner to the cost-based rule they formulate is their view that predatory pricing is rare in all markets. See *Areeda-Turner Proposal*, *supra* note 1, at 699; *Areeda & Turner on Scherer*, *supra* note 1, at 894; *Areeda & Turner on Williamson*, *supra* note 1, at 1339. This leads them to a rule that provides some protection against false negative errors, but

In the first stage, we would examine both the structural characteristics of the market in question and the market power of the alleged predator firm to find out if they generate a reasonable expectation that predatory pricing could occur and impose significant economic losses on society. It is necessary, at this first stage, to form a judgment about whether the market structure is such that the expected costs of failing to identify as predatory, pricing behavior that actually is predatory, are likely to be high. Such a judgment would be based on consideration of the structural factors we have discussed above. Unless a reasonable case could be made that there was a serious monopoly problem in the industry, no detailed investigation of the alleged predator's intent or behavior, nor speculation about the long-run consequences of its pricing policy, would be undertaken. In short, a claim that predatory pricing had taken place could be pursued only if the plaintiff could show that the market context in which the behavior was taking place was in fact conducive to predatory pricing.

We believe that this first-stage "structural" requirement, using generally accepted definitions of monopoly power, would discourage frivolous predatory pricing cases. A plaintiff would have to show that a significant monopoly problem existed in the market and could not try to supplement weak evidence on the likelihood and effects of predatory pricing by appealing to vague predatory pricing standards such as "intent" or "below-cost" pricing. Thus, a claim of monopolization through predatory pricing could be pursued only in market situations in which the structural characteristics suggest that there is a reasonable probability that monopoly power has been or could be sustained by the use of price reductions. The concern about incurring substantial false positive error costs, by labeling as predatory, pricing behavior that is not predatory, would be reduced since instances of alleged predation in which such costs were expected to be greatest would be eliminated by the initial "structural" analysis. Only those situations in which the costs of false negative errors were

that concentrates on reducing the probability of false positive errors. A similar view appears to lead Bork to the conclusion that predatory pricing should not constitute an antitrust violation. *See* R. BORK, *supra* note 1, at 149-55. Of course, the most effective way to reduce false positive errors is never to declare a firm's pricing behavior predatory. However, if a policymaker agreed with Areeda and Turner's empirical guess about the frequency of predatory pricing in some markets but not in others, he would probably want to adopt an approach that allowed him to differentiate between these two types of markets and to examine more closely behavior in those markets in which predatory pricing seemed most likely.



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expected to be high and the costs of false positive errors low would make it across the threshold into the second tier.

If Areeda and Turner are correct in their belief that predatory pricing occurs extremely rarely,<sup>67</sup> then not many market situations will pass the “structural” threshold. For those that do, the social costs generated by truly predatory pricing could be reduced by using a more careful and complete evaluation of the pricing behavior than could be used if one rule had to apply to all predatory pricing cases.

Our two-tier rule-of-reason approach provides a way of distinguishing situations where predatory pricing may be a significant empirical problem from those cases where it will not be. It is based on the view that the predatory pricing problem can be addressed only by confronting directly the interaction between structural monopoly problems and behavior that tends to sustain monopoly power. The most effective way to guard against discouraging pricing behavior that is truly competitive is to screen out those market situations in which truly predatory pricing is unlikely. Such distinctions between the problem cases and the spurious ones cannot be drawn using only a behavioral rule. Instead, drawing such lines requires a careful examination of the underlying structural characteristics of the firm and industry in question.

Under the two-stage approach suggested by our decision-theoretic framework, firms in markets where there is no evidence of a significant monopoly problem can do anything they please with price. Firms in the remaining markets will know that they are going to have their behavior scrutinized carefully and that efforts will be made to restrict them from engaging in activities that slow down the development of a more competitive marketplace.

### A. *The First Tier: The Elements of the Structural Analysis*

Our earlier discussion outlined the structural factors that might be used to distinguish the cases in which monopoly problems exist from those in which they do not. It was not meant to provide an exhaustive catalogue of the structural factors that the courts might look at in any particular case. Furthermore, even for those factors that we have discussed, it may be much more difficult to assemble useful information on some than on others. As a result, we do not mean to imply that the plaintiff must show that every structural characteristic indicates that the costs of a false negative error are high and those of a false positive are low. Similarly, the defendant does not have to show that every

67. See *Areeda-Turner Proposal*, *supra* note 1, at 699.

structural characteristic of the market is such that false positive errors are costly while false negative errors are not. The purpose of the structural analysis is for the court to obtain an overall picture of the market in question to determine whether, considering all of the structural characteristics, on balance the structure of the market is such that a dominant firm could engage in predatory pricing activity that would result in significant sacrifices in economic efficiency.

Unfortunately, real markets cannot be readily dichotomized into "monopoly" markets and "competitive" markets, but are better characterized by a continuum, with some markets close to classical monopolies, others close to perfect competition, and most markets somewhere in between. The courts will have to examine the evidence and determine whether monopoly elements are sufficiently pervasive to justify additional scrutiny of firm behavior. To illustrate what such an examination might entail, we supplement our earlier discussion of structural factors by presenting the following three abstract cases in which a firm has been accused of predatory pricing.

CASE #1:

(1) Short-run monopoly power:

(a) The firm has seventy percent of the market, and three other firms each have ten percent.

(b) The dominant firm has consistently been a price leader.<sup>68</sup>

(c) The number and size distribution of firms has remained fairly constant for ten years.

(d) Sustained profits substantially above the competitive level are evident.

(2) Conditions of entry:

(a) Entry at minimum efficient scale requires investment of over \$200 million.

(b) No new firms have entered the market in the past ten years. Previous entry was by very large firms diversifying.

(c) The firm commands a "premium price" for a product that does not appear to be different from products produced by its competitors.

(d) The firm engages in substantial amounts of "image" advertising emphasizing the brand name of the product rather than qualitative differences from products produced by competitors.

68. A dominant firm is said to be a price leader if other firms in the relevant market consider the price set by the dominant firm as the price for the entire market. In such a market, competitors generally will attempt no independent price changes, but will only change prices in response to and to the extent that the dominant firm changes prices. If the market exhibits some product differentiation, then competitors will follow and match the dominant firm's price plus or minus some differential. See F. SCHERER, *supra* note 5, at 164-66.

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### (3) Dynamic effects of competition on costs and products:

(a) The three smaller firms in the market are the primary sources of process and product innovations.

#### CASE #2:

##### (1) Short-run monopoly power:

(a) The alleged predator has forty percent of the market and eight smaller firms of varying sizes comprise the rest.

(b) The firm's market share has been gradually declining over time.

(c) When the firm has tried to "lead" price increases, the demand for its product has declined substantially.

(d) The firm's profits have been somewhat greater than the cost of capital over the previous four years, but profitability has been falling.

##### (2) Conditions of entry:

(a) Entry at minimum efficient scale requires initial investment of \$10 million.

(b) Three new firms have entered the market successfully over the past five years and have grown rapidly. Two others have entered and later failed.

(c) Products sold by various firms are fairly homogeneous, and advertising costs are not a substantial fraction of total costs. There is no evidence that any product enjoys "premium brand" advantage.

##### (3) Dynamic effects of competition on costs and products:

(a) This product market is not characterized by rapid technological change.

(b) Technological change that has occurred has focused on new and improved products, and the dominant firm is the primary creator of new products.

#### CASE #3:

##### (1) Short-run monopoly power:

(a) The alleged predator has sixty percent of the market and four smaller firms comprise the rest of the market. In some geographical markets one of the other firms has a larger market share.

(b) The firm's market share has averaged sixty percent over the past ten years, but the share has fluctuated considerably from year to year.

(c) When the firm has tried to "lead" price increases, the other firms have sometimes followed, but when they have not, the firm has rolled back the price increase as the demand for its product declined dramatically.

(d) The firm's profits have on average been somewhat greater than the cost of capital but show a slight downward trend.

##### (2) Conditions of entry:

(a) Entry at minimum efficient scale requires investment of at least \$200 million to enter all major geographical markets simultaneously. Entry

into major geographical submarkets requires initial investment of \$20 million.

(b) Three new firms have entered in particular geographical areas over the past five years, but only one of these still survives.

(c) The market is characterized by some product differentiation and advertising outlays are above average, but the firm's product does not generally carry a "premium brand" price.

(3) Dynamic effects of competition on costs and products:

(a) The market is characterized by fairly rapid cost-saving technological changes.

(b) Both the dominant firm and two of its competitors, one of which is a recent entrant, have introduced new low-cost production processes.

Recall that at this stage we are not determining whether the firm is liable, but only whether, on the basis of an overview of structural factors, there appears to be enough of a monopoly problem that a further investigation of firm behavior is warranted. This determination is easy for the first two cases, but difficult for the third. Given the structural characteristics of case #1, an inquiry into dominant firm behavior is certainly in order. The market described is exactly the type in which predatory pricing is most likely to occur, and to result in significant losses in economic efficiency if entry is not allowed to erode the monopoly power of the dominant firm.

In case #2, no further inquiry into behavior is necessary. Although there is some evidence of historical monopoly power, this does not appear to be a market in which there is a serious long-term monopoly problem. The competitive process seems to be working efficiently to erode any monopoly power that may exist. Thus, a predatory pricing action brought by one of the unsuccessful entrants should be dismissed without any further inquiry into behavior.

The third case is not as readily characterized as the other two. The market is less concentrated than in case #1. Although the market share of the dominant firm has remained fairly high, it is also unstable. Furthermore, the alleged predator is not dominant in all geographical markets. Simultaneous entry into all geographical submarkets is very costly, but it is much less difficult to enter individual submarkets and one case of successful entry has occurred in this way. There is some product differentiation, but an entrant does not have to confront a major entrenched "image" problem. Innovations have been contributed by both the dominant firm and some of its competitors. However, there is some evidence that the dominant firm has power over price and has been able to sustain supranormal profits over a considerable period of time.

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While in case #1 an analysis of behavior is clearly warranted, and in case #2 it is not, the correct way to proceed in case #3 is less obvious. In close cases such as this, we believe that the decision to go forward must ultimately depend upon the court's judgment as to whether a detailed exploration of behavior will help to provide further information about the monopoly power that the dominant firm actually possesses or might obtain as a result of this behavior.

### B. *The Second Tier: Behavioral Considerations*

In those cases in which the firm-specific and market-specific structural characteristics suggest that the efficiency losses of failing to identify, as predatory, pricing that is predatory, are likely to be high, it is necessary to proceed to the second tier of analysis.

It is presumed that a firm subjected to the behavioral inquiry of the second stage has substantial market power, which can be exploited by employing strategic measures to maintain a trajectory of supra-competitive prices for a longer period of time than could be enjoyed without engaging in strategic behavior. Hence, the standard that a defendant firm subject to second-tier analysis should have to satisfy to be exonerated will be more rigorous than the test one would propose if the search were for a single behavioral rule to apply to all firms in all markets; a more detailed scrutiny of structure, behavior, and expected performance would be conducted in the context of the particular pricing behavior at issue. There is a place in the second-tier analysis of firm behavior for each of the rules proposed by other recent contributors to the discussion of predatory pricing.<sup>69</sup> However, none of these rules alone provides a satisfactory basis for the second-tier analysis.

What considerations ought, then, to enter into the second-stage analysis of firm pricing behavior? Merely observing a price cut in the face of entry or potential entry is clearly insufficient as evidence of predatory behavior. The destruction of monopoly elements through new com-

69. At this tier the court would undertake a more detailed scrutiny of structure, behavior, and expected performance in the context of the particular pricing behavior at issue than it would conduct at the first tier. The kinds of firm and market characteristics that Scherer would examine in every predatory pricing case, see *Scherer Proposal*, *supra* note 1, at 890, would be scrutinized in those cases where the reasonable expectation of substantial false negative error costs led to the second tier of analysis. Elements of the Areeda-Turner, Williamson, and Baumol rules are incorporated at the second tier. See pp. 250-58 *infra*. Note that some commentators have proposed that different rules be applied in different situations. See, e.g., 3 AREEDA-TURNER TREATISE, *supra* note 1, at ¶ 715d (basic average variable cost test with examination of marginal cost also in some situations); *Williamson Proposal*, *supra* note 1, at 331-37 (proposing output-restriction rule, average variable cost test, and average total cost test at various points in litigation).

petition should lead to a reduction in prices from monopoly levels, and these price decreases will almost necessarily have an adverse effect upon other firms in the market<sup>70</sup>—whether they are entrants or existing firms. Competitive price cuts should proceed as rapidly as possible, consistent with the demand and supply conditions in the market, and should be sustained as competition gradually replaces monopoly or oligopoly. On the other hand, a price cut that serves only to drive competitors from the market or to delay the entry of new competitors and that is ultimately replaced with a monopoly price once competition has been eliminated is clearly undesirable. Although given the structural characteristics of a market, we could, in theory, derive a socially optimal trajectory of prices and entry of new competitors, the solution to this theoretical inquiry cannot form the basis of a practical, workable monopoly policy.<sup>71</sup> Certain types of pricing behavior, however, can be identified as most unlikely components of such a socially optimal trajectory of prices, outputs, and entry.

### 1. *Pricing Below Average Variable Cost*

Areeda and Turner have argued that a price cut to a point below short-run marginal cost is both a necessary *and* a sufficient condition for showing predation.<sup>72</sup> Because short-run marginal cost is nearly impossible to measure in the context of antitrust litigation, Areeda and Turner recommended that reasonably anticipated average variable cost be used as a surrogate.<sup>73</sup> They appended two qualifications: that reasonably disputed items be treated as variable costs,<sup>74</sup> and that defendants be allowed to rely on average variable cost only when they offer evidence indicating that average variable cost is not significantly

70. At least one court has displayed sensitivity to this point. See *Janich Bros. v. American Distilling Co.*, 570 F.2d 848, 855 (9th Cir. 1977), *cert. denied*, 439 U.S. 829 (1978).

71. The derivation of this socially optimal trajectory requires the specification and solution of an extremely complicated dynamic programming problem encompassing the dynamic characteristics of demand and supply, the conditions and determinants of entry, and various proposed antitrust constraints. Even the simpler problem of determining the dynamic behavior of a monopoly firm that attempts to maximize long-run profits subject to a simple specification of entry by other firms but not subject to any antitrust constraints is difficult and complex. See *Gaskins*, *supra* note 5.

72. See § AREEDA-TURNER TREATISE, *supra* note 1, ¶ 711a; *Areeda-Turner Proposal*, *supra* note 1, at 709-16. Areeda and Turner, however, do admit an exception to their rule: price below short-run marginal cost should not be held predatory if the firm is pricing at or above average total cost. See § AREEDA-TURNER TREATISE, *supra* note 1, ¶¶ 711d, 715b; *Areeda-Turner Proposal*, *supra* note 1, at 713.

73. See § AREEDA-TURNER TREATISE, *supra* note 1, ¶ 715d; *Areeda-Turner Proposal*, *supra* note 1, at 716-18.

74. See § AREEDA-TURNER TREATISE, *supra* note 1, ¶ 715c; *Areeda & Turner on Williamson*, *supra* note 1, at 1338.

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below short-run marginal cost.<sup>75</sup> Many of the courts that have applied the Areeda-Turner rule have used the “average variable cost” approximation and not devoted much attention to measuring short-run marginal cost.<sup>76</sup>

Average variable cost will always be below average total cost and, except when there is substantial excess capacity, below short-run marginal cost as well. A price below average variable cost will never be profit-maximizing in the short run for an existing firm with monopoly power, and it is likely to be below the long-run average cost and long-run marginal cost of an equally efficient rival. Thus, a price cut to a point below average variable cost can have no purpose other than the sacrifice of short-run profits for long-run monopoly gain.<sup>77</sup> Note that

75. See 3 AREEDA-TURNER TREATISE, *supra* note 1, ¶ 715d; *Areeda & Turner on Williamson*, *supra* note 1, at 1338.

76. See, e.g., *Janich Bros. v. American Distilling Co.*, 570 F.2d 848, 858-59 (9th Cir. 1977), *cert. denied*, 439 U.S. 829 (1978); *International Air Indus., Inc. v. American Excelsior Co.*, 517 F.2d 714, 724 (5th Cir. 1975), *cert. denied*, 424 U.S. 943 (1976).

In contrast, in one recent case, the court concluded that pricing below average variable cost could not be used to show that predatory pricing had occurred. See *William Inglis & Sons Baking Co. v. ITT Continental Baking Co.*, 461 F. Supp. 410, 418-19 (N.D. Cal. 1978). The court was evaluating allegations of predatory pricing in the industry that produced and distributed bread in Northern California. Plaintiffs showed that the defendant company had priced considerably below average variable cost. *Id.* at 418. The court noted that at the relevant times there was considerable excess capacity in both the production and distribution of bread, with the result that average variable cost would be “substantially higher than marginal cost.” *Id.* at 418. Areeda and Turner had stated that, where such a disparity exists, average variable cost “is the correct test on principle, since a firm that sells below its average variable cost is clearly not loss-minimizing.” 3 AREEDA-TURNER TREATISE, *supra* note 1, ¶ 715d. The *Inglis* court, however, did not apply the Areeda-Turner average variable cost rule and offered two arguments for not doing so. First, if it is “evident in a particular case that profit maximization will occur at marginal, but below average variable cost, [then average variable cost] cannot be used as prima facie proof of a violation.” 461 F. Supp. at 418-19. Second, there is “no necessity for use of the surrogate,” average variable cost, where it is possible to determine marginal cost with equal accuracy. *Id.* at 419. Because the plaintiff had failed “to adduce competent evidence of sales below marginal cost,” the court struck down the jury verdict for the plaintiff on the Sherman Act § 2 predatory pricing issue. *Id.* at 419.

77. There is an exception that should be mentioned, though we believe it will apply in only very rare cases. It rests on dynamic considerations that suggest that the excess capacity is temporary and that the start-up costs incurred in the future when full-scale production resumes will be much greater if the firm ceases production now than if it stays in business even though not covering its variable costs. A possible example of this situation is a mine in an industry where excess capacity is currently so great that firms can only produce at a point where price is less than average variable cost. But at the same time, significant damage might be done if the mine were closed—for example, the mine might be flooded—so that there would be large costs of reopening the mine when the temporary period of industry excess capacity had passed. An excess-capacity defense to pricing below average variable cost might be warranted in such a case.

The considerations discussed at pp. 252-54 *infra* concerning a defense of a price below average total cost also apply here. But unlikely as it is that the excess-capacity defense will apply in the instance of pricing below average total cost, it is even less likely to be applicable when price is found to be below average variable cost.

our reasoning to this conclusion about the status of pricing below average variable cost is different from that of Areeda and Turner. Their analysis and conclusion are based on static microeconomic models and associated concerns with short-run efficiency considerations.<sup>78</sup> Since the essence of the predatory pricing problem is dynamic, a static perspective is inadequate. We are trying to use short-run static behavior to infer longer-run intent and consequences.

Therefore, the adoption of a strategy of pricing below average variable cost by a dominant firm confronted with entry is *sufficient* to demonstrate predation. A price below average variable cost, and for that matter, a price below average total cost, could not possibly be sustained in the long run since, to survive, firms must cover total costs in the long run. A firm with market power—the ability to control price—would only have an incentive to impose losses on itself when faced with an entrant if the promise of future monopoly gains made such a tactic profitable from a long-run perspective.

## 2. Pricing Between Average Variable Cost and Average Total Cost

Although pricing below average variable cost is a *sufficient* condition for establishing predatory behavior, we do not believe it should be a *necessary* condition. Pricing between average variable cost and average total cost also may indicate predation.

In a competitive market, the equilibrium market price will equal the average total cost of production,<sup>79</sup> including a normal rate of return on capital invested,<sup>80</sup> and this will, in turn, equal long-run mar-

78. See note 4 *supra*.

79. For a single-product firm, average total cost is easily defined. In the more likely multiproduct context, we are using "average total cost" to signify the average incremental cost of the commodity of concern and not any arbitrary "fully allocated cost measure." See Baumol, *supra* note 1, at 9 n.26 (high likelihood that most cases will involve multiproduct firms; arbitrary and difficult to fully allocate cost among products). Baumol defines the "average incremental cost" of product X "as total company cost minus what the total cost of the company would be in the absence of production of X, all divided by the quantity of X being produced." *Id.*

In using an average total cost test, courts will have to make some effort to guard against "creative accounting." This will be especially difficult in the case of multiproduct firms where the relevant average total cost figure is the average incremental cost of the commodity with respect to which predatory pricing is alleged. In calculating this average total cost, the court may look first to the firm's allocation of "overhead" costs as a guide, though we would urge that such guidance be sought only with extreme caution. If the firm's allocations are examined, a minimal requirement should be that preentry, not post-entry, cost allocations be used.

80. Some imputation of a normal rate of return on capital must be included in the average total cost figure. This will generally be lower than the dominant firm's historical rate of return on capital. Since the computation of a normal rate of return on capital is complex and uncertain, it may be desirable to take the average rate of return



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ginal cost. Of course, prices in a competitive market will fluctuate over time, sometimes rising above and sometimes falling below this competitive standard, as short-run variations occur in demand and supply conditions. But it is highly unlikely that the socially optimal trajectory of prices and entry in any market initially characterized by monopoly or oligopoly would involve immediate post-entry prices that impose a loss on the dominant firm. A price below average total cost could drive equally efficient and perhaps even more efficient rivals from the market or deter such firms from entering; in the face of entry lags, the dominant firm could then resume its monopoly pricing behavior. Although a dominant firm maximizing only short-run profits would probably lower its price in response to entry or the threat of entry, it would not decrease its price to a level below average total cost.

Hence, we would recommend that if the firm-specific and market-specific structural characteristics considered in the first stage of our proposed inquiry lead to an examination of the defendant firm's behavior, then, at the second stage, a price response that does not cover average total cost should be presumed predatory unless the dominant firm can show that this strategy maximizes short-run profits.

The short-run profit-maximization defense is likely to be valid in only one situation—when substantial excess production capacity exists in the industry. This condition might arise for one of three reasons: first, the alleged predator may be operating in a declining industry; second, the entrant may have entered at a scale sufficiently large that, at a price equal to average total cost, total industry capacity would be underutilized; and third, the dominant firm may follow a conscious strategy of carrying excess capacity so as to deter entry.<sup>81</sup> The dominant firm would be allowed to defend its pricing decisions by proving that either of the first two circumstances existed.<sup>82</sup> But the alleged predator would not be allowed an exception to the average total cost rule in the

for manufacturing industries in the United States as a starting point in making this imputation and to require an affirmative showing that a different value is more appropriate for the firm in question. In this regard, it should be clear that profit calculations based on computations of rates of return on sales or similar markup criteria are inappropriate and are likely to lead to incorrect conclusions.

81. See Spence, *supra* note 50; *Williamson Proposal*, *supra* note 1, at 294.

82. In *Pacific Eng'r & Prod. Co. v. Kerr-McGee Corp.*, 551 F.2d 790 (10th Cir.), *cert. denied*, 434 U.S. 879 (1977), an unanticipated decline in demand for a chemical product resulted in significant excess capacity in the industry only a few years after bright prospects had induced large-scale entry by several firms. 551 F.2d at 791-92. The dominant firm held price below its average total cost but above both its marginal cost and its average variable cost. *Id.* at 797. The court found no antitrust violation, arguing that the dominant firm had simply engaged in price competition in the face of excess capacity that had resulted from an unanticipated drop in demand. *See id.* at 796-97.

third case, in which the industry's immediate post-entry excess capacity was the result of the dominant firm's conscious strategy of carrying preentry excess capacity. In line with Williamson's analysis, the dominant firm could not defend its price reduction on the grounds of excess capacity if the record showed that it had increased its own output in the face of entry.<sup>83</sup>

With regard to the comparison between the alleged predator's price and its costs, one may wonder why we even mention average variable cost. Since average variable cost is always below average total cost, it would appear to be redundant to look at the former as well as the latter: any price that is below average variable cost will be below average total cost and can be held predatory on that ground. However, we view the average variable cost standard as a quick check of the alleged predatory pricing behavior. Since average variable cost is likely to be easier to calculate<sup>84</sup> than average total cost and since a price cut to so low a level is obviously predatory, it makes sense to look at this threshold first. However, a price cut to below average total cost remains the primary cost standard at the second tier.

### 3. *Pricing Above Average Total Cost*

At least in theory, a price cut to a point above average total cost in response to entry could be predatory because such a price cut could represent a sacrifice of short-run profits for longer-run monopoly gain.<sup>85</sup> However, as is not true for a dominant firm's price cuts to

83. See *Williamson Proposal*, *supra* note 1, at 307-10 (superior welfare properties of output-restriction rule that bars dominant firm from strategically carrying excess capacity).

84. Average total cost is likely to be more difficult to calculate than average variable cost for two primary reasons. First, a calculation of average total cost requires calculating the appropriate elements of fixed costs as well as *all* the elements of average variable costs. Second, calculating fixed cost elements often raises significant difficulties. Accounting data on fixed costs include costs of management or facilities that may be used for producing goods other than those of concern in a predatory pricing case. The correct imputation of fixed costs requires the calculation of average incremental cost. See note 79 *supra*. This will involve a significant amount of additional calculation because one must ascertain what a company's cost would be if it did not produce a certain product.

As Professor Williamson has noted, the calculation of average variable costs also presents difficulties that have been widely recognized by most commentators concerned with cost-based tests. See *Williamson Response*, *supra* note 1, at 1196; *Williamson Proposal*, *supra* note 1, at 312 & nn. 70-72. In particular, the process of deciding which costs are variable and which are fixed will be a difficult one; the required line-drawing about the nature of costs makes average variable cost harder to calculate than it might, at first glance, seem to be. See 3 AREEDA-TURNER TREATISE, *supra* note 1, ¶ 715c; cf. *Areeda & Turner on Williamson*, *supra* note 1, at 1338 (disputes in defining which costs are "variable" should be resolved by somewhat arbitrary rules; most disputed items should be assigned to the variable cost category).

85. For example, consider the following set of conditions: capital markets are imperfect, information flows concerning the riskiness of entry are poor, potential entrants have "thin" capital bases, and production involves high start-up costs as well as sub-

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levels below average total cost, which almost always reflect a departure from short-run profit maximization, no practical way exists to distinguish a predatory price cut to a point above average total cost from one that is a short-run profit-maximizing response to the growth of competition. It would be impossible to fashion a simple formula that the courts could utilize effectively and that firms could rely on with assurance in making pricing decisions. Any effort to define such a formula runs the serious risk of restricting truly competitive price cuts; that is, it engenders a high probability of making false positive errors. Consequently, considerable caution must be exercised before labeling as predatory any price cut that leaves the price above average total cost.

We propose that such price reductions be treated as follows. A price decrease to a point above average total cost would be presumed to be legal unless the price cut were reversed either fully or to a significant extent within a reasonable period of time—for example, two years. In the event of withdrawal of a price reduction, the burden of proof would shift to the dominant firm, which would have to show that the price increase was justified by independent increases in the costs of production or independent changes in demand. This approach is essentially the one advocated by Baumol;<sup>86</sup> it helps to ensure that dominant firm price reductions subsequent to a rival's entry are competitive actions and thus sustainable, rather than predatory moves principally aimed at cementing monopoly power. Note, however, that the "predatory process" would have to run its course before a successful claim could be made. In this regard, allegations of predatory pricing behavior that point to price cuts that fall below average variable cost or below average total cost are different from price cuts that do not. Nevertheless, if the "sustained price reduction" test is implemented successfully, the dominant firm will have strong incentives to make only those price cuts it intends to maintain.

### 4. *Relationships Among Second-Tier Tests*

It might appear that the sustained pricing test renders the cost-based tests redundant. As a theoretical matter, focusing on a single product

stantial cost savings over time associated with "learning by doing." Then an existing dominant firm could deter entry by cutting its price to a level that is below the immediate post-entry costs of production of new firms but above its own average total cost. By holding its price at such a level, the dominant firm could inflict losses on any new entrant while still earning a profit itself. The dominant firm would be able, by below-entry-cost pricing, to deter entry, even though if these other firms were to enter, then as their output expanded and learning by doing took place, their production costs would quite likely fall to those of the existing firm.

86. See Baumol, *supra* note 1, at 4-6.

being sold in a single geographical market, this is probably true.<sup>87</sup> As a practical matter, there are a variety of reasons why the cost-based inquiries should continue to be an integral part of the behavioral inquiry at the second tier. First, the dominant firm whose behavior is under review may be operating in many geographical markets. A new firm may find it necessary to enter the industry sequentially by starting in a small number of geographical markets first with the intention of expanding into others.<sup>88</sup> A dominant firm could respond to this entry by setting prices below average total cost at these entry points, driving the entrant from the market, and then leaving the prices below cost, both prices and costs adjusted for inflation, for the two-year period. By sustaining losses in a few geographical markets for a couple of years, while maintaining monopoly prices in the others, the firm could substantially reduce the rate of competitive entry over the full range of geographical markets. Such anticompetitive behavior would not be discovered by a behavioral inquiry that focused only on whether the dominant firm sustained its price cut for a previously stipulated period of time. However, an examination of the relation between the firm's price and its average total cost in the entry markets would curb such anticompetitive pricing strategies.

Analogously, the defendant firm may produce many related products. A new rival may find it difficult to raise the capital necessary to enter across the broad spectrum of products produced by the dominant firm. Once again, sequential entry may be an attractive strategy. The new firm would enter by producing a small subset of the products at much lower initial investment, and would then expand its product line as acceptance by customers and credibility in the financial community increase. The dominant firm could deter entry by blocking the "entry points"; by lowering prices for products in challenged markets below average total cost, the firm could drive the entrant from the market, maintain prices for the required length of time, and thereby substantially reduce the rate of entry at relatively modest cost to itself.

87. Professor Baumol suggests that an argument can be made that even in a multi-product, multimarket setting, no supplementary cost test is needed. By requiring that any price cut be quasi-permanent, firms establishing prices below cost will face "an automatic penalty sufficient to make [them] voluntarily avoid predatory pricing." *Id.* at 10. Nevertheless, Baumol recognizes that such an argument "may leave some observers uncomfortable," *id.*, because they may "believe that the management of a very profitable firm may prefer, even for long periods, to use some of the profits contributed by other outputs as a source to subsidize socially unacceptable low prices of products threatened by entry," *id.* Thus, Baumol suggests that his policy of quasi-permanent price reductions be supplemented by a cost test to prevent cross-subsidization. *Id.*

88. See, e.g., *Purex Corp. v. Procter & Gamble Co.*, 419 F. Supp. 931 (C.D. Cal. 1976), *vacated and remanded*, 596 F.2d 881 (9th Cir. 1979).

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The sustained price reduction test alone would not suffice to deter such an approach; the average total cost test would enjoin it.

As a final example, consider a dominant firm that operates in a market characterized by rapid product innovation. In such a market, a product that is successful today may be superseded by a new and better one in a very short period of time. Thus, the dominant firm could drive an entrant from the market by charging prices below average total cost for a single generation of products with the aim of maintaining its monopoly power over future generations of products. Successful entry today might have ensured competition over all future generations of products; preventing entry today may result in future monopoly.<sup>89</sup> The established firm would recoup its short-run losses on today's product by charging monopoly prices on tomorrow's product. However, the "price increases" would occur on different products. Therefore, if the firm's structural characteristics and those of the market it serves have led to a second-stage analysis of its pricing behavior, further examination asking only whether the dominant firm had sustained for the required period of time its price cut on today's product would not prevent its predatory actions. In contrast, cost-based tests would be more effective in detecting such anticompetitive practices.

In each of these instances, a behavioral inquiry focused solely on whether a price cut has been maintained may fail to detect, and hence to stop, predatory behavior. It is critical to recognize that actual markets can be far more complicated than static or dynamic theoretical models of single-product, single-market firms imply. Entry strategies undoubtedly will differ from one market to the next as the supply and demand characteristics of the markets vary. Naturally, as a consequence, the entry deterrence strategies of dominant firms in the different markets will vary in response. Indeed, our empirical guess would be that firms that fail the first-tier structural standard and thereby make a behavioral inquiry necessary are far more likely to be operating in complex markets than in simple ones. Hence, we believe that the sustained price test, although perhaps adequate for assessing alleged predation in

89. Consider the computer example presented above. *See* note 45 *supra*. Suppose that the sequential entry strategy is the easiest way for new firms to enter this market, but that the individual segments are themselves characterized by rapid technological change with new generations of products introduced in each segment every few years. By "permanently" reducing prices to levels such that entrants lose money on the current generation of products, the dominant firm may be able to make entry more costly or induce exit in the hope that competition will be reduced over future generations of products. A price reduction may thereby be sustained over one generation of products but competition may be reduced over future generations if the real or perceived costs of entry are increased as a result of this kind of pricing behavior.

relatively static single-product national markets, is not sufficient, by itself, as a general predatory pricing policy; it should be joined with cost-based tests to form a sound second-stage examination of the defendant firm's behavior.

### C. *Overview of the Two-Tier Approach*

Our proposed approach does not force large industrial firms to create and maintain an uneconomic price umbrella in the markets they serve. For most firms in the economy, the first, structural tier of our approach will eliminate any judicial inquiry into pricing behavior. A firm that is subject to a second-stage examination of its pricing will have complete freedom to reduce its prices to the level that would prevail in the long run in a competitive market, and even below that if an excess-capacity or declining-industry case can be demonstrated.<sup>90</sup> Such price reductions could be challenged only if they were later reversed in an exercise of monopoly power made possible by the diminished competition in the market.

The message our proposed behavioral inquiry would convey to firms with monopoly power is that they should not use that power to maintain their dominant positions. They will know that price cuts below average variable cost will be viewed as clear predatory acts, that prices below average total cost will establish a presumption of predation, and that other price cuts will be questioned only if subsequent increases are not justified by changes in cost or demand conditions. We believe these criteria are sufficiently well-defined that they can be utilized effectively to identify predatory behavior in both government cases and private treble damage actions. Furthermore, their implementation does not require an extensive investigation into the intent of the various pricing responses to entry.

Our emphasis at the second tier is on the application of a rule of reason to the analysis of allegedly predatory price cuts once the presence of monopoly power has been established. The substantive content of this second-stage examination of pricing behavior is, in a sense, a selective combination of the rules proposed by Areeda and Turner, Baumol, and Williamson. Pricing below average variable cost constitutes, as Areeda and Turner proposed, a sufficient condition for finding predation. However, under our approach, below-cost pricing is not *necessary* for predation. Instead, we apply Baumol's "quasi-permanent price reduction" rule, and supplement it with the cost-

90. See pp. 252-54 *supra*.

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based tests, to identify predatory behavior. In particular, Williamson's "backstop" average total cost test is an intrinsic part of the second-stage behavioral inquiry we propose. Finally, Williamson's output-restriction rule is reflected in our limitation of the excess-capacity defense to a charge of predatory pricing.

The approach that we have outlined does not preclude the examination of other evidence that could inform the court about the intent and effects of the pricing behavior, especially if the price and cost analysis turns out to be ambiguous. Although we are sympathetic to the concerns that have been expressed about the use of internal memoranda and statements of executives to show "intent,"<sup>91</sup> we do not believe that such information is useless. However, the use of such information should be structured around two basic questions:

1) Does the documentary evidence clearly indicate that the firm with monopoly power plans to increase its prices once the competition has been driven from the market?

2) Does the documentary evidence clearly indicate an effort to use price cuts as a mechanism to increase artificially the difficulty of entering the market?

We are not here referring to random documents indicating a desire to "crush" or "kill" competitors. Rather we are looking for carefully constructed long-run plans to maintain monopoly power by reducing the number of firms in the market and making the entry of new firms more difficult. We doubt that such clear tracks will frequently be left by a dominant firm, but if they are, the courts should not ignore them.<sup>92</sup>

91. See POSNER BOOK, *supra* note 1, at 189-90 ("availability of evidence of improper intent is often a function of luck and of the defendant's legal sophistication, not of the underlying reality"; company with "executives sensitized to antitrust problems will not leave any documentary trail of improper intent").

92. The inquiry we have described as constituting the second stage of our two-tier analysis is directed solely at the pricing behavior of the defendant firm since price setting has been the focus of our discussion. As we remarked earlier though, pricing policy is only one instrument of strategic behavior that can be used to establish and maintain monopoly power. As both we and Williamson have emphasized, each predatory pricing standard will engender a strategic adaptation by the dominant firm, which must be considered when evaluating the costs of implementing a particular policy. Allegations of predatory pricing have often been accompanied by charges that the defendant firm has also engaged in other predatory activities of a nonprice nature. The latter have included, for example, "targeted" advertising expenditures, "false" product announcements, and product "manipulations."

Increased advertising effort, new product announcements, and product modifications can be nonpredatory responses to competitive entry. But there exists no simple test to determine, as a general matter, whether they promote the interests of consumers and yield true social benefits or merely make it difficult for a new entrant to appear or to

#### D. *Procedural Issues*

Although we do not develop detailed procedures for implementing this two-tier approach to predatory pricing cases, it seems clear that the approach will entail some procedural reforms. We would like to sketch briefly a procedure that may be useful in implementing our approach.

One of the major problems with antitrust cases is that they become extremely time-consuming and complicated. Moreover, in many cases, it seems, a significant amount of discovery resources are devoted to developing the behavioral issues in the case, rather than the structural facts relevant to the firms and markets that are affected. Reliance on vague notions of "intent" lead to massive discovery efforts by the plaintiff to find documents indicating that the defendant was out to "eliminate" the plaintiff. At trial, each party devotes a substantial amount of time and effort to presenting and explaining this evidence. When the case is tried before a jury, the evaluation of this conflicting evidence becomes especially difficult.

The positive role the antitrust laws can play in promoting competition is gradually being diminished by burdensome discovery and trial processes that appear to increase both the degree of due process and the information available to judges and juries, but that may actually lead to more arbitrary decisions. We believe that our two-tier approach can make this process less time-consuming, less costly, and less complex without sacrificing the quality of the ultimate decisions.

The analysis of the structural characteristics of the market can be conducted in the context of a much shorter and more focused discovery and trial process. Much of the structural evidence required is available from public sources; the balance of the requisite evidence could be obtained using narrow discovery techniques aimed at developing specific factual questions regarding industry structure. Similarly, at trial, the structural information can be evaluated with specific structural questions in mind. As a result, it would be reasonable to consider implementing the two-tier approach by having a short, focused discovery period followed by a separate preliminary trial that concentrated exclusively on issues of structural monopoly. If a plaintiff could not convince the judge or jury that there was a reasonable expectation that a serious monopoly problem existed, then the case would be dis-

survive. Since, however, firms subject to the second-tier inquiry have been prescreened so that the only market contexts considered are those in which monopoly power is a serious problem, the courts should admit and evaluate evidence as to the effects of such behavior on consumer welfare.



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missed without any discovery or trial on behavioral issues. Thus, the entire process could be completed within a year or two of the initial complaint.

If the plaintiff did prevail in the initial trial, a second trial focused on issues of liability and relief would have to be conducted. But the time, expense, and confusion that issues of behavior raise would now have to be incurred only in that subset of monopoly cases where the structural threshold was satisfied. In addition, the task of inferring illegal behavior from the documentary record will be eased for judges and juries once an initial determination has been made that a serious monopoly problem exists and the evaluation of dominant firm behavior is conducted taking that determination as given.

A second procedural issue remains to be considered: If a case reaches the second, behavioral tier, which party bears the burden of proving that a price cut did or did not satisfy any of the conditions for predation? Any cost-based test creates a tremendous evidentiary burden on the plaintiff. The plaintiff does not ordinarily know what the defendant's costs of production are, and cost evidence obtained through discovery may be incomplete or difficult to understand. Furthermore, the intelligent dominant firm may be able to "cover its tracks" by using accounting techniques that can make any price cut appear remunerative. Hence, it may be difficult or impossible for the plaintiff and the court to ascertain the real costs.

As a result, the effective implementation of our two-tier approach requires that once a defendant has been shown to have monopoly power, it must bear a burden of production. This would include the provision of cost studies that would ordinarily be found in the files through discovery as well as detailed descriptions of the bases of the cost studies and the accounting techniques used in developing cost estimates. The failure to maintain or produce such evidence should lead to a presumption that the price cut was predatory. The firm that had been found to possess monopoly power would then have the burden of showing that the price reduction was not predatory.<sup>93</sup> If the

93. This burden of production requires only that dominant firms routinely perform analyses of their costs of production and maintain these analyses along with adequate documentation in their files. Without such a burden of production a dominant firm may be able to evade the application of any cost-based tests by making cost information unavailable or incomprehensible. A dominant firm should not be allowed to impose an "information failure" on the process and thereby avoid liability.

A recent case illustrates the difficulty engendered by such information failures in the application of cost-based tests. In *In re Certain Welded Stainless Steel Pipe and Tube*, United States International Trade Commission Investigation No. 337-TA-29 (Feb. 22, 1978) [hereinafter cited as I.T.C. Steel Case and cited by specific opinion], the International

defendant satisfies the burden of production, the plaintiff would bear the burden of proving the price cut was predatory.

#### IV. The Two-Tier Approach in Context

##### A. *Advantage of the Two-Tier Inquiry*

The two-tier nature of the proposed approach to predatory pricing allows resources for antitrust enforcement to be targeted where they will produce the greatest social efficiency gains. The sequential aspect of the examination is at least as important, however, because it avoids the kind of questionable outcomes produced by an inquiry that focuses only on behavior without first considering issues of market structure

Trade Commission found eleven Japanese manufacturers to have engaged in the unfair competitive practice of pricing below average variable cost. See pp. 263-64 *infra* (discussing substance of allegation of predatory pricing).

The plurality opinion of Commissioners Minchew, Moore, and Alberger and the concurring opinion of Commissioner Ablondi emphasized the respondents' lack of cooperation and failure to participate in the investigation. In particular, average variable cost data for the Japanese producers were not made available to the hearing officer. As a result, unaudited calculations of average variable costs of domestic producers were averaged and that average was imputed to the respondent manufacturers and used as a proxy for the respondents' costs. Furthermore, comprehensive transaction price data were unavailable for the particular firms accused of anticompetitive behavior. The Commission staff compiled the basic evidence on prices from questionnaires sent to domestic distributors and domestic importers of welded stainless steel pipe and tube; the resulting price data pertained to the *lowest* price each domestic distributor paid per quarter for each type of product and could not always be reliably attributed to a given foreign manufacturer. See I.T.C. Steel Case, *supra*, Plurality Opinion at 25 ("many importers received sales from two or more foreign sources, and . . . the importers were only required to report the names of suppliers, not their prices.").

The Commission attempted, on the basis of the secondary price and cost information, "to attribute the lowest sale price in each quarter by each importer to the imputed costs of production of this article." *Id.* at 25-26. Because the prices so derived were found to be below the imputed average variable cost in a large number of cases, the Commission held that eleven of the respondents had engaged in unfair methods of competition or unfair acts. Since the respondents did not offer any evidence of a plausible defense for their practices, the Commission concluded that the rebuttable presumption of predatory intent had to be applied. *Id.* at 33.

The dissenting commissioners, Parker and Bedell, concluded to the contrary that "the evidence in this investigation does not contain adequate proof that the importation and sale of welded stainless steel pipe and tube were made by any respondents at prices which were below their respective average variable costs of production over a sustained period." I.T.C. Steel Case, *supra*, Dissenting Opinion at 5. While the commissioners on the plurality opinion defended their use of the secondary evidence, they did emphasize their inference from the respondents' failure to participate "that facts might have been produced that would have been adverse to them on the issue of unfair methods or acts." I.T.C. Steel Case, *supra*, Plurality Opinion at 26. In his concurring opinion, Commissioner Ablondi also decried the nature of the secondary evidence. Rather than relying on such infirm data, he argued for the more direct conclusion "that the [respondents'] failure to comply with discovery in this investigation justifies a presumption of violation, and that is a basis for my decision." I.T.C. Steel Case, *supra*, Concurring Opinion at 6.

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and monopoly power. A recent decision illustrates that such outcomes can emerge even if the behavioral rule applied is as simple as the “pricing below average variable cost” version of the Areeda-Turner standard.

In a recent case before the United States International Trade Commission,<sup>94</sup> eleven Japanese manufacturers were found to have engaged in the unfair competitive practice of predatory pricing for selling certain welded stainless steel pipe and tube “at prices lower than the average variable cost of production . . . without commercial justification.”<sup>95</sup>

The Commission relied heavily on the Areeda-Turner rule, using average variable cost as a proxy for reasonably anticipated marginal cost. Neither the presiding officer nor the Commission itself adopted a *per se* rule, which would have held that sales below average variable cost are conclusively predatory.<sup>96</sup> Rather, they found that although sales below average variable cost raised a strong presumption of predatory intent, the presumption should be rebuttable.<sup>97</sup>

The contention in the case was that some respondents had *unilaterally* set their prices below reasonably anticipated marginal costs. No evidence was presented to indicate that there was a monopoly problem in the industry. Indeed, the plurality opinion held that application of the below-average variable cost rule to raise a rebuttable presumption of predatory intent does not depend on a showing of monopoly power.<sup>98</sup> In fact, the large number of firms supplying the United States market combined with the fact that the presiding officer dropped all allegations that the Japanese firms had engaged in joint action, combination, contract, or conspiracy<sup>99</sup> in restraint of trade, suggests that there probably was not a monopoly problem.

The Commission acknowledged that imports, when aggregated, constituted a relatively small percentage of the domestic market.<sup>100</sup> It indicated, however, that this fact was “unimportant” because imports

94. I.T.C. Steel Case, *supra* note 93.

95. *Id.*, Plurality Opinion at 1.

96. *Id.* at 21.

97. *See id.* at 21-22. Three of the six commissioners indicated that “there are too many economic variables in the steel industry to adopt a *per se* rule.” *Id.* at 22. Furthermore, they found that there is a “significantly greater number of plausible justifications for pricing between ATC and AVC than for pricing below AVC,” and hence “sales above AVC but below average total costs must be supported by evidence of subjective intent before this Commission can find them to be unfair within the meaning of Section 337.” *Id.* at 22-23.

98. *See id.* at 23.

99. *See id.* at 18.

100. *See id.* at 37.

were significant in the maintenance of competition in the American market.<sup>101</sup> The Commission concluded that selling at prices below average variable cost, as it found certain Japanese firms had done, was "an unfair act which has the tendency to restrain trade and commerce in the United States by substantially *reducing the domestic market share of other foreign competitors.*"<sup>102</sup> The fact that all Japanese welded stainless steel pipe and tube imports (not just those of the "predators") had risen to eighty-seven percent of total *imports* in 1976 from seventy percent in 1974 was crucial to the decision, even though, as the Commission acknowledged, this was a very small proportion of the total American market.<sup>103</sup> Furthermore, the decision did not cite any evidence that conditions of entry in this industry were conducive to monopoly.

The plurality opinion dismissed the Justice Department's argument that unilateral below-cost selling by a nondominant firm is not an "unfair method of competition"<sup>104</sup> encompassed by the section of the legislation under which the case was brought. The three commissioners also found without merit the Department's contentions that imports had had a restraining effect on price, and that, therefore, excluding Japanese imports would raise consumer prices and not promote price competition.<sup>105</sup> They applied the average variable cost rule and determined that eleven of the respondent Japanese firms had engaged in predatory pricing, an unfair method of competition.

The Commission's decision appears to have protected particular competitors at the expense of competition. The beneficiaries of the cease and desist order issued by the Commission would be not only other foreign producers but also domestic producers. The restrictive impact of the decision on foreign competition, which the Justice Department had argued that it would have, only could have enhanced any market power domestic producers already enjoyed. They, not consumers, were the beneficiaries. Thus, even the simple average variable cost version of the Areeda-Turner rule can be misused if an effort is not made initially to determine whether the structural characteristics of the firms and markets involved generate a reasonable expectation that monopoly power has been or could be exercised by the alleged predator.

Applying our two-tier approach, the case, as presented in the Com-

101. *See id.*

102. *Id.* at 39 (emphasis supplied).

103. *Id.* at 36-37.

104. *Id.* at 17 n.1.

105. *Id.* at 46.

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mission's discussion, would not have satisfied the structural criteria of the first stage; it would have been dismissed without reaching the second-tier behavioral analysis.

### B. *Consistency with Current Views*

The two-tier approach we have proposed structures the inquiry about the defendant firm's pricing in a way that is consistent with the Supreme Court's current characterization of a violation of Section 2 of the Sherman Act. The Court stated, in *United States v. Grinnell Corp.*,<sup>106</sup> that

[t]he offense of monopoly under § 2 of the Sherman Act has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.<sup>107</sup>

As in the two-tier approach we have suggested, the first element of the *Grinnell* test asks whether the firm has monopoly power. The second element in *Grinnell* inquires whether the firm has engaged in willful acts of monopolization to acquire or maintain its monopoly power and thus focuses on the firm's behavior just as the second tier of our approach does.

There are two principal differences between our proposed two-tier analysis and the way the *Grinnell* statement has been applied. First, our approach puts the two aspects of the *Grinnell* characterization on different planes. The inquiry into behavior is reached only if it has been demonstrated that structural characteristics yield a reasonable expectation that substantial monopoly power has been or could be exploited by the alleged predator. Absent such a demonstration at the first tier, no inquiry is undertaken into the firm's behavior.

The second difference between our approach and the *Grinnell* characterization is that, in our analysis, the first stage would include a more detailed and more explicit consideration of the variety of structural factors that determine the degree of monopoly power. Although courts have gone beyond evidence on market share in approaching the question of whether a firm has monopoly power, they generally have not undertaken the detailed consideration and analysis of the structural characteristics—including indications of short-run monopoly

106. 384 U.S. 563 (1966).

107. *Id.* at 570-71.

power, conditions of entry, and the dynamic effects of entrants and competitors—intrinsic to the first stage of our proposed approach.<sup>108</sup>

Some of these structural characteristics have been discussed when courts applying the *Grinnell* test have moved to the question of willful acquisition and maintenance of monopoly power.<sup>109</sup> Hence, one can view our proposal as an effort to shift some of the detailed analysis that might take place in addressing the second element of the *Grinnell* test to the first tier of the inquiry, and to require a more demanding resolution of the structural issues that are indicative of monopoly power before the second-tier behavioral analysis is undertaken.

In particular, some courts that have applied what is essentially the Areeda-Turner formulation in assessing claims of predatory pricing have recognized as relevant and important the kinds of structural characteristics that would be examined in the first tier of our proposed analysis. These courts have modified the Areeda-Turner rule by viewing below-cost pricing as a sufficient, but not a necessary, condition for establishing a prima facie case of predatory pricing.<sup>110</sup> Specifically, in each of these recent cases, the court has recognized the importance of asking whether high barriers to entry existed and hence whether an exception to the below-average variable cost rule was warranted.

For example, although the Fifth Circuit in *International Air Industries, Inc. v. American Excelsior Co.*<sup>111</sup> drew heavily on the Areeda-Turner analysis of predatory pricing and, in particular, on the average variable cost version of their rule,<sup>112</sup> it recognized the possible need for an exception to the Areeda-Turner rule when entry barriers are high.<sup>113</sup> The *International Air Industries* decision has provided the foundation for the view that either of two conditions is sufficient to prove predatory pricing: pricing below average variable cost; or pricing above average variable cost, but below the short-run profit-maxi-

108. See, e.g., *Pacific Coast Agricultural Export Ass'n v. Sunkist Growers, Inc.*, 526 F.2d 1196, 1204 (9th Cir. 1975), cert. denied, 425 U.S. 959 (1976); *United States v. CBS Inc.*, 459 F. Supp. 832, 836 (C.D. Cal. 1978). In these cases, the courts considered only two extra factors: the market share distribution of nondominant firms and the control the dominant firm had over markets related to the market focused on in the case. In *Borden, Inc.*, [1978] TRADE REG. REP. (CCH) ¶ 21,490, the Federal Trade Commission considered several, but not all, of the factors that we believe should be considered in addition to simple market share data. See *id.* at 21,501-03.

109. See, e.g., *International Air Indus., Inc. v. American Excelsior Co.*, 517 F.2d 714, 724 (5th Cir. 1975), cert. denied, 424 U.S. 943 (1976); *Hanson v. Shell Oil Co.*, 541 F.2d 1352, 1358 (9th Cir. 1976), cert. denied, 429 U.S. 1074 (1977).

110. See note 109 *supra* (citing cases).

111. 517 F.2d 714 (5th Cir. 1975), cert. denied, 424 U.S. 943 (1976).

112. *Id.* at 723-24.

113. *Id.* at 724.

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mizing price, when barriers to entry are high.<sup>114</sup> At the same time, the court indicated clearly that it viewed the high-entry-barriers alternative as an exception to the general standard of below-cost pricing rather than as an independent test.<sup>115</sup>

A similar exception to the Areeda-Turner formulation has emerged in the Ninth Circuit. In *Hanson v. Shell Oil Co.*,<sup>116</sup> the court cited the *International Air Industries* discussion of entry barriers as support for its own similar dual test of predation.<sup>117</sup> And later, the district court in *ILC Peripherals Leasing Corporation v. International Business Machines Corporation* (“*Memorex*”)<sup>118</sup> interpreted *Hanson* as establishing the same two tests for predation as *International Air Industries* had.<sup>119</sup> But the *Memorex* court stated,

The second test for predatory pricing should be applied only in the limited circumstances described above [extremely high entry barriers], and should probably be considered an exception to the marginal or average variable cost test rather than an independent test itself.<sup>120</sup>

An example of an approach to a predatory pricing case that considers the kinds of structural characteristics we have emphasized is the concurring opinion by Federal Trade Commission Commissioner Pitofsky in *Borden, Inc., Final Order to Cease and Desist*.<sup>121</sup> Pitofsky argued that in the presence of certain market-specific and firm-specific

114. The *International Air* court stated its test explicitly in the form of two alternative sufficient conditions:

[I]n order to prevail as a matter of law, a plaintiff must at least show that either (1) a competitor is charging a price below his average variable cost in the competitive market or (2) the competitor is charging a price below its short-run, profit-maximizing price and barriers to entry are great enough to enable the [competitor] to reap the benefits of predation before new entry is possible.

*Id.* (footnotes omitted).

115. *See id.* at 724 n.31.

116. 541 F.2d 1352 (9th Cir. 1976), *cert. denied*, 429 U.S. 1074 (1977).

117. *See id.* at 1358 & n.5.

118. 458 F. Supp. 423 (N.D. Cal. 1978).

119. *See id.* at 431-32.

120. *Id.* at 432. The *Memorex* court found support for its view that “the exception for a market with high barriers to entry is still recognized,” *id.*, in the Ninth Circuit opinion in *Janich Bros. v. American Distilling Co.*, 570 F.2d 848, 856-58 (9th Cir. 1977), *cert. denied*, 439 U.S. 829 (1978). In the latter case, although adopting an average variable cost rule, the court stated that, “As implied in *Hanson*, an across-the-board price set at or above marginal cost should not *ordinarily* form the basis for an antitrust violation.” *Id.* at 857 (emphasis supplied) (footnote omitted).

121. [1978] TRADE REG. REP. (CCH) ¶ 21,490 at 21,517. The Commission’s initial decision in the *Borden* case was analyzed extensively and cogently by Professor Schmalensee. *See Schmalensee, supra* note 3, at 998-1043. Our discussion focuses on the Commission’s final decision.

structural features, a rule that draws the line between reasonable and unreasonably exclusionary pricing at average variable cost is deficient.<sup>122</sup> He argued that because of its past expenditures on image advertising and promotion, Borden enjoyed a pronounced consumer preference and brand loyalty advantage that would not be taken into account by an average variable cost rule.<sup>123</sup> Pitofsky proposed instead that Borden should have been allowed to reduce its price only to average total cost because “[u]nder this standard, the monopolist would be able to respond selectively to competitive challenges down to its level of average full cost, but ordinarily would not be able to drive an equally efficient challenger out of the market.”<sup>124</sup>

The point we wish to emphasize about Pitofsky’s analysis is not the particular rule he applied in this case but his focus on structural features of the market in formulating that rule. Pitofsky explained that he was departing from the Areeda-Turner approach because “pronounced consumer brand loyalty is a barrier to entry,”<sup>125</sup> that may enable dominant firms to engage in predatory pricing without setting price below average variable cost.

Although the cases just discussed evidence concern about the structural characteristics on which the first tier of our approach focuses, the approach we propose differs in an important way from the analyses in these cases. The opinions we have cited view the issue of entry barriers as arising only in exceptional cases and, therefore, give it secondary consideration. In sharp contrast, under our approach an evaluation of structural characteristics is essential to a determination of whether monopoly power exists. Every case would begin with an inquiry into the structural characteristics of the defendant firm and the market in which it operates that would be broader in scope than the kind of examination undertaken in the cases mentioned above. Evidence concerning the relationship between the firm’s price and some measure of its costs, which is central to the general rule adopted by the courts whose opinions we have reviewed, would be introduced only in cases that reached the second tier under our approach, those in which structural characteristics could sustain an argument that a monopoly problem exists in the market. In contrast, a court applying a cost-based rule with a high-entry-barrier exception would examine the relationship between the defendant firm’s price and its cost in every case brought before it. Moreover, since under our approach the behav-

122. See *Borden, Inc.*, [1978] TRADE REG. REP. (CCH) ¶ 21,490 at 21,521-22, 21,524.

123. See *id.* at 21,521-22.

124. See *id.* at 21,523.

125. See *id.* at 21,524.



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ioral analysis is undertaken only when structural features indicate that monopoly conditions are of genuine concern, neither the average variable cost standard nor the short-run marginal cost standard is appropriate for deciding whether pricing behavior has been predatory. Instead, as we have indicated, a much more expansive rule-of-reason approach to pricing behavior is appropriate for structuring the second-tier behavioral inquiry.<sup>126</sup>

The decisions in which courts have adopted the average variable cost standard, noted the high-entry-barriers “exception,” and concluded that it did not pertain to the specific case, would have looked quite different under our approach. In each such case, either the structural preconditions for a proper showing of monopoly power were lacking or the court erred in its conclusion about the importance of entry barriers. In the absence of difficult entry conditions or similarly conducive structural features of the market, long-run monopoly power is unlikely. Hence, predatory pricing would be irrational and thus improbable. Therefore, if there were not significant entry barriers, and no other structural evidence was presented that pointed to a monopoly problem, the case should have been dismissed on structural grounds alone. If, on the other hand, the market’s structural characteristics implied the existence or prospect of long-run monopoly power, then the exception was relevant, and the court should have looked beyond average variable cost in deciding the issue.<sup>127</sup>

126. While the more expansive rule-of-reason analysis of pricing behavior in the second stage of our approach necessarily entails a more detailed and more resource-consuming investigation than would application of a per se cost-based rule, for the reasons discussed above, *see pp. 238-39, 242-43 supra*, we believe that such an inquiry is required. *Cf. ANTITRUST COMMISSION REPORT, supra note 20, at 143* (“some degree of complexity in antitrust litigation, where it is due to the generality or breadth of the applicable legal standards, in many cases may be necessary and desirable”).

It is interesting to note a parallel between our proposed approach to predatory pricing cases and the approach Professor Richard Posner suggests for determining the legality of restrictions on distribution imposed by a producer. Motivated by *Continental T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36 (1977), in which the Supreme Court rejected the rule that nonprice restrictions on dealer competition are illegal per se when imposed in sales contracts, Posner proposes a three-stage inquiry for determining the legality of both price and nonprice restrictions on distribution. *See Posner, supra note 54, at 20*. In the first stage of his inquiry Posner would ask whether a restriction embraces “so large a fraction of the market as to make cartelization a plausible motivation for the restriction.” *Id.* at 19. If not, Posner believes the restriction should be held lawful without proceeding to the other two stages where specific scrutiny of firm behavior would take place. *Id.* We do not wish to enter into a discussion of the merits of Posner’s proposal but want to point out that it, like our proposed approach, places the question of structural characteristics first. The inquiry moves on to a more detailed examination of firm behavior and its consequences only if the structural characteristics generate, in our terms, a reasonable expectation that cartelization is a possible motivation.

127. As a final note, our approach is consistent with the view of the National Com-

## Conclusion

Although there are significant differences among recent contributions to the literature on the law and economics of antitrust, at least two common themes are apparent. The first is that courts have been turning more to economic principles and relying more on economic analysis in reaching their decisions. The second recurrent theme is that if legal decisionmakers are going to "use economics" in coming to their conclusions, it is important that they apply economic analysis in a correct and consistent way. Judges, juries, and commissioners deciding antitrust cases not only must understand the particular conclusions that have emerged from the law-and-economics literature, but also must recognize the situations in which particular "rules" should be applied, and then apply them correctly.

In this Article, we have tried to develop a framework that yields a better appreciation and understanding of the appropriate place for each of the several rules or standards that have been proposed for application in predatory pricing cases. We believe that the decision-theoretic framework we have proposed for evaluating alternative predatory pricing rules can serve equally well as a mode of analyzing alternative rules in other areas of antitrust. Though only actually undertaking such analyses will decide the issue, we believe that the decision-theoretic framework would suggest the same kind of two-tier structuralist implementation of a rule-of-reason approach in these other areas as we were led to in the case of predatory pricing.

mission for the Review of Antitrust Laws and Procedures. In its recent report, the Commission states:

It is appropriate to inquire into the structure of the market, the defendant's market power, and similar indicia of ability to monopolize when the defendant's conduct is competitively ambiguous, that is, "when it might promote efficiency and competition under some circumstances, restrain competition under others, or be completely neutral in others." These factors will greatly affect the conduct's impact on competition. In such cases, the need to show a dangerous probability of monopolization should prevent Section 2 from being used to curtail legitimate competitive behavior.

ANTITRUST COMMISSION REPORT, *supra* note 20, at 148, quoting Petitioner's Brief for Certiorari at 12, *United States v. Empire Gas Corp.*, 429 U.S. 1122 (1977), *denying cert. to* 537 F.2d 296 (8th Cir. 1976) (footnotes omitted).

A price reduction is precisely the type of "competitively ambiguous" act to which the Commission refers; for this reason our focus on structure first and behavior second is the appropriate approach for deciding allegations of predatory pricing.