

ANTITRUST AND INDUSTRIAL ORGANIZATION[†]The Current State of the Law and Economics
of Predatory Pricing

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It has been almost 20 years since Phillip Areeda and Donald F. Turner introduced their proposals for antitrust policy toward predatory pricing. Their 1975 *Harvard Law Review* article, "Predatory Pricing and Related Practices under Section 2 of the Sherman Act," sparked a lively debate among legal scholars and economists that continued, mostly in law reviews, for several years. The controversy focused on the core Areeda-Turner (AT) test, which put forward short-run marginal cost as the appropriate, but difficult-to-measure, standard of a lawful price and recommended reasonably anticipated average variable cost as a surrogate. The discussion included consideration of other cost-based measures, as well as alternative rules restricting dominant-firm pricing and output policies and both structured and open-textured rule-of-reason analyses. The controversy also helped to illuminate the qualifications that Areeda and Turner imposed on their proposal.

One of the central issues in the debate concerning the AT test was whether or not it gave sufficient weight to the dynamic and strategic character of predatory pricing. All the participants in the discussion, including Areeda and Turner themselves, recognized that since the essence of predatory pricing is the predator's sacrifice of short-run gains for longer-run gains (and consequent harm to the public), the problem being addressed is inherently strategic. The lawyers and economists engaged in the debate differed, however, about whether anything practical

could be done to cope with the intertemporal strategic issues. Areeda and Turner's reliance on a static model of dominant-firm behavior to derive their test reflected their doubt that a sound legal rule could be fashioned to cope with the inherently "speculative and indeterminate" assessment of long-run considerations.

Curiously enough, just as the debate in the law reviews was winding down, the market-organization literature was beginning to see an infusion of contributions that used modern game-theoretic concepts and techniques to analyze well-specified models of strategic firm behavior in oligopolistic markets. In particular, several important contributions analyzed models of markets in which predatory pricing emerged as part of a set of equilibrium strategies. These contributions effectively undermined the view that, because of its costs to the would-be predator, predation is irrational and hence not likely to occur. This work is well categorized and well surveyed in the chapter that Janusz Ordover and Garth Saloner (1989) contributed to *The Handbook of Industrial Organization*. A central feature of this class of models is some asymmetry of information between market actors. The dominant incumbent firm is better informed than its smaller rival in models where the predator induces exit of competitors; the incumbent is better informed than potential entrants in models where predation takes the form of entry deterrence; and firms in general are better informed about their prospects than are their sources of financing.

The new market-organization literature on predation offered three major types of models. First, there were well-developed game-theoretic analyses of the long-purse or deep-pocket theories of predation, theories which Lester G. Telser (1966) had analyzed earlier in a perfect-information

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setting. The more recent contributions demonstrated how predation can occur in equilibrium if information is imperfect and if the dominant firm's financial resources are substantially greater than any potential competitor's and enable it to outlast any rival. Asymmetric information played an important role in some models by helping to explain the differential access to financing by the predator and the target. A second set of articles analyzed how, in the presence of asymmetric information about a firm's predilection to prey, an incumbent could use predation to build a reputation for toughness and thereby discourage potential entrants from entering other markets—whether different in time or location—in which they would have to face the dominant firm head-on. Finally, a third set of models was used to show that, when information about costs and market demand conditions is not symmetric, a predator can use a low price to signal to a rival that those cost or demand conditions make exit (or nonentry) a more attractive option for the rival than remaining in the market and continuing to face the dominant firm.

A recent contribution by David Roth (1992) uses the concept of rationalizability, due to B. Douglas Bernheim (1984) and David Pearce (1984), to show that predation can be an equilibrium strategy in a game in which players are uncertain, not about some structural parameter—a cost level, a demand condition, access to financing, or innate predilection to prey—but about the strategies their opponents will be playing. Roth shows that predatory pricing can be a rational strategy in the presence of such strategic uncertainty, that is, when there is a lack of coordination about the strategies being played by the opposing players. Each firm (dominant-firm incumbent and potential entrant) may be uncertain, for example, about how long its rival will be willing to continue to fight for market share or how willing its rival is to settle for a particular market share.

While the legal scholars and economists debated in the law reviews the merits of alternative approaches to predatory pricing, and while the applied microeconomic theo-

rists developed their models of rational predatory pricing, it was left to the courts of the land to apply all this learning. To date, however, the Supreme Court has declined to provide the basic legal definition of predatory pricing or to enunciate a legal rule that would enable lower courts, and in particular the trial courts on the front lines of predatory-pricing battles, to distinguish legal price-cutting behavior from illegal price reductions. This is not to say that the Supreme Court has provided no guidance to the lower courts concerning predatory pricing, but the signals have been less than clear. Hence, the several Circuit Courts of Appeals have struggled more or less on their own to choose among the AT test, alternative cost-based standards, other approaches put forth by commentators, and traditional notions of intent.

Areeda and Herbert Hovenkamp (1992) provide a comprehensive survey of the legal developments since the appearance of the Areeda-Turner article in 1975. Summarizing the general contours of the way the Courts of Appeals have treated predation, they write that “The First, Second, and other Circuits have emphasized price-cost relationships and explicitly agreed with us that there is no intelligible and administrable way to deal with the long-run strategic problem. Some courts have relied on price-cost relationships without discussing the long-run problem” (p. 628, footnotes omitted). Other courts, they observe, do explicitly look beyond price-cost comparisons, but “even those courts using intent or other standards to meet the long-run strategic problem end up using price-cost comparisons as the presumptive guide to predation. And because those other factors are so seldom existent or demonstrable, the price-cost comparison actually determines the outcome in virtually all the cases” (pp. 629–30, footnotes omitted).

In their summary of the case law, Areeda and Hovenkamp do include one proviso that takes precedence over the application of any cost-based test, namely, “Any price is lawful once it appears that the prerequisites for successful predation—especially the ability to maintain monopoly prices after

rivals are destroyed—are absent. In that event predation is not likely to be present and, even if it were, there would be no ‘dangerous probability’ that monopoly would result” (p. 631). This qualification is particularly important in any summary of the case law in view of the Seventh Circuit’s decision in *A. A. Poultry Farms, Inc. v. Rose Acre Farms, Inc.* 881 F.2d 1396 (7th Cir. 1989).

In *Rose Acre*, Judge Frank H. Easterbrook reviewed the three principal ways to distinguish a price reduction that is consistent with aggressive competition from one that is predatory: comparisons between prices and costs, determination of the alleged predator’s intent, and the possibility that the putative predator’s investment in charging low prices today will be recouped by the possession of a future monopoly. This last approach, which focuses on “the back end, the ‘high price later’ part of the predatory sequence,” (881 F.2d 1396, 1401) directs attention to elements of market structure and the feasibility of the alleged predator’s achieving and maintaining monopoly power in the long run.

Judge Easterbrook rejects intent as a basis for determining whether a price reduction is predatory; he argues that it is just too unreliable an indicator and can play no useful role in such litigation. He also emphasizes the difficulty of applying the cost-based tests. Consequently, the *Rose Acre* court adopts the analysis of market structure and the possibility of future recoupment as a filter to separate those cases that need careful consideration of the pricing behavior of the firm—and particularly inquiry into the relation between price and cost—from those that do not. It adopts the kind of first-tier structural inquiry that Paul L. Joskow and I (1979) proposed during the earlier debate about the AT test. (In the latest installment of the *Inglis* saga, *William Inglis & Sons Baking Co. v. Continental Baking Co.* 942 F.2d 1332, 1345 (9th Cir. 1991), Judge John T. Noonan’s concurring and dissenting opinion also placed great emphasis on the importance of market structure.) Since Judge Easterbrook and his colleagues conclude that recoupment was not possible in

the *Rose Acre* market and hence that predation was not a rational strategy there, he does not take up the cost-based tests and discuss how to apply them when detailed consideration of pricing behavior is necessary.

When Judge Easterbrook adopted the approach that focuses on market structure and the alleged predator’s ability to recoup its investment of forgone short-run profits, he found support in the two most recent Supreme Court cases that had considered predatory pricing, *Cargill, Inc. v. Monfort of Colorado, Inc.* 479 U.S. 104 (1986) and *Matsushita Electric Industrial Co. v. Zenith Radio Corp.* 475 U.S. 574 (1986). In both cases, Judge Easterbrook noted, the Court employed the market-structure approach to find “that recoupment would be so unlikely that antitrust inquiry could not be justified” *A. A. Poultry Farms, Inc. v. Rose Acre Farms, Inc.* 881 F.2d 1396, 1401 (7th Cir. 1989).

The Supreme Court’s message about predatory pricing has been more mixed than that, however. To be sure, in *Cargill* and *Matsushita* the Court indicated that if a market-structure inquiry reveals the infeasibility of the long-run recoupment required to make predation a rational strategy, then a claim of predatory pricing is without merit. In both cases, however, the Court also made price–cost comparisons central in assessing predatory pricing.

For example, the *Cargill* Court was explicit about the importance of market structure and examined the character of the beef-packing market at issue in that case. It considered, among other factors, the alleged predator’s share of market capacity and whether there would be barriers to entry in a postpredation environment. Moreover, *Cargill* stated the general proposition that “Courts should not find allegations of predatory pricing credible when the alleged predator is incapable of successfully pursuing a predatory scheme” (479 U.S. 104, 119 n.15). But the Supreme Court’s analysis of market structure and the role it should play in assessing claims of predation followed upon the statement that “Predatory

pricing may be defined as pricing below an appropriate measure of cost for the purpose of eliminating competitors in the short run and reducing competition in the long run" (479 U.S. 104, 117). The Court observed that commentators and lower courts alike differed on the appropriate measure of cost and that "No consensus has yet been reached on the proper definition of predatory pricing in the antitrust context" (479 U.S. 104, 117 n.12). The Court found the definition of pricing below cost sufficient for purposes of its deciding *Cargill* and thus found it unnecessary, just as in *Matsushita*, to consider whether a plaintiff should ever be able to recover when the allegedly predatory price exceeds some measure of incremental cost.

The Supreme Court's most recent remarks about predatory pricing are in *Atlantic Richfield Company v. USA Petroleum Company* 110 S. Ct. 1884 (1990), which held that a firm could demonstrate that it had suffered antitrust injury as the result of a competitor's vertical maximum price-fixing arrangement only if the scheme resulted in predatory pricing. But the Court said, "We have no occasion in the instant case to consider the proper definition of predatory pricing, nor to determine whether our dictum in *Matsushita* that predatory pricing might consist of 'pricing below the level necessary to sell [the offender's] products'... is an accurate statement of the law" (110 S. Ct. 1884, 1893 n.10). The lack of a clear definition of predatory pricing is quite unfortunate in *ARCO* since the remand of the case seems to require a lower court to determine whether the plaintiff was the victim of predatory pricing.

Where in all of the judiciary's elaboration of the law of predatory pricing are the insights of the market-organization literature on predation? Nowhere. The equilibrium models of predatory pricing developed in the last dozen years or so have not had an impact on the developing antitrust law of predatory pricing. The encyclopedic survey of the subject in the Areeda and Hovenkamp (1992) *Supplement* to the leading antitrust treatise contains no refer-

ence to the game-theoretic work. The fair number of recent cases I have read on predatory pricing also contain neither explicit references to this literature nor substantive discussions that reflect any influence it might have had. As a check against selection bias in what I read and in what Areeda and Hovenkamp drew from the many cases they cited, I undertook a bibliographic search using LEXIS.

My search strategy had two components. I applied each one to the set of all Supreme Court and Circuit Courts of Appeals cases decided from January 1980 through November 1992 that contained the term "predatory pricing." There were 193 such cases; for ease of reference, call them "the predation-citation cases," where I use the modifier citation to emphasize that not all of these cases concerned claims of predatory pricing. My first approach was to use LEXIS to check each of these cases for any reference to the authors of several major contributions to the new literature, namely, Drew Fudenberg and Jean Tirole, David Kreps and Robert Wilson, Paul Milgrom and John Roberts, and Janusz Ordover and Garth Saloner. There were no citations to these authors in the predation-citation cases.

The second line of inquiry I undertook was to check this set of cases for mention of several concepts that are fundamental to the equilibrium models of predatory pricing. Specifically, I searched for mention of deep pocket, reputation, signaling, and asymmetric information. None of the cases that contained both the term predatory pricing and one of these other terms drew upon or fit well with the recently developed theories.

No predation-citation cases alluded to asymmetric information. The key word signaling produced two predatory-pricing cases in the telecommunications industry; there was no notion of the predator firm using its price to signal anything about cost or demand conditions. Ten of the 13 predation-citation cases that mentioned reputation did so in a way that was unrelated to any issue of predatory pricing. The three remaining cases that included references to both predatory pricing and reputation introduced

the latter in the context of the predator's harming the reputation of the prey. The cases did not conjure up any image of a predator using price wars as a way of building a reputation for toughness.

Finally, six of the predation-citation cases referred to the fact that a large firm had a deep pocket. Two of them, however, were identified by the search only because they contained a quotation from *Brunswick v. Pueblo Bowl-O-Mat, Inc.* 429 U.S. 477 (1977), which was not about predatory pricing but in which the Court made reference to the "deep-pocket" parent of a firm that was acquired. One case mentioned both predatory pricing and deep pocket in a dissenting opinion that referred to the effort of an unsuccessful competitor to use litigation to tap the deep pocket of its larger rival. Only in two of the cases did an opinion invoke the predator's deep pocket as part of a story about how the larger firm could outlast its rivals. Neither one displayed any sophisticated intuition or analysis about the role that the deep pocket might play in a predatory pricing strategy.

The lack of impact that the recent equilibrium models of predation have had on the development of antitrust law concerning predatory pricing is unfortunate. The major cases on predatory pricing have been particularly concerned with the rationality of predation by a dominant firm. They have not heeded, however, the lessons of the recent microeconomics literature that suggest a possible role for price predation in a dynamic strategic context. The recent Supreme Court opinions considering predatory pricing note "a consensus among commentators that predatory pricing schemes are rarely tried, and even more rarely successful" *Matsushita* (475 U.S. 574, 589) and conclude that "it is plain that the obstacles to the successful execution of a strategy of predation are manifold, and that the disincentives to engage in such a strategy are accordingly numerous" *Cargill* (479 U.S. 104, 122 n.17). The theoretical support offered for these conclusions was the earlier theoretical literature (e.g., Robert H. Bork, 1978; John McGee, 1958, 1980) that argued that predatory pricing is irrational.

Furthermore, if the policy objective is to design a test to distinguish predatory-price cuts from aggressive competitive price reductions, that test ought to be articulated in the context of situations where one believes predation may be rational for the predator and harmful for society. But the models that suggest when predation may be part of a set of equilibrium strategies have not been the basis for the design of such rules. If substantial informational asymmetries constitute an important prerequisite for rational predation, then it would seem essential that any "test" for predation include an assessment of the informational characteristics of the market in which it is alleged that predation occurred. (Ordover and Saloner [1989] make a similar point at the close of their *Handbook* chapter.) The various models of equilibrium predation that have been analyzed can also be used to evaluate the prevalent focus on cost-based tests and particularly the application of the AT test based on short-run marginal cost (or reasonably anticipated average variable cost as a surrogate). In the models in which predation is an equilibrium phenomenon, the successful use of price as an instrument to deter entry or to induce exit does not require prices that would fail the AT test.

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