Predatory Pricing, the Courts, and Public Policy[*]

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I.   **Introduction**

Antitrust law proscribes predatory pricing mainly through the application of Section 2 of the Sherman Act which prohibits acts of monopolization and attempts to monopolize.[1] Although predatory pricing is generally described as "a dominant firm's use of price to restrict competition by driving out existing rivals or excluding potential ones,"[2] the courts and legal commentators have failed to reach any consensus in their efforts to give specific content to this concept.

Courts have repeatedly relied on vaguely defined concepts as "below-cost pricing,"[3] "ruinous competition,"[4] and "predatory intent,"[5] in their attempts to delineate the elements of a predatory pricing offense. It has been argued that such "empty formulae" are the result of the inability or refusal of the courts to employ standard microeconomic analysis to distinguish normal competitive behavior from predatory pricing.[6] The application of vague formulae may be inherently subject to abuse in the protection of entrenched positions and may serve to deter legitimate competitive pricing.[7] Under these uncertain conditions, to the detriment of consumers and the economy as a whole, firms are apt to be deterred from engaging in legitimate competitive pricing lest they be the subject of a predatory pricing suit. Accordingly, various analysts have set out to construct workable criteria to distinguish between predatory pricing and market activity serving to promote competitive efficiency.

In this paper, we wish to show that if the goal of maximizing consumer welfare is the primary objective the emphasis should be shifted from the discussion of predatory pricing rules to the removal of impediments to entry into concentrated industries. The problems of establishing rules for distinguishing predatory from normal competitive pricing are exposed by means of an analysis of the three leading approaches to predatory pricing by Paul Areeda and Donald Turner, Oliver Williamson, and Paul Joskow and Alvin Klevorick, respectively. The role of entry is then considered.

II.   **Areeda and Turner**

Areeda and Turner's cost based rules are premised on the belief that actual cases of predatory pricing are unlikely. The authors point out that predatory pricing only makes economic sense to the dominant firm when two conditions are met. The predator must have greater financial resources than potential or actual rivals, and there must be a strong probability that the profits to be gained after the elimination of actual or potential rivals will exceed the losses sustained during the "predatory campaign." Moreover, a dominant firm's incentive to engage in predation is further dampened by the possibility that even after the competitor is eliminated, "his physical capital or

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production goods may remain intact and in the market in the hands of others."[8]

Areeda and Turner's rules, set forth below, only proscribe predatory behavior when the dominant firm's price falls below short-run marginal cost. Cases 1, 2, and 3 are considered legal behavior, and only case 4 is proscribed.

1. Legal: establishing a short-run loss minimizing price which falls below average total cost.

2. Legal: establishing a short-run non-profit maximizing price at or above average total cost.

3. Legal: establishing a short-run price above short-run marginal cost and average variable cost, even though it is below short-run average total costs.

4. Illegal: pricing below short-run marginal cost unless at or above average total cost.

Areeda and Turner correctly point out that pricing below marginal cost results in "out-of-pocket" losses for the dominant firm and in resource misallocation for society. When prices are set below marginal cost, the firm's revenues are less than the immediate short-run costs associated with the additional output. Furthermore, when a good is sold at a price less than its marginal cost, society is misled as to the value of the resources used in the production of the good. Moreover, when a dominant firm engages in below marginal cost pricing, there is danger that rivals or new entrants will be eliminated for reasons other than efficiency, thereby preventing the growth of legitimate competition.

For Areeda and Turner such dangers are less real when a dominant firm reduces its price to a level at or about average total cost in the face of entry. Although such reductions entail a sacrifice of short run profits and may be calculated to impair the entry opportunities of new and potential rivals, Areeda and Turner presume the legality of such pricing behavior, a form of "limit pricing."[9]

Areeda and Turner maintain that average cost pricing is meritorious competition and promotes efficiency. Only those rivals, actual or potential, that are less efficient than the dominant firm (i.e., those whose average cost curves exceed that of the dominant firm) are excluded. Moreover, consumers benefit from the lower prices and the higher output associated with this pricing strategy.

However, in reaching the above conclusion, Areeda and Turner fail to recognize the possibility that the "inefficiencies" or the higher average costs that plague new entrants may, in fact, be frictional and temporary. For example according to Williamson, production in a particular industry may be characterized by "learning by doing."[10] Under these circumstances, within a short time, the new entrant's average costs may decline as it becomes more familiar with and accustomed to the technology and know-how of production. An increase in legitimate competition would then ensue. However, a dominant firm's limit pricing, as permitted by Areeda and Turner, may preclude "learning by doing" and result in the elimination of potentially equally efficient rivals.

Similarly, a dominant firm's hold on the market may be attributable mainly to its past intensive advertising rather than any actual efficiencies in production. Consequently, a new entrant's early marketing costs may be high because of the large initial advertising investment necessary to attract sales. As new entrants develop a

share of the market, their average advertising costs should decline to a level competitive with the dominant firm. Again, limit pricing may prevent the realization of such cost efficiencies.

The previous discussion has assumed that the dominant firm's price reduction is permanent. This is not always the case. Where barriers to entry are high (e.g., large investments of physical capital are necessary), a potential entrant will refrain from entry unless it appears that he will survive in the market at least long enough to recover his initial investment. In this situation the dominant firm could temporarily reduce its price for a period long enough to force out any actual entrants and scare off potential entrants. After the temporary reduction, the monopolist may reinstate his profit maximizing price.

Areeda and Turner refuse to choose between temporary and permanent price reductions. They argue that even a temporary reduction only excludes less efficient rivals. Moreover, they point out that temporary reductions may be less exclusionary than permanent reductions since "some potential entrants may have the staying power to meet the monoplist's temporary low price."[11]

Nonetheless, there is an obvious difference between temporary and permanent price reductions. It is the inability of Areeda and Turner's model to make this distinction which is at the basis of Oliver Williamson's criticism. The benefits to consumers from permanently lower prices and increased output all but vanish when the reduction is temporary. In fact, as Williamson points out, the temporary increase in output and the decrease in price may have harmful consequences should consumers misperceive the temporary nature of the changes and alter their consumption and consumer capital investment patterns accordingly.[12]

Although Areeda and Turner acknowledge that there are problems associated with temporary price reductions they see no method of legal control that would not entail substantial administrative problems and encourage entry by inefficient firms. In particular, Areeda and Turner consider two suggested proposals.

The first proposal forbids the dominant firm from charging a price below that of a new entrant for a time calculated to allow the entrant to recover his start-up costs. Areeda and Turner point out three obvious problems involved with such a rule: First, "relative qualities and consumer preferences would have to be assessed in order to determine when a particular price in fact merely meets rather than effectively undercuts the rival's price."[13] Second it would be extremely difficult to calculate the time needed to recover start-up costs; and, third, even if this period were determined, the longer the constraint lasted, the more likely it would be that the entry of inefficient new firms would be encouraged with a consequent waste of resources.

The second proposal proscribes the reversal of a dominant firm's price reduction, thereby "discouraging temporary reductions from the outset or at least giving consumers the permanent benefit of the lower prices."[14] Areeda and Turner accurately point out that the applicable "price ceiling" would have to be flexible enough to account for any upward pressures on prices created by increases in demand and/or factor costs. Moreover, the entry of inefficient firms would be encouraged when in response to the rule the dominant firm decided to forego a legitimate temporary price reduction.

Areeda and Turner also presume the legality of marginal cost pricing even when the price is set below average total cost. Such pricing could deprive rivals of normal returns on their capital and serve to "bankrupt" an equally efficient rival whose financial

resources were less than those of the dominant firm. With the rival gone, the dominant firm may then be able to impose exploitive monopoly prices due to the decrease in industry-wide capacity. Nevertheless, Areeda and Turner would affirm the legality of such below average cost pricing.

First, Areeda and Turner argue there are social gains which may derive from marginal cost pricing, even in the short run. Such pricing serves two important functions. First, it insures the efficient use of existing productive capacity and allows entry only to firms whose average costs are less than the dominant firm's marginal costs. Second, Areeda and Turner contend that even if long run welfare in a particular case may be maximized by forbidding such pricing, any attempt to determine that fact would be "beyond the capacity of either the monopolist who would have to make it in advance, or the judge who would have to make it after the fact; and probably beyond the present capacity of economics itself."[15] As noted by Williamson, determinations of long-run welfare would depend on data that was inherently speculative and indeterminate.

In setting their rule allowing marginal cost pricing, the difficulties of ascertaining marginal cost lead Areeda and Turner to suggest the use of average available cost as a surrogate.[16] They assert that average variable cost is an adequate proxy for marginal cost for the range of output near the intersection of the two functions. By definition, this intersection occurs when average variable cost is at a minimum. However, as one approaches levels of output where marginal cost clearly exceeds average variable cost, the suitability of using average variable cost as a proxy becomes questionable. In these regions of output an average variable cost rule is decidedly more permissive than a marginal cost rule because it permits firms to sell well below their marginal cost.

Although Areeda and Turner acknowledge this problem, they question its gravity. The authors observe that marginal cost is higher than average variable cost when the firm is approaching capacity. At such levels of output, Areeda and Turner argue, predation is rather unlikely because the firm is not in the position to easily absorb new demand. Nonetheless, as a cautionary device, Areeda and Turner would require that an alleged predator, in addition to proving that his price exceeds average variable cost, should also demonstrate that his marginal cost did not substantially exceed the former. In other words, the alleged predator would be required to show that the firm's capacity was not strained, by demonstrating that the firm was "not paying overtime wages or premiums for materials or was not utilizing inefficient standby facilities."[17]

Because of Areeda and Turner's steadfast adherence to the proposition that efficiency is maximized by short-run marginal cost pricing, their cost-based rules are unable to reach certain forms of exclusionary pricing strategy: limit pricing, temporary price reductions, and marginal cost pricing below average cost during temporary declines in demand. The Areeda and Turner model is also flawed by the use of average variable cost, a very rough approximation of marginal cost, as a surrogate for the latter. Moreover, the ability of economists, let alone judges and juries, to determine with any exactness the various kinds of costs has yet to be demonstrated. Although in recent years several federal appeals courts have invoked the Areeda-Turner rules, one may well wonder to what extent consumer welfare and economic efficiency have benefited as a consequence.

III.   **Williamson**

Oliver Williamson rejects the Areeda and Turner cost-based rules in favor of an output restriction model. Williamson argues that the static framework employed by Areeda and Turner focusing on marginal cost pricing is deficient in three respects. First,

although the use of marginal cost standards may be appropriate where shifts in output are relatively permanent, where such shifts are temporary and aimed at deterring entry, application of the model may produce undesirable results. Second, Areeda and Turner fail to recognize that firms adapt their behavior in response to the prevailing legal rule, and that such adaptations must be considered when evaluating the merits of any rule. Williamson submits that when such behavior is taken into account the Areeda and Turner rules can be demonstrated to be less efficient than his own proposed rule based on changes in output levels. Third, Williamson contends that unlike his output restriction rule, Areeda and Turner's cost-based rules present difficult problems of enforcement.

Nevertheless, the Williamson and Areeda and Turner proposals share some common assumptions. They share the view that any predatory pricing rule should be evaluated in terms of economic efficiency and directed toward the protection of competiton and not competitors. Neither proposal concedes a concern for "fairness" in the marketplace or the preservation of the small independent businessman.[18] The two models assume that only dominant firms will have the financial incentive to engage in predatory pricing, and finally they assume that actual cases of predation are rare.

According to Williamson the evaluation and analysis of any predatory pricing standard should be guided by three criteria.

(1)   Rules that invite greater pre-entry output restriction and higher cost supply are plainly less favored.

(2)   For any given level of post-entry supply, social gains are realized whenever output is supplied at a lower cost.

(3)   Rules that require prospective entrants to have greater knowledge or to bear greater uncertainty are disfavored, ceteris paribus.[19]

Unlike the Areeda and Turner model, which only contemplates a dominant firm's immediate reaction to entry, Williamson recognizes that a dominant firm's pre-entry behavior is a function of the existing legal rules. Williamson assumes that given any existing predatory pricing rule, a dominant firm will adjust its investment in plant and equipment "such that the profits of any entrant, were one to appear, would be reduced to zero if the dominant firm responded to entry in the most aggressive manner allowed by the prevailing rule."[20]

Williamson's output restriction rule prohibits a dominant firm in the face of entry from increasing its output above its pre-entry level. This restraint would last for a period sufficient to allow the new entrant to "realize cost economies and establish a market identity."[21] Williamson implicitly recognizes the possibility that efficiencies of production may not be static, and may increase over time as "learning by doing" occurs.

Operating under the assumption that a dominant firm's pre-entry price, output, and investment are a function of the prevailing legal rule, Williamson demonstrates that an output restriction rule has the effect of increasing the pre-entry output and decreasing the price of the existing dominant firm. Figure 1 illustrates these results.

Curve D respresents the industry demand curve, and "d" represents the "residual demand curve," the demand available to new entrants when the dominant firm is unable to increase its output beyond Q. The long-run average cost curve for the industry, assumed to be "accessible to existing firms and potential entrants," is labeled LRAC. This curve is, however, higher for initial outputs and declines thereafter.

Given an exclusionary strategy, the dominant firm will choose output Q such that the potential economic profits of a new entrant will be zero. At output Q, the residual demand curve lies tangent to LRAC but never exceeds it, thereby denying new entrants the opportunity to make positive economic profits. In the pre-entry period if the dominant firm had chosen output Q_1, the output associated with unconstrained monopolistic pricing, the residual demand curve would shift to the right above LRAC and allow new entrants to earn positive economic profits.

Assuming the dominant firm strategically chooses output Q, an additional output of Q_2 will be supplied if, in fact, entry does occur. The market price for all output will decline to P_2. At output Q_2 and P_2, however, as pointed out previously, entrants will be merely breaking even; nevertheless since P_2 exceeds LRAC at output Q, the dominant firm will still enjoy positive economic profits.
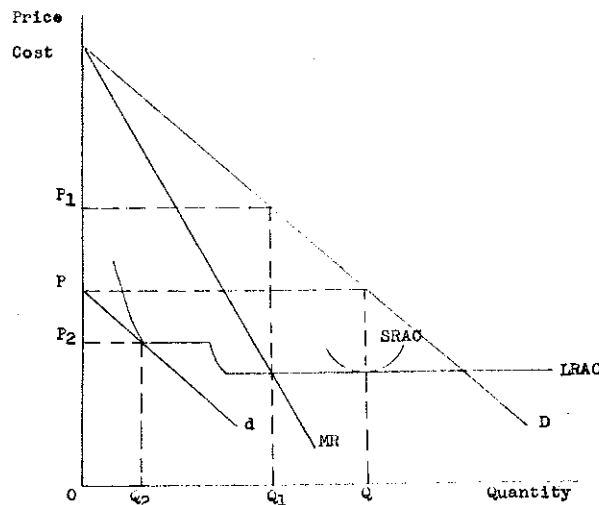

Figure 1

Source: Oliver Williamson, "Predatory Pricing: A Strategic and Welfare Analysis," Yale Law Journal, Spring, 1977, p. 297.

Operating under these assumptions of firm strategic behavior, Williamson examines the effects of a marginal and average cost rule on pre-entry output and price. Under both rules, the dominant firm is allowed to increase pre-entry output subject to the restriction that price not fall below either marginal or average variable costs in the face of entry. Williamson demonstrates that when either rule is in effect, the dominant firm will choose an optimal "plant scale" such that tangency between the residual demand curve of a potential entrant and the long-run average cost curve comes to obtain. In the pre-entry period, the dominant firm will choose the output under these conditions that maximizes profits, i.e. where marginal revenue equals short-run marginal cost. Should entry occur the dominant firm will increase output to the point where price, at the corresponding level of residual demand, will just equal long-run average cost thereby depriving new entrants of the incentive of positive economic profits.

Applying the three criteria previously stated, Williamson concludes that an output restriction rule is superior to average and marginal cost rules.[22] In terms of pre-entry

welfare, under the output restriction rule, output is higher and the costs of supply are lower.[23] In terms of post-entry welfare, the three rules result in the same amount of output; however the cost of such output is minimized under the output restriction rule.

A further advantage of the output restriction rule is that it allows potential entrants to form expectations with relative ease.[24] Under output rules, potential entrants are secure in their knowledge that in resonse to entry, the "worst" the dominant firm can do is to keep output constant. However, where either the marginal cost or average cost rule is in effect the prospective entrant, in order to gauge its response, must estimate the dominant firm's marginal and variable cost curves. Such an estimation is costly and uncertain. Additional risk for the potential entrant arises from the latitude of output response permitted by the cost-based rules. However, under the output rule, the dominant firm's output will either remain steady or be reduced; output under cost-based rules may increase, decrease, or stay the same.

Finally, Williamson points out the relative ease of enforceability of the output rule. As Areeda and Turner concede, not only do tremendous difficulties exist in estimating marginal cost, but there are also serious difficulties in estimating its surrogate, average variable cost. Similar problems are encountered in the attempt to construct a firm's average total cost curve.

Of course, there are still substantial enforcement difficulties entailed in the output rule. Since over time the dominant firm's post-entry output should be allowed to reflect secular growth in demand, the estimation of the permissive level of output necessarily entails a demand forecast. However, Williamson suggests that a "simple trended average of recent sales" would be an adequate projection in most cases.[25]

Although Willaimson points out many of the failings of the Areeda and Turner model, the output restriction rule is not without its problems. Williamson does suggest that dominant firms will adjust their behavior in response to the existing legal rule. But Williamson fails to address the argument that such strategic adaptive behavior may also be a function of the prevailing remedies. For example, if it is generally felt that the application of the prevailing legal remedies fail to deprive the dominant firm of the benefits of a predatory campaign, the firm in the pre-entry period may act as if the legal rule was nonexistent. Alternatively, if the prevailing rememdies are particularly punitive or bring about substantial structural change in the industry, the dominant firm may attempt to minimize the probability of an erroneous finding of a violation by engaging in "safer" pre-entry warfare. If the Williamson model is to be complete, it should be expanded to take into account these possible relationships.

IV. **Joskow and Klevorick**

The third and last proposal, authored by Paul L. Joskow and Alvin K. Klevorick, suggests a two-tier analysis. The first tier of Joskow and Klevorick's "decision-theoretic framework" consists solely of a structural analysis of the firm and industry in question. The object of this initial investigation is the determination of whether the particular market is one where there is a strong likelihood that predatory pricing will occur.[26] In situations in which it is determined that truly predatory pricing is unlikely, the lawsuit will be summarily dismissed.

Although Joskow and Klevorick devote thirty pages to the explanation of tier one, the authors add no special new insights to the predatory pricing dilemma. Tier one is the familiar "monopoly power" analysis performed by a court in any Section 2 investigation. Since most allegations of predatory pricing are part of a larger Section 2 monopolization

case, Joskow and Klevorick's tier one analysis amounts to a redundant requirement. Moreover, there is nothing unique or creative about the authors' "revelation" that actual predatory pricing is most likely to occur in monopolistic markets; in fact, this assumption underlies the proposals suggested by Areeda and Turner, and Williamson.[27]

At any rate, in those situations where it is found that there is a substantial likelihood of predatory pricing, Joskow and Klevorick would subject the case to tier two evaluation. Under tier two, a price reduction to average total cost would be presumed legal unless the reduction was substantially reversed within a specified period of time, e.g., two years. In the event of such a reversal, the alleged predator would have the burden of proving a legitimate justification. For pricing below average total cost but above average variable cost, tier two presumes a violation unless the dominant firm can show that its pricing strategy maximizes short-run profits. Finally, prices below average variable cost are conclusively presumed illegal.

The main contribution of the Joskow and Klevorick approach is to integrate previous analyses. Tier two combines various pieces of previously suggested approaches: the average variable cost standard of Areeda and Turner, the sustained price reduction test of Baumol,[28] and Williamson's output restriction rule.

V. Predatory Pricing and Public Policy

More recently in a searching analysis of limit-entry pricing, predatory pricing, and barriers to entry, Harold Demsetz concluded:

> The distinction between limit-entry pricing and predatory pricing is only the difference in the level of price (relative to cost) that is assertedly necessary to bar entry.... It simply is impossible to distinguish such pricing from aggressive or promotional competitive pricing.... Our utterances in this regard may be accorded the skepticism appropriate to fairly unadorned opinion.[29]

In the absence of sound policy guidelines in this area as indicated by the critique in this paper, and given the skepticism voiced by Demsetz and others[30] concerning our ability to devise such guidelines, what contribution can economists make regarding the welfare and antitrust implications of pricing in highly concentrated industries. There is no doubt that low prices benefit consumers, whether they result from competitive or predatory behavior. However, in the latter case, the benefits derived from low prices may be outweighed by a period of higher future prices made possible by the predatory behavior. Indeed the presumption is that the higher future prices will more than offset the lower predatory prices, otherwise there would be no incentive to engage in predatory pricing. But this will be the case only if the predator can confidently boost prices when the predatory episode is over. Having eliminated the rival of rivals, a major deterrent to the establishment of highly profitable future prices by the surviving firm or firms is the threat of entry. For if new firms are again attracted to the industry by large profits, then the benefits of predatory behavior would be largely eliminated. The gains from predatory pricing are contingent upon not only eliminating current rivals, but also upon discouraging new rivals from entering the industry. But what will deter new entrants? The threat of future predatory pricing in the industry will not necessarily discourage entry. There is always the possibility that high profits will attract a firm or firms willing and able "to undergo initial losses with a view to driving some existent firms out, in the hope of surviving and earning the lucrative premiums that are being made in the industry."[31] It is this potential entry that curbs excessive profits. We can draw on recent developments in the area of industrial organization to support the proposition that

potential entry acts as a deterrent to predatory pricing. In particular, the theory of contestable markets, as developed by William Baumol et al, holds "that in a perfectly contestable market, market forces will guarantee that prices will not remain predatory in the Areeda-Turner sense."[32] And on the power of potential entry "...freedom of entry, indeed the mere threat of incursions by entrants into the market, may effectively discipline the monopolist, even if entry is never successful. It can force the monopolist to curb his avarice and forgo profits he might otherwise have enjoyed."[33]

The public policy implications are clear: remove or lower barriers to entry. A corollary of this proposition is that public policy should avoid regulations that inhibit entry. Not only does this apply to the regulation of domestic markets, such as the airlines, but also to international trade. In the latter case, a striking example is the rivalry generated in the domestic automobile firms by the Japanese car producers. To the extent that entry into (and exit from) a market is easy, predatory pricing is self-defeating, as discussed above. Where entry is very difficult, predatory pricing is usually unnecessary. This narrows considerably the range of industries in which predatory pricing would be likely to occur, and it may explain why some observers feel that in fact predatory pricing is rare.[34]

VI. Conclusion

In recent years, the Areeda and Turner rule has been used by many courts in predatory pricing cases, but other courts have been seen fit to reject this rule. Presently, there is no unified legal or economic approach to the problem of predatory pricing. A predatory pricing rule must be able to distinguish between predatory pricing and legitimate competitive pricing. Although the rule should not make it possible for firms to practice predatory pricing under the guise of competitive behavior, it should not discourage firms from engaging in legitimate competitive activities because of the fear of possible legal action. Some economists now feel that the precise formulation of such a rule is unattainable. They may be right, given the number of unsatisfactory and conflicting proposals put forth as well as the lack of progress in the courts. But this situation does not preclude the establishment of public policy measures designed to reduce or eliminate the incidence of predatory pricing.

The major policy thrust should be toward removing barriers to entry, avoiding regulations that inhibit entry and, where possible, devising regulations that facilitate entry. Entry should be facilitated for both domestic and foreign firms. Foreign entry is especially important where barriers such as economies of scale lead to highly concentrated domestic industries. A prime example is the domestic automobile industry where foreign entry in recent years has promoted intense rivalry, to the benefit of consumers. But actual entry need not ever occur. As the likelihood of entry increases, the probability of generating profits great enough to recoup those lost during the predatory campaign declines. Under such circumstances, predatory pricing becomes increasingly risky as a business strategy.

FOOTNOTES

[1] 15 U.S.C. S2. Additionally, the Clayton Act S2, as amended by the Robinson-Patman Act, 15 U.S.C. S13 (1970), and the Robinson-Patman Act S3, also proscribe predatory pricing.

[2] See Joskow and Klevorick, "A Framework for Analyzing Predatory Pricing Policy," 89 Yale Law Journal 231, 219 (1979).

[3] See e.g., National Dairy Products Corp. v. United States, 350 F.2d 321, 327 (8th Cir. 1965) vacated and remanded on other grounds 384 U.S. 883 (1966).

[4] See Puerto Rican American Tobacco Co. v. American Tobacco Co. 30 F.2d 234, 236 (2nd Cir. 1927), cert. denied, 279 U.S. 858 (1929).

[5] See Maryland Baking Co. v. F.T.C., 243 F.2d 716, 718 (4th Cir. 1957).

[6] See P. Areeda and D. Turner Antitrust Law (1978).

[7] See e.g., id., at 711c; also Oliver Williamson, "Predatory Pricing: A Strategic and Welfare Analysis," 87 Yale Law Journal 284, 286 (1977).

[8] Id.

[9] Limit pricing can be illustrated by the following example. Dominant firm X can maximize short-run profits at a price of $150. Average total costs for dominant firm X is $100 at this level of output, while for potential entrants it is $125. Firm X may choose a price of $124 thereby preventing new entrants from "breaking even" and deterring entry. Firm X retains the entire market, but at a lower price. Firm X will only engage in this behavior if the value of the discounted income stream at the lower price of $124 exceeds that of the shared stream at $150.

[10] Williamson Proposal at 303, n. 57.

[11] Areeda-Turner Treatise at 714c.

[12] Williamson Proposal at 291. According to Williamson the value of the Areeda-Turner model is undermined by its inability to distinguish these reductions.

[13] Areeda-Turner Treatise at 714c.

[14] Id.

[15] Id. at 715a.

[16] Such difficulties include, (1) the inability to properly define the elements of marginal cost and, (2) the problem of deriving the incremental cost of an extra unit of output from coventional business accounts. However, Areeda and Turner admit that there are similar difficulties, though less insurmountable, in calculating average variable cost.

[17] Id.

[18] See Standard Oil Co. of California v. United States, 337 U.S. 293 (1949) (Douglas, J., dissenting).

[19] Williamson Proposal at 293.

[20] Id., at 294.

[21] Id. Williamson suggests that the restraint be imposed for 18 months. Naturally problems may raise since the time it takes for a firm to establish a market identity may vary among industries.

[22] Id., at 310. However, Williamson does foresee the use of cost-based rules where predatory pricing is directed at established rivals. Where the market can be characterized as a "loose oligopoly" with stable demand the proper standard should be average cost. A marginal cost standard should be applied where there is a loose oligopoly characterized by declining demand. Similarly, "early stage growth industries" would be subject to a two-stage test where the would-be dominant firm would be subject to a remumerative pricing test and the plaintiff would be required to show that it could "attain cost levels competitive with the defendant firm's costs."

[23] Id. at 307. Williamson measures cost of production as the short-run average cost at a particular level of output.

[24] Id. at 312.

[25] Williamson Proposal at 305.

[26] Joskow and Klevorick at 246.

[27] Admittedly, Joskow and Klevorick add such new terms as "false positive error" and "false negative error" to our predatory pricing vocabulary; however, such types of error, albeit previously unlabeled, are implicitly recognized by Williamson and Areeda and Turner.

[28] William Baumol, "Quasi-Permanence of Price Reductions: A Policy For Prevention of Predatory Pricing," 89 Yale Law Journal 1 (1979).

[29] "Barriers to Entry," American Economic Review, 72 (March 1982), 56-57.

[30] For example, see John S. McGee, "Predatory Pricing Revisited," Journal of Law and Economics 23 (October 1980), 289-330.

[31] Jagdish N. Bhagwati, "Oligopoly Theory, Entry-Prevention, and Growth," Oxford Economic Papers, N.S., 22 (November 1970), 305.

[32] W.J. Baumol, J.C. Panzar, and R.D. Willig, Contestable Markets and the Theory of Industry Structure (New York: Harcourt Brace Jovanovich Inc., 1982), 27.

[33] Id., 222.

[34] "I believe that predatory pricing is rare and is not an important problem for competition." McGee, id., 294.