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Strategic Behavior and Antitrust Analysis

By WILLIAM S. COMANOR AND H. E. FRECH III*

The behavior of firms in oligopolistic markets has long posed a major conundrum to economists. That firms respond to the presence of mutual interdependence is undeniable, which indicates only that they behave strategically. In this paper, we examine some forms of strategic behavior which have received recent attention. In addition, we consider the implications for antitrust analysis of this conduct.

I. Strategic Behavior, Entry Deterrence, and Predatory Conduct

Firm behavior in oligopolistic markets is typically strategic. Indeed, what one generally expects from the recognition of mutual interdependence in oligopoly is that the expected reactions of rivals is accounted for in all market decisions. Only if one posits Nash behavior generally is this interdependence ignored and firms behave nonstrategically.

That strategic considerations are typically unavoidable is seen from the general first-order conditions for profit maximization for a duopolist:

$$\frac{d\pi_1}{dX_1} = \frac{\partial \pi_1}{\partial X_1} + \frac{\partial \pi_1}{\partial X_2}\frac{\partial X_2}{\partial X_1} = 0$$

where X_1 and X_2 are any action taken by the original firm and rival firm, respectively. The first term indicates the direct effect of the action and the second the indirect effect, which is the source of strategic decisions. Only when the second term is ignored are strategic considerations avoided.

The introduction of strategic considerations into firm decisions is thereby not caused by abandoning the assumption of profit-maximizing behavior. Where indirect effects are substantial, profit maximization requires that they be taken into account. But strategic behavior has another facet as well. Not only does it suggest that the firm accounts for the reactions of its rivals, but also it encompasses conduct specifically designed to influence a rival. These statements, however, differ only in terms of the primary purpose or intent of the action taken.

Actions which represent either predatory conduct or entry deterrence are strategic in nature, although not all strategic behavior takes these forms. The former is designed to lead existing rivals to certain choices, while the latter emphasizes the impact on prospective entrants.

Another distinction hinges on the investment nature of predatory conduct, or the pattern of effects over time, that is not necessarily present in entry deterrence. More specifically, predatory conduct are actions taken by a firm at some current cost to itself which are designed specifically to lower a rival's profits and induce him either to exit or compete less vigorously.

In this context, F. M. Scherer explicitly recognizes the "short-run profit sacrifices associated with predatory pricing" (1980, p. 339). More generally, including nonprice actions, Janusz Ordover and Robert Willig write that "predation should be defined as response to a rival that sacrifices part of the profit that could be earned under competitive circumstances, were the rival to remain viable, in order to induce exit and gain subsequent monopoly profit" (1981, p. 302).

As currently used, the concept of predation requires two distinct elements. First, predatory conduct is designed specifically to affect a rival by influencing the parameters on which his optimal decisions must rest. There must therefore be a prey. In the extreme, these parameters are affected in such a manner that his best action is to go out of business. What is essential is that the major gains from such conduct result from the indirect effects, or the second term of the expression above, although there may be direct effects as well.

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The second part of the story is that there must be some element of intertemporal sacrifice. What is required here is that the predator must sacrifice at least a portion of his profits in the short run to impose harm on his prey. The objective is to convince the rival to change its behavior.

The act of predation is designed specifically to insure that the rival will believe the firm's commitment to its policy. In this manner, all predation is inherently related to the making of threats and promises. The actual carrying out of any predatory action is designed solely to make the underlying threat believed. Indeed, the optimal predatory act is a threat or commitment that is believed but never carried out.

Since the primary function of predation is to communicate to and thereby influence a rival's behavior, it may not be rational in the short run. Actions are taken which reduce the firm's short-run profits in the hope that profits will be much higher once the rival's behavior is changed, perhaps by leaving the market. While this conduct may be profitable from a long-run viewpoint, it may include a commitment to narrowly irrational acts for certain periods of time, in that profits are lower than they could be. It is this association of predation with non-profit-maximizing conduct in the short run which has lead to the view that predatory conduct will not occur.[1] One cannot explain this behavior by imposing strict standards of profit maximization at each point in time.

While most discussions of predatory conduct have emphasized the effect of a firm's actions on the effective price which rivals can charge for their products, and indeed undercutting a rival's price is the classic story of predation, Steven Salop and David Scheffman in a recent important paper (1983), call attention to behavior designed specifically to raise rivals' costs. Some examples are mentioned which have the common theme that by taking certain actions which involve increased costs, a rival's costs are increased even more.

Such actions are necessarily strategic. Higher profits result directly from the higher costs imposed on rivals. But it is not predatory under the criteria suggested above. The critical element of a short-run sacrifice of profits for higher earnings later on is missing. Higher profits are immediately achieved. Salop and Scheffman write:

> Raising rivals' costs has obvious advantages over predatory pricing.... [It] can be profitable even if the rival does not exit from the market. Nor is it necessary to sacrifice profits in the short run for "speculative and indeterminate" profits in the long run... Because these strategies do not require a sacrifice of profits in the short run, but allow profits to be increased immediately, the would-be predator has every incentive to carry out its threats. [p. 267]

Since the proposed actions are narrowly rational, they are directly carried out, and there is no element of a threat conveyed. At the same time, such actions may make other forms of predatory conduct less costly to carry out.

Salop and Scheffman suggest that this strategy can be directed against prospective entrants as well as existing firms. So long as actions are taken which increase costs solely for the relative disadvantages under which new entrants are placed, they represent strategic entry deterrence.

While entry deterrent policies are inherently strategic, they may or may not be predatory. A favorable government product standard may be an example of nonpredatory deterrence. Both established firms and new entrants believe this standard will remain indefinitely, and therefore any relative cost effects will also remain. There is no issue of communicating anything to a rival, nor will policies be changed if the rival alters his actions.

On the other hand, the threat to increase output in the face of entry represents a predatory form of entry deterrence. Here, the established firm makes this message known to prospective rivals in the hope that it will never have to carry through with this threat.

[1] For example, see John McGee's (1958) path-breaking attack on the then-traditional view that the early Standard Oil Company used predatory pricing to achieve a monopoly position. While the empirical evidence may be correct, the theoretical argument that predation does not pay rests on the inappropriate assumption of narrow rationality.

While not rational in the short run, since it will sacrifice profits by doing so, carrying out the threat may lead to higher profits in the long run.

The classic problem with predatory entry deterrence, as with other forms of predatory conduct, is that of being believed by the prey. It is inherently difficult for the original firm to bind his own later actions with the threat. Once entry occurs, what is to keep the firm from reverting to narrowly rational decisions? Nonpredatory forms of entry deterrence avoid this problem.

The best known example of a predatory entry deterrent policy is the limit-entry price behavior proposed originally by Joe Bain (1956, p. 97). Here the established firm sets price and output such that entry is not profitable if this output level is maintained. And the firm's commitment to maintain quantity in the face of entry is the essential part of this behavior. This policy is predatory for it represents a departure from short-run profit-maximizing behavior. The latter requires that existing firms accommodate entry to some extent; and reduce output once entry has taken place. Only the long-run gains from maintaining the firm's existing market position make it advantageous to bear the short-run costs in terms of profits foregone.

In regard to limit-entry pricing as well as other forms of entry deterrence, it is the willingness to bear costs rather than their actual presence which is critical to the potential entrants' decisions. A more effective deterrent than even the pledge to hold output constant in the face of entry would be a commitment to expand output, which would drive the market price below the entrant's variable costs and ensure losses. But if this type of commitment can be made, why should the firm originally forego maximum profits by setting price below the level at which marginal revenues equal marginal costs?

Consider an established firm that sets a high price originally, but then reduces it to the limit-entry value once entry occurs. Whether or not this conduct represents a sacrifice in short-run profits depends on the nature of strategic interactions among existing rivals. If the optimal short-run price following entry exceeds the limit entry price, then the price cut to exclude entrants embodies a decline in immediate profits and is, therefore, predatory. If, however, the firm's optimal price following entry just equals the limit-entry value, then there is no decline in profits and no element of predation.

An interesting distinction between predatory entry deterrence and other forms of predatory conduct is that entry may be deterred merely by the commitment to take certain actions and bear certain costs, while forcing the exit of existing firms more often requires the actual adoption of the required policies. Mere threats may not lead an existing firm to depart because of his investment in industry-specific capital.

An important conclusion from this discussion is that both strategic entry deterrence and predatory conduct require an underlying asymmetry between the original firm and the rival for its success. This asymmetry, however, may simply be that one firm is in a position to make a commitment before its rival can do so. After that, the commitment is a datum, and the rival's actions are constrained by it.[2] As a practical matter, this may mean that the original firm in the market, or the largest, may have an important advantage.

II. Implications for Antitrust

A fundamental conclusion from this discussion is that the modern emphasis on strategic behavior represents a rejection of the easy application of conventional price theory which rests on narrowly rational, short-run objectives. Indeed, as John McGee's early paper pointed out, predatory conduct is an unlikely occurrence in such instances. Its presence can be explained only when strategic concerns are emphasized.

For this reason, the development of suitable antitrust rules to deal with such problems can also not rest on the implications of standard microeconomic analysis. Yet this was precisely the attempt made in the path-breaking paper by Phillip Areeda and Donald Turner (1975). Their object was to provide

[2]See Earl Thompson and Roger Faith (1981), especially p. 368.

an antitrust diagnosis of the problem of predatory behavior. While that paper served as the major stimulus for further work in this area, it stumbled over its attempt to deal with this problem in a nonstrategic context. Indeed, the major critiques of that work by Scherer (1976) and Oliver Williamson (1977) emphasized the importance of strategic considerations. In our judgment, no suitable policy direction can be designed without giving full recognition to the strategic elements which necessarily underlie this behavior.

Unfortunately, when allegedly predatory acts as well as other types of strategic behavior are placed in this broader context, it becomes particularly difficult to distinguish them from procompetitive conduct. A firm may merely be attempting to stimulate the demand for its products, either through setting low prices or some other means, so that the actions by themselves do not provide a distinguishing mark. What becomes important in any appraisal of this conduct, is both the purpose for which the actions are taken, or the intent of the particular decision makers, as well as the effect of the actions on both established and potential rivals. As a result, simple rules may not help to determine the presence of predation. A detailed investigation of the purpose and effects of specific acts under the Rule of Reason may therefore be necessary.

This type of antitrust recommendation, made earlier by Scherer (1976, p. 890), rests on a strategic approach to the economics of market behavior. We note its similarity to an older, more traditional form of antitrust analysis that rests more strongly on legal than economic analysis. Lawrence Sullivan, for example, argues that we should look to purpose or intent in any examination of the antitrust consequences of particular events. While emphasizing that lawyers, judges and juries deal competently with such concerns, he writes that: "purpose may be the last factor about which an economist would ask when analyzing market conduct" (1977, p. 195). While this statement may be correct when economic analysis is limited to standard price theory, it is hardly so when the broader concerns of strategic behavior are taken into account. Purpose and intent become important elements in determining the competitive consequences of various strategic actions. A major implication of the recent emphasis on strategic behavior may be a new acceptance of the role of these considerations in antitrust analysis.

In our 1983 paper, we examine the competitive implications of exclusive dealing arrangements. In some market situations, we find that the adoption of these arrangements may lead to limit entry prices which exceed competitive levels. While these actions may have anticompetitive effects, they cannot be regarded as predatory from the criteria suggested earlier. Indeed, they are more in the tradition of the Salop-Scheffman model which relates to firm efforts designed specifically to raise rivals' costs.

Note that so long as no element of predation is alleged, there is less of a role for an examination of intent. All that is relevant is the impact of a system of exclusive dealing arrangements. The issue of purpose or intent becomes critical only when the alleged anticompetitive conduct directly concerns how firms communicate threats and promises to their rivals and with the impact of this communication.

In the earlier discussion, we note that predatory conduct may be marked as narrowly irrational. But an antitrust prohibition of all such conduct would seem too broad. Even ignoring difficult problems of detection and enforcement, we should ask whether this type of prohibition serves the economic objectives of consumer welfare. Note that such a prohibition would encompass limit entry pricing strategies, since these are effectively predatory, and yet there is some doubt as to whether any alternate pricing regime would lie more in the consumer's interests.

A tempting approach to this conundrum is to stress the importance of monopoly rents. Since predation is designed to garner these rents, a prohibition of all predatory conduct would tend to lower them. If this is our objective, then the appropriate conclusion might well be to limit predatory conduct to the greatest extent possible.

Unfortunately, that conclusion rests on false foundations. Actions which minimize the present value of monopoly rents do not

necessarily minimize the welfare loss to consumers. While many factors lead to a difference between monopoly rents and welfare losses, a critical one is that monopoly rents are increased or limited by actions taken at the margin while welfare gains or losses are essentially intramarginal. Another factor is the possibility that predation may limit the costs incurred to achieve particular market positions so that welfare losses are again not represented by the monopoly rents achieved. For both reasons, there is no necessary correspondence between monopoly rents and the relevant normative criteria.

Our growing understanding of the strategic conduct of firms implies a recognition of the enormous diversity of business behavior. Not only may simple rules not be useful, but also there may be advantages from returning to the traditional legal concepts of purpose or intent. Particularly where predatory conduct is alleged, such concerns may be essential in making appropriate antitrust judgments. At the same time, much strategic behavior may be nonpredatory in character, where questions of purpose or intent are less important. The new economic studies of strategic behavior place these judicial concerns on a firmer intellectual footing. As a result, the new antitrust conclusions that follow may not be new at all.

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