Eastern Economics Journal, Vol. VII, No. 1, January 1981.

The Traditional and Strategy Formulation Models of Industry Analysis: Implications for Public Policy

JAMES A. DALTON and LOUIS ESPOSITO*

I. Introduction

Recent developments in the industrial organization literature suggest a growing dissatisfaction with the traditional structure-conduct-performance (S-C-P) framework of industry analysis. This dissatisfaction is centered not only on the theoretical or conceptual foundations of the paradigm but also in the empirical application of the framework. In addition, whatever analytical "richness" does exist in the traditional framework is generally lost when the framework is used for empirical analysis.

The purpose of this paper is twofold. First, it presents a framework for industry analysis which is broader than the traditional S-C-P framework. This broader "strategy formulation model" represents a synthesis of the theories of organization and strategy in the business literature, and recent developments and extensions of these concepts in the economics literature. Second, it analyzes briefly the differences between the strategy formulation model and the traditional model in terms of their public policy implications.

The paper is organized as follows. Section II presents a brief and simple statement of the traditional S-C-P model, focusing on its key characteristics. Section III discusses the strategy formulation model in detail because the model or approach is less well known and also because it is a rather broad and complex approach to industry analysis. Section IV presents a comparison of the key features of the traditional model and the strategy formulation model. In section V, the public policy implications of both models are briefly discussed. Section VI presents the summary and conclusions.

II. The Traditional Model

Traditional industrial organization analysis is based on the structure-conduct-performance (S-C-P) paridigm which is rooted in neoclassical microeconomic theory.[1] In this paradigm, market performance is determined by market conduct which, in turn, is determined by market structure. Since conduct is not directly or easily observed, primary emphasis is placed on the relationship between structure and performance. Of

*Putnam, Hayes and Bartlett, Inc., University of Massachusetts at Boston respectively.

The authors thank Robert Larner and Robert Wilson for considerable help in developing the section on strategy formulation and Glen A. Ramsay and Michael Magura for useful comments.

[1]Leibenstein (1979) asserts that the major shortcoming of neoclassical theory is its failure to incorporate the internal structure and operation of firms into the analysis of markets. Since the S-C-P paradigm is based on neoclassical theory, it is a major shortcoming of the S-C-P paradigm as well. For another recent criticism of the neoclassical theory of the firm and an exposition of managerial theories of the firm and their implications for the nature and extent of competition in the market place see Marris and Mueller (1980).

course, in establishing theoretical linkages between structure and performance, assumptions are made about the conduct or competitive behavior of firms in the market. These behavioral assumptions are determined in part by the structure of the market. The major elements of market structure are the number and size distribution of sellers and buyers, the degree of product differentiation, and the condition of entry. The ability of the firm to achieve its objectives and the policies it employs are determined primarily by the number and size distribution of rival firms and the condition of entry into the industry.

In the traditional model all firms are assumed to pursue the goal of profit maximization and follow similar pricing, marketing, and product strategies. The success of the firm in achieving its goals is determined primarily by its size (both relative and absolute) and the advantages associated with size, including the ability to exploit the available economies of large-scale production; the ability to purchase some inputs at lower prices than smaller rival firms; and lower distribution and selling costs per unit because of a larger sales volume.

The importance of size in the traditional model of industry analysis can be demonstrated by analyzing industry and firm profitability in three simple cases: the dominant firm case, the several large firms case, and the many small firms case.

The Dominant Firm Case

In an industry composed of one dominant firm (e.g., one firm controls 70 percent of industry sales) and many small firms, the dominant firm, because of its size advantages, would be expected to determine conduct in the market by setting industry price close or equal to the industry profit-maximizing price. The smaller firms, because of size disadvantages relative to the dominant firm and fear of retaliation, would be expected to adopt a similar price. The industry would earn supracompetitive profits, with the dominant firm earning the largest profits and the smaller firms earning lower profits. Thus, the performance of the industry as well as the performance of the individual firms is determined primarily by the size distribution of sellers.

The Several Large Firms Case

In an industry with several large sellers (e.g., the largest four firms control 90 percent of industry sales), the traditional model would predict a high likelihood of collusive behavior (either implicit or explicit) among the largest firms. The largest firms would be expected to establish price at a level above the competitive price. As a result, the industry would earn supracompetitive profits with the largest firms earning the greatest profits and the small fringe firms earning significantly smaller profits.

The Many Small Firms Case

In an industry with many small firms, the traditional model predicts independent rather than collusive behavior. The market price would approach the competitive price, the industry would not earn supracompetitive profits, and since market shares are fairly similar among all firms, the profits of all firms would be fairly similar.

Recognizing the existence of product differentiation and barriers to entry will, of course, modify or alter the conduct and performance discussed above. The existence of product differentiation allows different firms to have different prices, and the individual firm's profits are no longer determined solely by its size. The existence of low barriers to entry in the dominant firm case or the several large firms case would result in a market price below the industry profit-maximizing price and, thus, profit levels closer to the competitive level. In a static short-run framework, product differentiation and barriers to entry play a secondary role in influencing conduct and performance.[2] They primarily alter or modify the effect of seller concentration and market share.[3]

The heavy emphasis on the size distribution of sellers as the primary element of market structure and, therefore, as the primary determinant of market performance is demonstrated most convincingly by the empirical literature on industry and firm profitability. The number of studies investigating the relationship between concentration and industry profitability is substantial. For a recent summary of these studies see Weiss (1974). Studies investigating the determinants of firm profitability also focus primarily on size variables such as market share, assets, and concentration. See, for example, Hall and Weiss (1967) and Shepherd (1972). The emphasis on size, both relative and absolute, is also apparent in the empirical literature on innovation. For a good review of this literature see Kamien and Schwartz (1975).

III. The Strategy Formulation Model

Dimensions of the Model

The strategy formulation approach to the analysis of industries or markets can be summarized as follows: the firm's goals and its environment determine its organization (i.e., the hierarchical structure and resource base). The organization of the firm, and the environment in which it operates determines its strategy formulation, and its competitive behavior (i.e., its strategy implementation), which generates firm and market performance. This broader approach involves five major dimensions in addition to corporate goals: *firm organization, environment, strategy formulation, competitive behavior,* and *performance.* The key elements of each of these model dimensions are discussed below.[4]

The firm's organization includes the resources it acquires or hires and the way it combines these resources (its structure). Tangible resources of the firm include individuals with various levels of education and experience, plant and equipment of various types and vintage, and materials used in the production process. Intangible resources include managerial philosophy and preference for risk, style and quality leadership, quality of equipment and materials, R&D skills and experience, good will, service contacts outside the company, and financial resources available to the firm.

The structure of the firm has three major dimensions: hierarchy, production set-up, and financial structure. Hierarchy represents the way in which a firm is structured for decision-making and the manner in which the various components of the firm mesh together and interact. The major hierarchical forms include organization by function, by product

[2]In the long run, the importance of these factors in influencing conduct and performance may be equal to that of the size distribution of sellers.

[3]Two important aspects of industry performance other than profitability are the degree of technical efficiency and the rate of innovation. Yet the *a priori* relationships are unclear. Strong arguments can be advanced supporting the hypothesis that high concentration encourages innovation; equally strong arguments can be made for the hypothesis that high concentration retards innovation. With respect to technical efficiency, it can be argued that high concentration is required for a high degree of technical efficiency to exist in an industry. On the other hand, it can be argued that the existence of high concentration in an industry can allow inefficient firms to exist and survive in an industry.

[4]Linkages among these dimensions have been amply identified in the literature concerned with corporate strategy, industrial organization, and psychology. For brevity, some of the more important linkages are only noted rather than fully explored in the ensuing discussion. A sampling of the relevant literature is contained in the references. For a review of the business literature dealing with corporate strategy and organizational structure by an economist, see Caves (1980). Caves makes a persuasive argument that industrial organization economists have much to learn with respect to the importance of corporate strategy and organizational structure in determining the market performance of firms and industries.

line, by geographical area, and by matrix (the combination of one or more of functions, product and area).[5] Production set-up consists of the method of production (e.g., degree of automation), the degree of vertical integration, and the flexibility of the production process. Flexibility of the production process ranges from the unit batch operation (for a one-of-a-kind product such as the ENIAC computer) to the continuous flow process (for mass production items such as pocket calculators). Financial structure consists of the type and amount of capitalization of the firm. The proportion of debt relative to equity, cash flow, and working capital affects the ability of the firm to develop new products, to install more efficient machinery and to compete in the marketplace.

A firm's environment encompasses the elements outside the firm which provide it with opportunities and constrain its behavior. The environment of the firm encompasses market structure, the salient features of rival firms, the existence and function of trade associations, the characteristics of customer markets, the opportunities for innovation, the state of the economy, and legal constraints.

A firm formulates its overall strategy in a market or industry by matching its capabilities—a function of its resource base—with the opportunities it perceives in its environment (Rosenbloom, 1978) in the context of the goals and structure of the firm. Strategy formulation, therefore embraces forces both within and outside the firm and leads the firm to combine its resources into a particular structure for achieving its objectives.

It is at this stage that firms determine how they will compete and what distinctive competence they will exploit. The firm's managers may formulate their strategies consciously or unconsciously; they may do it once and for all or they may continuously or periodically reassess their strategies and finally, they may be more or less efficient and effective in the implementation of these strategies.[6] The formulation stage is critical: competitive behaviors are determined by these strategies.

There are three broad groups of strategies—product, marketing and price. Product strategies deal with the physical properties of the commodity and encompass product innovation, breadth of product line, product development, and product quality. Marketing strategies reflect activities associated with features which are, in turn, associated with a transaction or which attach to, but do not inhere in, the product. These strategies include: service before, at and after the sale; product differentiation; background of sales personnel; brand proliferation; and channels of distribution. Price strategies deal directly with the relative height of the selling price or costs. This set of strategies includes relative level of price, relative level of cost, and process innovation.

Competitive behavior refers to interactions among rivals in the marketplace with regard to their customers. The firm's interaction with rivals is conditioned by its strategy formulation, and generates firm performance. A firm's competitive behavior involves the implementation of product, marketing, and price strategies.

Performance represents the final outcome of competitive behavior realized by a firm as a consequence of the implementation of its strategies and interaction with rivals. Examples or manifestations of firm performance are profitability and change in market share. Market performance is the product of the interactions of all firms in the marketplace; it encompasses the efficient allocation of society's resources and the rate of progress associated with innovation (e.g., new products, lower cost and higher quality).

[5]Hierarchical forms also relate to the use of task forces and committees, individual integrators, and product managers.

[6]The concept of strategy formulation, or corporate planning as it is sometimes called is widely used by leading firms. See Andrews (1971), Ackoff (1970), Rothschild (1976) and Merrifield (1977).

Strategy Formulation

Strategy formulation is at the core of the model because it directs competitive behavior. The factors affecting decisions converge at strategy formulation. Given a firm's goals and resource base, and given the constraints of the environment, it formulates its strategies and organizes its resources to achieve its goals in the most effective and efficient manner possible. Competitive behavior results from the strategies devised by the decisionmakers across the rivals in the industry; however, the concept of strategy has not been employed by many scholars in analyses of competition. Analysts of business decisionmaking have studied strategy in the context of activities of a given firm. Students of game theory have related strategy to specific forms of behavior. Neither approach has addressed strategy formulation in the broader context of constraints on it. In recent years several authors have integrated strategy with the study of competition. The result has been described by Michael Hunt (1972) as a blend of the economist's perception that size is the distinguishing factor among firms with the business analyst's perception that every firm is unique. This compromise produced the concept of strategic groups which allows recognition of groups encompassing a number which can exceed one and is less than the total number of firms in the industry.[7]

Our discussion of strategy formulation begins with consideration of the interrelationships among strategies. We then discuss the formation of strategy groups, and their impact on the competitive process in a market, and new entry when the existence of multiple strategy groups in an industry is recognized.

Clusters of Strategies

Strategies can differ depending on differences in industry environments and across firms in the same market because of differences in managerial hierarchies, resources bases, and corporate goals. Given these differences, a strategy which is optimal for one firm may not be viewed as optimal by rival firms in the same industry. Moreover, given environment and organization, strategies related to product, marketing and price are not independent of each other. Firms will employ a set of compatible strategies and certain strategies may not be compatible with other strategies.[8]

To illustrate assume there are three groups of firms in an industry offering a consumer durable good. Group A contains large-volume producers of a broad line of the product; Group B produces only for the high-quality end of the industry; and Group C offers private label products. It seems reasonable to expect that: 1) firms in Group A are more likely to engage in product differentiation by advertising in the national media and to distribute through many outlets, 2) Group B firms will rely less heavily on national advertising, concentrate on sales through carefully selected distributors, and be at least as likely as firms in Group A to seek technological leadership in product innovation and charge a relatively high price; and 3) Group C firms will emphasize relatively low prices, imitate the products of groups A and B, engage in process innovation, and distribute through outlets such as Sears, Montgomery Ward and discount houses.

While firms can meet the constraints in different ways, all strategies cannot neces-

[7]This concept has been developed, in addition to Hunt, by Newman (1973, 1976) and Porter (1976).

[8]This proposition is in accord with the literature related to the study of corporate strategy (e.g., Learned *et al.*, 1969).

sarily be employed successfully. A firm with neither the resource base nor the organizational structure suitable for an intensive research program would not survive in an industry characterized by a rapid rate of technological change. Similarly, efforts to maintain a price premium would be doomed in an industry characterized by a homogeneous product and knowledge buyers. Thus, successful strategies are developed by the firm only by working within the constraints peculiar to the industry.

Formation of Strategy Groups

Firms in an industry can be grouped according to the similarity of sets of strategies. There is a question concerning how the sets and, hence, groups are formed and why there are differences in sets of strategies when firm performance differs across groups.[9] Within a given environment, goals and firm organization can differ across firms in an industry. Corporate goals and organizational elements, such as managerial preferences toward risk and the skills in the asset base, affect strategy formulation. Thus, strategies can differ across firms in an industry.[10]

The same factors which contribute to the different strategies can also inhibit switching from one group to another. For example, in an industry which has experienced changes in boundaries and in environment as a result of innovation, firms which employed successful strategies may have been surpassed by firms with different strategies. For example, former leaders may be unwilling to switch to another set of strategies because they did not want to change their resource base or attitude toward risk.

Regardless of willingness firms may be unable to switch to a set of strategies associated with greater success. Caves and Porter (1977) have argued that firms may be barred from switching to another strategy group. The mobility barriers are associated with passive and active elements. On the passive side, smaller firms may not have the large amounts of capital required for investment in R&D. An active barrier would result from efforts by certain firms. An example of an active barrier has been suggested by Caves and Porter (1977, p. 246):

> The larger the incumbent's initial market share, the greater is the relative advantage it gains against . . . smaller firms by pursuing a strategy such as annual model changes that shifts the mixture of costs toward fixed outlays.

Given substantial scale economies, the higher fixed costs associated with the model changes could cause substantial cost disadvantages for the smaller firms.

Competition and Strategy Groups

By definition, firms in a strategic group follow similar strategies. Consequently, firms in a strategic group will behave in a manner which promotes an atmosphere conducive to effective agreement. Responses to disturbances in the environment are likely to be similar. The decisionmakers are likely to recognize their mutual interdependence. Finally, conjectural variation will not give rise to unstable rivalry because decisionmakers are better able to project accurately responses of competitors. A similar commentary, however, cannot be applied to conjectures and behavior when firms are in different groups.

[9]Newman (1976), Hunt (1972) and Porter (1976) found differences in profitability across strategy groups. Others have found differences in profitability across firms in an industry. Relative size rather than strategy group was the focal point. See, for example, Shepherd (1972).

[10]Strategies may differ also because firms competing in foreign markets of the same industry may have adapted their strategies to face situations in foreign geographical markets which are not faced by their domestic rivals. The difference in strategies associated with international competition has been suggested by Porter (1980, Chapter 7).

For example, assume that there are two strategy groups in an industry. Group A contains firms which imitate technology and differentiate their product through intensive advertising. Group B's firms employ product innovation and a price premium as strategies. If firms in A raise advertising expenditures and begin to increase their market shares, firms in B could counter by reducing their prices if they are unable to introduce a new product. Alternatively, if a firm in B introduces a new product and is capturing an additional market share, firms in A could retaliate only by reducing their price and/or increasing their advertising until they can develop imitations.

The existence of different strategy groups means that promotional aims, preferences regarding prices and the introduction of new products, marketing methods, technology, scale of operation, and emphasis on technological change, among other things, can vary across groups. Newman (1976) and Porter (1980, Chapter 7) have argued that industry behavior is affected by the complexity of strategic groups. For example, the existence of dissimilar strategies hinders the ability to collude. Given that membership in different strategy groups means differences in goals and in responses to disturbances, competitive behavior will be more intense if there is a complete set of strategic groups. The likelihood of reaching a consensus is reduced the greater disparity in preferred outcomes. Differences in reactions to disturbances which are common to all rivals increases the difficulty of restoring a tacit understanding. Indeed, the ability to sustain an agreement is weakened because the lower interaction with common customers, channels of distribution and suppliers makes it more difficult to detect cheating (Porter, 1980, Chapter 7).

Porter (1980, Chapter 7) has identified three factors which affect the impact of the existence of different strategic groups on competition: the number and size distribution of groups; distance between groups; and market interdependence across the groups. The number and size distribution of strategy groups is expected to be directly related to rivalry. However, the impact of a large number of groups will be limited if the groups are small. A group which is dominant will not be affected much by a small group of smaller firms. Strategic distance—the extent to which key strategies (e.g., advertising, relative price, R&D and cost structure) differ across the groups—is expected to have a positive association with rivalry. Market interdependence is expected to be directly related to rivalry. The effect of one group's activities on another group becomes stronger when both groups aim at the same set of customers.

Entry

The analysis of competition to this point has been in the context of current sellers. Entry by sellers new to the industry or to a strategy group may also affect the climate for competition. Oligopolistic consensus can be disturbed and competitive forces can be enhanced by entry. Activities of a new entrant can increase uncertainty of rivals, and established firms may misread the cause of changes in market share. The response to the entry depends on the size and strategies of the entrant as well as on the nature of the entry—that is, new entry into the industry versus movement between strategy groups in the same industry.

Entry into a strategy group can occur when an established firm alters its mix of strategies. This type of entry can have an effect similar to entry by a firm new to the industry. Furthermore, the long-run impact of *de novo* entry may be large even if the entry has little or no impact on competitive forces in the short term. Potential entrants may enter certain strategy groups because there are high barriers to entry into strategy groups in which

firms earn higher profit rates. Once obtaining a toehold, the entrant may attempt to enter another strategy group.

IV. A Comparison of the Traditional and Strategy Formulation Models

Having discussed both the traditional and strategy formulation models, we present a brief comparison of the key features or characteristics of each:

1. In the traditional model, all firms are assumed to have similar goals or objectives, i.e., the maximization of long-run profits. In the strategy formulation model, firms are allowed to have different goals or objectives.

2. In the traditional model, the organization or structure of the firm is either ignored or assumed to be fairly similar among all firms. In the strategy formulation model, differences in firm organization are an important factor in determining the firm's competitive behavior.

3. In the traditional model, the primary characteristic which distinguishes one firm from another is size. In the strategy formulation model, size is only one distinguishing characteristic; firms also differ according to their goals or objectives and their organization.

4. In the traditional model, the advantages one firm possesses relative to another firm are primarily size-related. In the strategy formulation model, size is only one factor determining the advantages of the individual firm; factors of equal, and in some cases greater, importance in determining the advantages of individual firms are the product, marketing and price strategies pursued by the firm. In the traditional model little if any emphasis is placed on differences in strategies among firms.

5. The analytical core of the traditional model is analysis of market structure, while the analytical core of the strategy formulation model is the process of strategy formulation.

6. In the traditional model, the primary determinant of competitive behavior and performance is size, both relative and absolute. In the strategy formulation model, competitive behavior and performance are determined by the strategies employed by the firms in the market. Size is only one factor determining firm strategies.

V. Public Policy Implications of the Traditional and Strategy Formulation Models

The traditional model has simple and clear implications for antitrust policy: market performance is determined by market structure. The most important element of market structure is the number and size distribution of firms. Desirable performance is primarily the result of an "optimal" number and size of firms, while undesirable performance is seen as resulting from a "nonoptimal" number and size of firms. What follows from the traditional model are remedies aimed at altering the size distribution of firms within the industry. What follows from the strategy formulation model is that size is only one factor determining firm and market performance, and thus simply altering the size distribution of firms may not necessarily result in more desirable performance.

One way to demonstrate the different public policy implications of the two models is to apply them to a particular case situation. Let us take a simple case of an industry in which market performance with respect to profitability and the behavior of the firm are considered undesirable. Assume further that the largest firm dominates the industry and controls 70 percent of industry output. The traditional model suggests the alteration of the size distribution of firms in the industry, the most direct method being the dissolution of the dominant firm. Since the traditional model assumes that all advantages are size-related, dissolving the largest firm into several firms of a size equal to the other firms in the industry should result in more desirable performance. In other words, a more equal size distribution of firms (i.e., a lower level of concentration) will result in a more desirable market performance.

Using the strategy formulation model, it is not at all clear that competition will be enhanced and performance improved. We further assume: 1) the dominant firm employs strategies which are significantly different from other firms in the industry; 2) the dominant firm's market position is primarily the result of the successful application of these strategies; and 3) there are significant barriers to mobility in moving from one strategy group to another in the industry. Given these assumptions, a simple dissolution of the dominant firm (e.g., into five firms equal in size to the other firms in the industry) will not alter competiton in the market. The strategy group formerly populated by one dominant firm will now be populated by the five new firms. The other firms in the industry will not be able to compete effectively with the "dominant" strategy group since there exist significant mobility barriers. Since firms with similar strategies (i.e., members of the same strategy group) are more likely to recognize mutual interdependence, the likelihood of implicit or explicit collusion among the five new firms would be quite high. Thus the end result of dissolution may simply be to replace a single dominant firm with a dominant oligopolistic core of firms.

The recognition of strategy groups and mobility barriers in the industry suggests that the appropriate remedy is not simply dissolution of the dominant firm but also reduction or elimination of the mobility barriers which prohibit firms from adopting the more successful and profitable strategies. In fact, it can be argued that dissolution may not be necessary if size-related advantages are no longer paramount, given the other remedies. Under these conditions, the elimination of mobility barriers may serve to enhance competition and improve market performance in the long run.

The two models also have different public policy considerations with respect to mergers. Cases brought under Section 7 of the Clayton Act are concerned with acquisitions which substantially lessen competition. If the prospective acquirer is not yet in the industry, attention focuses on the likelihood that the acquisition will result in the elimination of a potential entrant into the relevant market. Assuming that the merger will eliminate one of a few likely potential entrants, under the traditional model efforts would be aimed at preventing merger because the acquiring firm would no longer constrain the behavior of established firms. But the strategy formulation model does not necessarily lead to the same conclusion.

The implications of the strategy formulation model can be seen in three scenarios:

1. Given the organization of the prospective acquiring firm, one could speculate about the strategy group it is likely to enter. If it is likely to enter the dominant group as a separate entity, then competition would be affected more than if it were likely to enter a less-than-dominant strategy group.

2. If the merger is with a smaller firm in the dominant group, competitive forces may be enhanced considerably if the acquiring firm has a different organization and has employed different strategies. The acquiring firm could have a different reaction to the environment, thereby generating instability among firms which had been cooperating.

3. If the merger occurs with a firm in a less-than-dominant group, competiton can be increased because of an increase either in the number of groups or in the size of the group, and because of a strengthening of strategic

distance. Moreover, over the long run, competition can be increased if the entry is preliminary to a switch into the dominant group.

In summary, the traditional model suggests a public policy aimed at dissolution of the largest firms and a prohibition of mergers which may alter the size distribution of firms in a "nonoptimal" way. The strategy formulation model suggests a public policy which is broadened to also include policies aimed at encouraging types of firm organizations and strategies that are likely to enhance competition.

VI. Summary and Conclusions

This paper has presented a brief description of the traditional S-C-P model of industry analysis and a more detailed description of "the strategy formulation model" of industry analysis. The major difference between the two models is recognition in the strategy formulation model that size may not be the primary characteristic which distinguishes firms in a market. Firms differ not only according to size but also according to goals, organization, and strategies employed. The important implication of this broader approach to industry analysis is that size may not be the primary determinant of competitive behavior and performance. Behavior and performance are also determined by the strategies firms employ and the interaction of strategic groups in the market. Thus, the difference between the traditional model and the strategy formulation model is not merely one of emphasis but one of substance. The traditional model simply ignores the existence of different strategies and different strategy groups in markets.

We have attempted to demonstrate that the public policy implications of each model can be quite different. The traditional model suggests an antitrust policy aimed primarily at altering the size distribution of sellers. The strategy formulation model suggests what may be termed a "competitive behavior" public policy, i.e., a policy aimed at affecting competitive behavior. In this broader view, altering the structure of a market is only one way of altering competitive behavior. Public policy can also be directed at altering the firm's goals, organization, and strategies, i.e., the other factors which also determine competitive behavior in the market. This broader view of public policy therefore would not only include prohibitions against certain actions (e.g., price fixing), but also include incentives (e.g., tax incentives or subsidies) to engage in certain activities (e.g., product or process innovation) or to use specific organizational forms.

References

Abernathy, William J. 1979. *The Productivity Dilemma.* Baltimore: Johns Hopkins University Press.

Ackoff, Russell L. 1970. *A Concept of Corporate Planning.* New York: Wiley-Interscience.

Andrews, Kenneth R. 1971. *The Concept of Corporate Strategy.* Homewood, Ill.: Dow Jones-Irwin, Inc.

Caves, Richard E. 1980. "Industrial Organization, Corporate Strategy and Structure." *Journal of Economic Literature,* March, pp. 64–92.

_____, and Porter, Michael E. 1977. "From Entry Barriers to Mobility Barriers: Conjectural Decisions and Contrived Deterrence to New Competiton." *Quarterly Journal of Economics,* May, pp. 241–262.

Hall, Marshall and Weiss, Leonard W. 1967. "Firm Size and Profitability." *Review of Economics and Statistics,* August, pp. 319–331.

Hunt, Michael S. 1972. "Competiton in the Major Appliance Industry, 1960–1970." Unpublished Ph.D. dissertation, Harvard University.

Kamien, Martin I. and Schwartz, Nancy L. 1975. "Market Structure and Innovation: A Survey." *Journal of Economic Literature,* March, pp. 1–37.

Learned, E. P., Christensen, C. R., Andrews, K. R. and Grith, W. 1969. *Business Policy.* Homewood, Ill.: Irwin.

Leibenstein, Harvey. 1979. "A Branch of Economics is Missing: Micro-Micro Theory," *Journal of Economic Literature,* June, pp. 477–502.

Marris, Robin and Mueller, Dennis C. 1980. "The Corporation, Competition, and the Invisible Hand." *Journal of Economic Literature,* March, pp. 32–63.

Merrifield, D. Bruce. 1977. *Strategic Analysis, Selection, and Management of R&D Projects.* New York: American Management Association.

Newman, Howard H. 1973. "Strategic Groups and the Structure-Performance Relationship: A Study with Respect to the Chemical Process Industries." Unpublished Ph.D. dissertation, Harvard University.

_____. 1976. "Strategic Groups and the Structure-Performance Relationships." *Review of Economics and Statistics,* August, pp. 417–427.

Porter, Michael E. 1976. *Interbrand Choice, Strategy and Bilaterial Market Power.* Cambridge, Mass.: Harvard University Press.

_____. 1980. *Competitive Strategy.* New York: Free Press.

Rosenbloom, Richard S. 1978. "Technological Innovation in Firms and Industries: An Assessment of the State of the Art." In *Technological Innovation: A Critical Review of Current Knowledge,* ed. P. Kelly and M. Kransberg. San Francisco: San Francisco Press, Inc.

Rothschild, William E. 1976. *A Guide to Strategic Thinking.* New York: American Management Association.

Shepherd, William G. 1972. "The Elements of Market Structure." *Review of Economics and Statistics,* February, pp. 25–37.

Starbuck, William H. and Hedberg, B. L. T. 1977. "Saving an Organization from a Stagnating Environment." In *Strategy & Structure = Performance,* ed. Hans B. Thorelli. Bloomington, Ind.: Indiana University Press.

Weiss, Leonard W. 1974. "The Concentration—Profits Relationship and Antitrust." In *Industrial Concentration: The New Learning,* ed. Harvey I. Goldschmid, *et al.* Boston: Little Brown.

Williamson, O. E. 1975. *Markets and Hierarchies.* New York: Free Press.