

Determinants
of
MARKET PERFORMANCE

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FOREWORD

Market performance has been the subject of considerable debate among economists, businessmen, public policy makers and various students of business behavior. The field of industrial organization has been the "mother lode" of many of the contributions to this subject, both theoretical and empirical. More recently, organizational theorists, managerial theorists, and a group I shall call technocrats have suggested alternative models of market performance. Many of the differences among scholars focus on the perceived motivation, behavior, and influence of three interacting groups; consumers, the enterprise sector, and the public sector.

This paper attempts to identify and examine some of the relevant issues concerning market performance. It is an outgrowth of research conducted by the author during 1969-70 when he was Research Associate at Marketing Science Institute, Cambridge, Massachusetts. The research was financed by a grant from the Marketing Economics Division, Economic Research Service, U.S. Department of Agriculture. The paper constitutes one part of a forthcoming U.S.D.A. publication on Market Performance.

Determinants of Market Performance

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Adherence to a competitive economic system in the U.S. has seldom been seriously challenged. Beginning with the Sherman Anti-trust Act in 1890, the U.S. has given "... almost universal support for free enterprise or a competitive system as an ideal". However, a "body of clear policies to achieve that goal has not been formulated".^{1/}

At least in part, the lack of a "body of clear policies" is due to the substantial ignorance that still exists concerning a competitive system. If we were to ask, "What are the essential ingredients of a competitive system?", a considerable array of answers would be forthcoming. The presence of competitive markets would certainly be mentioned, but a similar divergence might be found in interpretations of what constitutes a competitive market.

I will not be so presumptuous as to think we can resolve these issues in this paper. I will not even attempt to present the rationale for different points of view, since this has been adequately dealt with elsewhere.^{2/} I will, however, briefly comment on some of the more important conceptual issues concerning competitive markets and market performance.

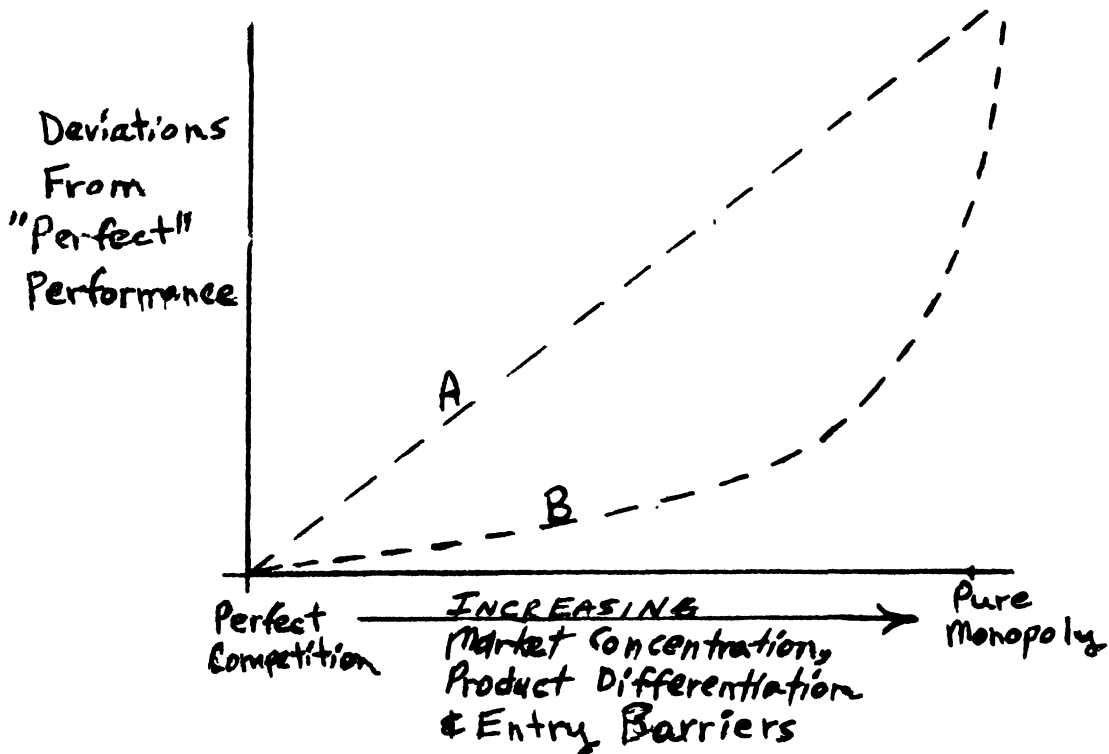
For many years, economic price theorists have attempted to develop models that describe the conduct and performance of groups of firms in different types

^{1/} Massel, Mark S., Competition and Monopoly, Doubleday & Co., Garden City, New York, 1964, p. 2.

^{2/} F. M. Scherer presents a particularly lucid discussion. See his Industrial Market Structure and Economic Performance, Rand McNally & Co., Chicago, 1970, p. 8-38.

of markets. While the performance resulting from perfect competition or monopoly, the two extreme types of markets, has been rigorously defined by economic models, the conduct and performance of market types in between these extremes--where nearly all real world markets fall--cannot be rigorously described by existing theoretical models. The theory of oligopolistic markets, in particular, continues to represent a major problem in the theory of markets.

Given the situation of precise and rigorous market models at the extremes, and imprecise and indefinite models in between, interpreters of economic theory have tended to assume that the competitive performance of markets becomes progressively "less perfect" as the characteristics of the market (its structure) departs farther and farther from perfect competition. That is, market performance is often expected to be related to the structure of markets similar to lines A or B in the following figure. In either case, a monotonically increasing function is hypothesized.



It should be clear, however, that while this functional relationship is frequently assumed or inferred, it has weak theoretical underpinning. There is no a priori basis for postulating that a reduction in market imperfections will necessarily result in improved (more perfect) performance. (E.g., an increase in the number of firms in a market from 20 to 30). Thus, while economic theory defines the structure of markets as being a key factor influencing their conduct and performance, it provides no basis for positing the form of the relationship. Is it linear, curvilinear, monotonic increasing, discontinuous, or what? The nature of this relationship is the subject of considerable speculation. For example, does rivalry among several firms stimulate performance that is socially comparable to that compelled by atomistic markets? Just how much competition is necessary to eliminate excess profits?

Empirical analysis on the degree and form of this relationship has constituted one of the major foci of industrial organization economists. I shall comment on some of their findings shortly.

Another major issue in the theory of competition revolves around the suitability of the perfectly competitive model as a policy norm or ideal. Recognizing its unrealistic nature, perfect competition remains attractive as a model of social and economic equity. No monopoly power is present to generate monopoly profits, distort the allocation of resources, and limit freedom. However, is our society willing to sacrifice (or at least risk) some equity for other types of gains? If some degree of monopoly in a market is necessary to achieve scale economies, finance research and innovations, and provide a variety of products, is this worth some loss in the assurance of perfect equity and compelled efficiency?

This type of trade off question is difficult to answer without a more definitive idea of the consequences of different levels of market imperfections and monopoly power. Scherer comments:

"Consumers are willing to sacrifice some allocative nicety for variety, and so the social ideal must be not pure competition but some alloy of pure and monopolistic competition. The question of market organization then becomes a quantitative one: How much purity to sacrifice in order to maximize social welfare? And on this question, economic theory has no operational answers." 3/

If the purely competitive model is not acceptable as a norm, are the performance criteria it suggests adequate? While the criteria it suggests are relevant to certain aspects of social welfare, there are also other important performance dimensions that this model does not suggest (product and process progressiveness, for example). Some of these may be more important in a post-industrial society than pricing and technical efficiency--the performance factors emphasized in the competitive models. Unfortunately, none of the concepts of competition provide a useful approach to ranking the importance of different performance dimensions.

The lack of greater realism in the market models of economic theory has also resulted in their relevance and accuracy being challenged. A frequent focus of "adversary attack" has been the assumption that the dominant goal of firms is to maximize profits. 4/ This has been questioned on the grounds that:

3/ Scherer, F. M., Industrial Market Structure, op. cit., p. 22.

4/ The publications on this subject are too numerous to cite. For summaries of some of the main issues, see F. M. Scherer. Industrial Market Structure, op. cit., p. 27-36; also Fritz Machlup, "Theories of the Firm: Marginalist, Behavioral, Managerial", in Readings in the Economics of Industrial Organization, ed. D. Needham, Holt, Rinehart & Winston, Inc., 1970.

- Firm managers normally confront numerous goals, some of which are not consistent with profit maximization. Their personal desires for job security, prestige and power, and doing good works often result in some sub-optimal behavior, particularly with the ownership and management of firms increasingly separated. In addition, if managers confront several divergent firm goals (growth in sales, growth in profit, stability of profits, etc.) in a changing and uncertain environment, they may strive for satisficing results--not maximizing.
- Given the conditions of uncertainty under which many decisions are made, and the variance in the time horizons and propensity to risk among managers, is profit maximizing behavior either defineable or likely? Uncertainty about the future may result in sub-optimal behavior, or it may cause firms with monopoly power to protect their position by keeping costs low and prices at competitive levels.
- Modern firms are often large complex organizations in which communication is less than perfect, goals at different levels or in different departments conflict, and the information received by management is often diffused and inaccurate. Under these conditions, profit maximizing behavior is highly unlikely.

These concerns emerge from the managerial theory of the firm, and are particularly relevant to market conditions where a considerable monopoly power is present. In a competitive environment (not necessarily pure competition), although firm managers may have difficulty in determining and executing profit maximizing behavior, the most astutely operated (or luckiest) firms are likely to approach this optimum. These firms, in turn, set survival standards for their competitors which allows for little management discretion in pursuing other goals.

"It seems reasonable to believe that the natural selection process is a stern master in a competitive environment. That it will work equally well under monopoly does not follow. If natural selection is to function in the economic sphere, its activating mechanism must be the competitive challenge of firms better adapted to their environment and opportunities. But when firms with market power are shielded by entry barriers, product differentiation, government favoritism,

and the like, threats to their survival may be sufficiently blunted that they can survive for decades without ever maximizing profits or minimizing costs. On this point there is little dispute. The crucial question is, how sheltered from the forces of natural selection are firms with market power? How far can they depart from profit-maximizing rules and still remain viable?" 5/

These questions largely depend upon the amount of discretion that firms with market power perceive themselves to have. On this point, there is little to suggest an answer.

Baumol contends that the primary objective of many firm managers is to achieve maximum sales and sales growth consistent with a given level of profit (often close to the average for the industry). 6/ This position is reinforced by studies that indicate executive compensation (salaries plus bonuses) is more closely related to sales volume than to profits. 7/

As Baumol demonstrates, firms governed by this motivation will approach the frequently defined social goal of price = marginal costs. It might also be noted that in markets that are reasonably price sensitive, if only one entrepreneur pursues a sales maximizing objective, competing firms will be placed under pressure to adopt similar pricing practices. The seriousness of monopoly output restrictions would be reduced or eliminated in such situations.

5/ Scherer, Industrial Market Structure ..., op. cit., p. 35.

6/ Baumol, W. S., Business Behavior, Value and Growth, Rev. ed., Harcourt, Brace & World, 1967. Also, see Edith Penrose, The Theory of Growth of the Firm, Blackwell, 1959; and J. Williamson, "Profit, Growth and Sales Maximization", *Economica*, Feb., 1966.

7/ See studies cited in Scherer, Industrial Market Structure ..., op. cit., p. 33.

There appears to be considerable support for Baumol's contention; many firms do seek to maximize their sales or rate of growth. However, if such a proposition is accepted for public policy purposes, it has the uncomfortable characteristic of being subject to management disgression. In highly concentrated markets, tacit collusion might well result in sales maximization being replaced by profit maximization, or in an "acceptable" profit level being established considerably above a "normal" level. Competitive performance would thus depend on managers adhering to such an objective, rather than on elements of the market structure or business environment.

As the foundation for industrial organization analysis, economic theory bears one other "realism" limitation that warrants comment. That is the inadequacy of economic theory in dealing with multi-product, multi-market, and even multi-national firms in a long run time horizon. Received theory relates to single product firm behavior in the short run; its application to multi-product firms is thus limited unless multi-product firms manage the pricing and output of each product as if it was unrelated to all other firm products. For large diversified firms, this is highly unlikely due to the difficulty of allocating overhead and joint costs. Also, its application is limited for firms whose behavior is essentially long run in orientation since theory assumes the long run is nothing more than a series of consecutive short runs. In essence, there is no long run theory of firm behavior. Yet the larger the firm, the more likely that its behavior will be strongly influenced by long run growth considerations.

Because of these limitations, the market determinism hypothesized by industrial organization theory is frequently challenged, particularly when considering large diversified firms. For such firms, are the external factors on which industrial organization focuses determinants of -- or even

important influences on--firm behavior? In a recent critique of industrial organization, Grether suggests:

"The most important issue for the field of industrial organization is how to bring the large diversified corporation within the framework of analysis. The crux of the matter is whether the market structure framework can be employed at all; in other words, is it relevant? If such large corporations are free of the market, as some allege, it would seem futile to try to analyze their behavior and performance results in a market structure framework. The focus of research then should be on internal organization, policies and strategies, and their performance results. Orientation should then be from performance results back into internal organization and decision making. But if there is a significant amount of market determinism and constraint, even if only for a period of time under given structural characteristics, it would seem reasonable to use the market structure framework of analysis. 8/

Grether's survey of 21 other active colleagues in the industrial organization field indicated a strong need for "theoretical-empirical work in the field of oligopoly and especially on problems of diversification and conglomerateness." Grether, himself, encourages study of the internal dynamics of large organizations, particularly the synergetic relations among the internal product lines, subsidiaries, etc. of large diversified corporations, and the continuing interactions between internal firm organization policies and practices, and market structures in order to provide greater insights into the ways market structure influences, or is influenced by, the behavior of large diversified companies.

Workable Competition

Given the above reservations and questions about the adequacy and appropriateness of economic theory as a model for policy, it is not surprising that alternative norms have been proposed. Considerable effort has been

8/ E. T. Grether, "Industrial Organization: Retrospect and Prospect," AER, May 1970, p. 35.

focused on developing concepts of "workable" or "effective" competition to fill the void in economic theory concerning imperfectly competitive markets, and to provide more relevant norms for evaluating real markets.

Devotees of workable competition have generally placed emphasis on the importance of personal rivalry in imperfect markets as a motivating force that is comparable or superior to the compelling discipline of the impersonal market in atomistically structured markets. For example, J. M. Clark viewed competition as "the effort of business units, acting independently, to make a profitable volume of sales in the face of offers of other sellers of identical or similar products".^{9/} And, while competition normally involves rivalry, Clark suggests that this may or may not be direct and conscious. Under conditions approaching those of pure competition, such as in the case of midwest corn farmers, rivalry is indirect and is experienced primarily through the "market price." For oligopolistic type markets, however, such as breakfast cereal manufacturing, rivalry is direct and conscious.

Clark and others have also placed considerable importance on progressiveness as a critical performance dimension, and one in which the norms of workable competition are more appropriate than the ideal of pure competition. Clark observed, "The theoretical models are uniformly presented as operating toward an equilibrium . . . the nature of this equilibrium is the main thing studied . . . In the field of theory, the most challenging

^{9/} Clark, J. M., "What is Competition" in The Environment of Marketing Behavior, 2nd ed., ed. by Robert Holloway & Robert Hancock, Wiley, 1969, p. 195.

opening seems to be for an approach that would shift the emphasis from competition as a mechanism of equilibrium to competition as a dynamic process. . . . equilibrium models in general afford no positive interpretation of the forces of progress." 10/

In a similar vein, Wroe Alderson described dynamic competition as the search for a differential advantage over competitors; the desire to be different. Alderson suggested that this natural driving force means that heterogeneity in markets is the normal and prevailing condition rather than homogeneity; and that conditions of disequilibrium tend to exist except where the forces of competitive rivalry have "temporarily stalled." 11/

As these comments infer, devotees of workable competition tend to place less emphasis on the structure of markets as the dominant influence on performance, contending instead that desirable performance may be realized with many different market structures. Thus, not too surprising, conditions defined as necessary for competition to be "effective" frequently include structure, conduct and performance elements.

Stephen Sosnick has effectively summarized the literature on workable competition. 12/ In a more recent article, he proposed twenty-five undesirable market characteristics--none of which could be present if a market is

10/ Clark, J. M. Competition as a Dynamic Process, The Brookings Institute Washington, D. C., 1961, p. 43, 2, 4.

11/ Alderson, Wroe, Market Behavior and Executive Action, Richard D. Irwin, Inc., Homewood, Ill., 1957.

12/ Sosnick, Stephen, "A Critique of Concepts of Workable Competition", Quarterly Journal of Economics, August, 1958.

to be considered "effectively" competitive. 13/ The first ten he defines as undesirable, per se; the last fifteen as undesirable only because of their effects.

Undesirable, per se:

- (1) Unsatisfactory products -- needless reduction of durability, suppression of new products, incomplete standardization, needlessly hazardous or uneven quality;
- (2) Underuse or overuse -- unprofitably high or low pricing, failure to increase and/or phase out capacity when economically indicated;
- (3) Inefficient exchange -- no opportunity for buyers to choose less costly alternatives, unnecessarily large transaction costs, price ceilings or floors that create shortages or surpluses, failure to transmit retail price differentials to primary markets (or vice versa);
- (4) Inefficient production -- inefficient size, techniques, locations, and organization
- (5) Bad externalities
- (6) Spoliation
- (7) Exploitation of employees by management or of employers by workers or labor unions;
- (8) Unfair tactics -- fraud, malicious interference;
- (9) Wasteful advertising -- false, misleading, or valueless
- (10) Irrationality -- self-defeating choices by buyers or sellers

Undesirable because of their effects:

- (1) Undue profits or losses -- persistent positive profits for sellers of inferior goods, high costs, and over-capacity -- persistent losses for sellers of superior quality, efficient costs, and inadequate capacity;
- (2) Inadequate research;

13/ Sosnick, Stephen, "Toward a Concrete Concept of Effective Competition", Amer. Journ. of Agr. Economics, November, 1968.

- (3) Predation -- malevolent price-cutting -- not merely unloading excess inventory or bona fide attempts to meet competition;
- (4) Pre-emption -- of patents, raw materials, outlets, or contracts with the intent and effect of hindering existing or potential competitors;
- (5) Tying arrangements;
- (6) Resale price maintenance;
- (7) Refusals to deal;
- (8) Undesirable discrimination -- similarities or differences in terms of sale to different patrons, not justified by cost differences, changing conditions, or meeting competition, and which imperil small patrons and disadvantage some areas;
- (9) Misallocation of risk -- inadequate warranties, cost-plus procurement, unnecessary consignment;
- (10) Undesirable collaboration -- refusals to cooperate that reduce efficiency, and cooperative agreements that reduce initiative;
- (11) Undesirable mergers -- vertical or horizontal combination that do not reduce costs, and which create opportunities to injure competitors through foreclosure or squeezing, or which reduce the number of competitors to fewer than three;
- (12) Undesirable entry -- entry by a noninnovator when undue losses exist, or when capacity or the number of sellers is larger than efficiency permits.
- (13) Misinformation;
- (14) Inefficient trading rules;
- (15) Misregulation -- government action or inaction that fosters inefficiency.

While Sosnick's list is much more specific than the conditions set forth by many writers on workable competition, it still suffers from considerable ambiguity in interpretation. Terms such as "unsatisfactory", "inefficient", "unfair", and "undue" must be interpreted by someone before the conditions

can be operationalized. Also, how is a market to be evaluated if some but not all conditions are satisfied? These are problems frequently encountered in trying to apply concepts of workable competition.

The approach proposed by Jesse Markham over 20 years ago provides an interesting contrast in that it is unspecific and focuses attention on improvements that are possible through public policy measures.

"An industry may be judged to be workably competitive when, after the structural characteristics of its market and the dynamic forces that shaped them have been thoroughly examined, there is no clearly indicated change that can be effected through public policy measures that would result in greater social gains than social losses." ^{14/}

The greater realism of the norms established by workable competition are attractive, particularly when trying to evaluate markets involving differentiated oligopolies. One of the more disturbing aspects of workable competition efforts (aside from the operational difficulties) is the lack of definitive cause - effect relationships. From a public policy standpoint, there are strong arguments for, and efficiencies in, dealing with causal factors so as to perpetuate effective competition, rather than to correct ineffective competition. The present state of workable competition concepts are not particularly facilitative of such a policy approach.

The foregoing describes the nature and some of the deficiencies of the theoretical underpinning of industrial organization. This underpinning does provide a modest guidance system both for the policy maker and for the student of market performance. However, rather substantial wilderness areas are also present in our theoretical map. It is time now to consider the results of empirical work that confirm, challenge, or modify these theoretical constructs.

^{14/} Markham, Jesse, "An Alternative Approach to the Concept of Workable Competition", Amer. Econ. Review, June, 1950.

Empirical Studies of the Organization and Performance of Industries

Industrial organization economists have examined many industries in the U.S., utilizing the models and tools of economic price theory. Many of these efforts have examined the hypothesis of market determinism; that is that the structure of an industry determines (or strongly influences) the conduct of the sellers comprising it, and that the conduct of sellers determines (or strongly influences) their collective and individual performance.

The results of empirical analysis have led to the definition of some variables and relationships not specified in price theory, as industrial organization economists have struggled to develop models that adequately explain the actual performance of industries. For example, the primary independent variables suggested by price theory are the degree of seller and buyer concentration, the level of product differentiation, and the conditions of entry. Various industrial organization economists have suggested additional variables that are important aspects of the environment or structure of an industry. These include:

- The price elasticity of demand
- The growth rate of market demand
- The ratio of fixed to total costs in the short run for the typical firm
- The degree of vertical integration
- The amount of diversification and conglomerateness
- The level of international trade barriers

The influence of the latter group of variables has received much less investigation than has seller concentration, product differentiation and entry barriers. Because of this, we shall largely limit our comments to

the empirical studies of the most popular structural variables. It is important to note, however, that these are not the only exogenous forces that have been recognized as having a bearing on market performance.

Problems of Empirical Analysis -- Industrial organization economists encounter several rather serious empirical problems that should be noted. Several of the structure, conduct or performance variables cannot be measured directly. Thus, in many cases, a measurable dimension is used as a surrogate for the characteristic of primary concern (e.g. advertising expenses as an indicator of product differentiation; R & D expenditures as an indicator of progressiveness, etc.). This complicates analysis further, since yet another causal relationship must be examined. For example, does advertising cause or result from differentiated products?

Stern makes the following rather pessimistic comment:

"The problems of obtaining objective measurements of the elements of market structure are legion and should not be understated. In fact, some of the problems are so critical that there is real doubt as to whether any theory grounded on these elements can ever be verified." 15/

Among the measurement problems noted by Stern are:

1. Difficulties in defining industries or markets in a manner that is consistent with theoretical models or competitive reality. 16/
2. Questionable use of four firm concentration ratios which ignore differences in the dispersion of market shares.

15/ Stern, Louis, "Market Structure as a Measure of Market Performance", Marketing Science Institute Working Paper, Cambridge, Mass., February, 1970.

16/ Smith and Dahl comment on this point, indicating that industry structure is often related to market conduct or performance. Since industries, as defined, are frequently not synonymous with one side of a market, such comparisons "may be completely meaningless." See "Market Structure Research-- How and For What?", Journal of Farm Econ., May 1965, p. 465-67.

3. Lack of acceptable measures of product differentiation or barriers to entry, in spite of some innovative work by Bain and others.
4. Difficulties in developing acceptable measures of several dimensions of performance (progressiveness, income distribution, and technical efficiency, for example).

Stern also identifies analytical procedures as a frequent deficiency in empirical studies. Too often, single performance characteristics have been related to single market structure variables (with linearity and continuity often assumed), when more fruitful results might be gained by examining the relationship between combinations of structure and performance dimensions, and in examining the interrelationships between performance variables, such as profits and progressiveness. Kaysen and Turner argue for a multi-variate approach, and for caution in the use of individual performance criteria:

"...a standard of profit performance should depend not only on the result of efficiency, which by itself requires that the long-run profit in excess of the supply price of capital and entrepreneurship be zero, but also on the result of progressiveness, which conceivably might call for higher profits in any industry deemed capable of innovating. In practice, though, our knowledge does not permit us to discuss what the profit standard should in fact be, if progressiveness as well as efficiency are taken into consideration. ...we lack the basis in either theory or experience for making any generalized statements about profit standards which reflect the relation of profits to all the desirable results we seek to achieve." 17/

Empirical Results -- Considering the empirical problems in market structure analysis, the results of past studies warrant careful examination. Stern found that past efforts to verify the influence of market structure variables on market performance "have been frequently inconclusive, conflicting, or extremely tenuous." 18/ In summarizing his analysis of the empirical efforts to relate

17/ Kaysen, Carl, and Turner, Donald F., Anti-trust Policy, An Economic and Legal Analysis (Cambridge, Mass: Harvard University Press, 1965), pp. 11-12.

18/ Stern, Louis, "Market Structure. . .," op. cit., p. 53. A much fuller treatment of empirical results is in this working paper which is available from Marketing Science Institute.

the three market structure variables to the six performance criteria identified by Bain (1. allocative efficiency, 2. technical efficiency, 3. selling costs, 4. product performance and technological progress, 5. income distribution, 6. full employment), he states:

"Given the present body of knowledge on the subject, it appears that the strongest links, from an a priori perspective, involve the structural elements of seller concentration and barriers to entry and the performance criteria of allocative and technical efficiency. Other links are either nebulous, contradictory, or non-existent. Kaysen and Turner's insight, in this respect, provides a fitting concluding statement with regard to the relationship between market structure analysis and the performance goals of (1) efficiency in the use of resources; (2) progress; (3) stability in output and employment; and (4) an equitable distribution of income:

'Not all of this quartet of virtues are connected to the functioning of markets in an equally intimate way. Efficiency is most closely dependent on the operation of markets. While the existence and character of market competition is one of the forces influencing the pace of innovation, it is only one; and other, including the supply and training of technical personnel, the expenditures by government on industrial research, the attitude of consumers toward new products and of managements and workers toward new methods of production, are in the aggregate of greater importance. To the extent that an equitable distribution of income implies the passing along of the fruits of efficiency and progress to consumers, it is related to the functioning of markets. To the important extent the ideas of equity involve judgments that some income receivers should receive more and some less than they could get from the market--no matter how competitive--equity must be sought by policies. . . other than those which affect the operation of markets. Finally, fluctuations in output and employment are primarily responses to fluctuations in aggregate demand rather than to events in particular markets, and again, policies designed to promote stability find their primary means outside the sphere of market organization.' 19/

19/ Kaysen & Turner, op. cit., pp. 11-12.

Although Kaysen and Turner are advocates of the structural approach to analyzing our performance in allocating resources, they point out that income distribution, employment stability, and progressiveness in productivity ought to be evaluated by approaches other than market structure analysis." 20/

These summary statements would likely meet with considerable general agreement although some would contend that they are overly pessimistic. A few additional comments on selected relationships seems in order.

The relationship between market structure and allocative efficiency (as reflected by profit rates) is strongly supported by empirical studies--but not as a monotonically increasing relationship. Several studies have found little relationship between seller concentration and/or entry barriers, and profit rates until a certain threshold of monopoly power is achieved.

For example, Bain, the FTC, and Mann suggest that industries where the largest eight firms control 70 percent or more of the industry output are likely to have significantly higher profit rates than industries with lower levels of concentration. 21/ Mueller indicates that "profits approximate the competitive norm (i.e., they about equal the cost of capital plus a risk premium) when four-firm control is less than 40 percent of the market." 22/

Limited evidence suggests a similar threshold effect for entry barriers. Mann found no significant difference in the profit rates of highly concentrated industries with "substantial" entry barriers compared to profits in highly

20/ Stern, Louis, "Market Structure. . .," Op. Cit., pp. 54-55.

21/ Hearing Before Subcommittee of the Select Committee on Small Business, United States Senate, Seminar on: "Are Planning and Regulation Replacing Competition in the New Industrial State?", U.S. Govt. Printing Office, June 29, 1967.

22/ Mueller, Willard F., A Primer on Monopoly and Competition, Random House, New York, 1970, p. 106.

concentrated industries with "moderate to low" barriers. Highly concentrated industries with "very high" entry barriers, however, experienced average profit rates from 1950 to 1960 that were nearly 50% higher than the other two groups with lower barriers. 23/

The relationship and direction of causality between product differentiation and allocation efficiency is more difficult to unravel. Comanor and Wilson conducted a multi variate analysis of 41 consumer goods industry groups. 24/ They found that industries with high advertising outlays realized profits approximately 50% higher than those with modest advertising expenditures. This study and others suggest that abnormal profits likely result from high advertising expenditures that create or are accompanied by high entry barriers. These results again suggest a threshold type of relationship between market structure elements and allocative efficiency.

The interpretation of product differentiation influences is not that clear-cut, however. In the first place, advertising expenditures carry strong limitations as a proxy for product differentiation. As Caves indicates:

"Sellers without product differentiation have little to gain from advertising,... By contrast, where product differentiation exists, each rival must advertise to keep some buyers in a frame of mind to prefer his product to others. In industries where producers can easily maintain this differentiation by the design of the product itself--its styling or special features--less of the pressure falls on advertising and sales promotion. But in industries like soap and cigarettes, where only minor physical differences separate one producer's brand from his rivals', advertising plays the heavy role in creating these differences in the eye of the public.

23/ Mann, H. Michael, "Seller Concentration, Barriers to Entry, and Rates of Return in Thirty Industries, 1950-1960", Review of Economics and Statistics, August, 1966.

24/ Comanor, William S. and Wilson, Thomas A., "Advertising, Market Structure and Performance", Review of Economics and Statistics, Nov. 1967.

Thus we reach a slightly paradoxical conclusion: Product differentiation as a trait of market structure is responsible for heavy advertising expenditures. Among industries with high seller concentration, however, relatively slight physical differentiation of the product may lead to more advertising than if the physical product is abundantly differentiated." 25/

Furthermore, high advertising expenditures are frequently associated with new product introduction, particularly for consumer goods. Markham and Slater present evidence from food manufacturing industries (the ready-to-eat cereal industry in particular) that high advertising expenditures, increasing market shares, and higher profits are often associated with high rates of successful new product introduction. 26/ Polli and Cook lend support to this position in their October, 1969, article, "Validity of the Product Life Cycle" in the Journal of Business.

Thus, in those industries with high levels of new product introduction, advertising expenditures may reflect desirable product progressiveness, but abnormally high profit levels. Whether, in fact, such profit levels are necessary for the development and introduction of more new products is difficult to ascertain.

In those industries where high advertising expenditures do not reflect new product introduction efforts, but rather intense efforts to differentiate physically similar products, a less persuasive case can be made for their contribution to improved performance.

The strength of the linkage between market structure elements and technical efficiency is open to considerable debate. Bain concludes from his

25/ Caves, Richard, American Industry: Structure, Conduct and Performance, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1964, p. 107.

26/ Markham, Jesse W. & Slater, Charles C., "Standards of Competition and the Food Industries", Proceedings of The 1966 World Congress, American Marketing Association, Chicago, Illinois, 1966.

analysis of this relationship that the main impact of market structure is probably on dimensions of market performance other than technical efficiency. 27/ Mueller supports this position when he states:

"Recent studies on this subject are almost unanimous in concluding that productive efficiency dictates high concentration in only a small and declining share of manufacturing industries." 28/

Empirical studies of technical efficiency have concentrated on production economies, virtually ignoring important economies that may exist in marketing, finance, and planning. Mueller suggests that the requirements of product differentiation (especially the costs of large scale promotion) and distribution explain the increasing concentration that is evident in consumer goods manufacturing, whereas producer goods manufacturing (where production economies are more of a factor) have generally declined in concentration. While there have been no studies, to the author's knowledge, of scale economies in marketing, information on advertising rates and the cost of new product development and introduction 29/ suggests that scale economies are likely present in many consumer goods industries. 30/

Thus, it appears that if all technical efficiencies were considered (marketing as well as production), a positive relationship with seller concentration and entry barriers would be expected among consumer goods

27/ Bain, Joe, Industrial Organization, Second Edition, John Wiley & Sons, Inc., New York, 1968, p. 437.

28/ Testimony at Hearing Before Subcommittee of Select Committee..., Op. Cit., p. 18.

29/ See for example, Buzzell, Robert & Nourse, Robert, Product Innovation in Food Processing: 1954-1964, Division of Research, Grad. School of Bus. Admin., Harvard Univ., Boston, Mass., 1967.

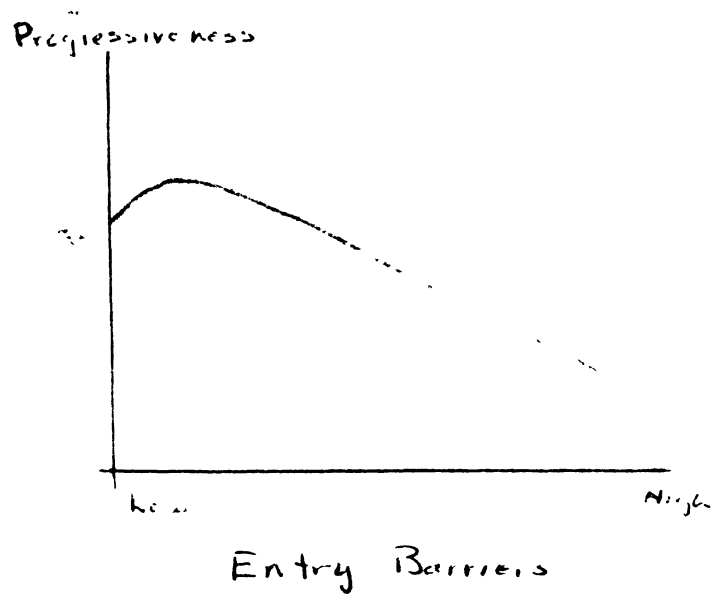
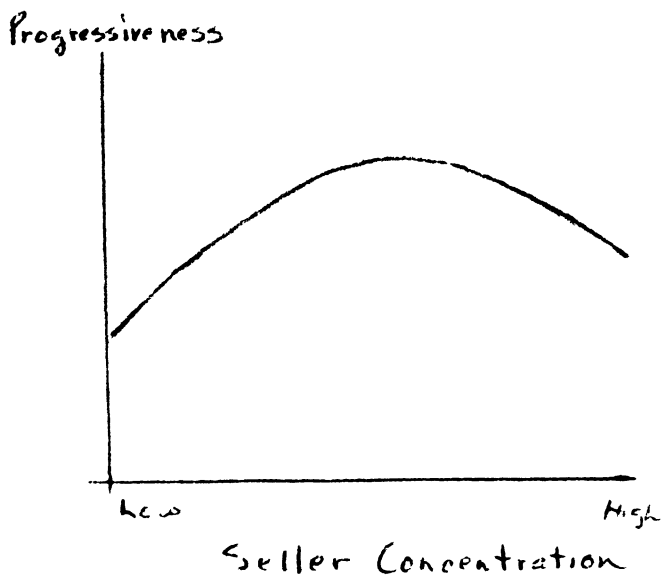
30/ For discussion of this point, see Louis Stern, "Perspective on Public Policy: Comments on the 'Great Debate' ", Journal of Marketing, January, 1969.

industries. In producer goods industries, however, the available evidence suggests that high concentration is generally not necessary to achieve technical efficiency. The extraordinary size of many U.S. markets makes it possible for many firms to be large in absolute size, (and hence realize scale economies) but relatively small in their share of industry sales.

The logic of the relationship between technical efficiency and market structure elements is persuasive. However, given the magnitude of many U.S. markets, such a relationship may occur largely in consumer goods industries, in markets that are relatively small in total output but have definite scale economies, and in larger markets with low levels of concentration and entry barriers.

For two other performance dimensions, progressiveness and the stability of prices and employment, some rather tentative relationships with market structure elements should be noted (in addition to those receiving comment earlier). Although the measures of progressiveness leave much to be desired, the available evidence suggests that whatever economies of scale exist in research and innovative activity, this is achieved in most industries at low or moderate levels of concentration. This relationship is difficult to unravel since "high concentration and rich technological opportunity tend to coincide." ^{31/} However, Scherer, Caves and others conclude that neither very low nor very high concentration is conducive to progressiveness; that a mixture of monopoly and competition appears to be called for with entry barriers at modest levels. Thus, progressiveness and structural elements appear to bear a relationship similar to the following:

^{31/} Scherer, F. M., "Market Structure and the Employment of Scientists and Engineers", in Readings in the Economics of Industrial Organization, ed. Needham, op. cit., p. 244.



These hypothesized relationships are admittedly based upon limited evidence. As Kaysen and Turner suggest, there may be other factors that have a stronger impact on progressiveness than the structure of the industry. At the same time, given the available empirical results, it would also be misleading to suggest that no relationship is discernable.

The linkage between market structure and employment and/or prices is even more difficult to ascertain with meager and often inconsistent empirical results. Of the various hypotheses advanced, the relationship between market structure and inflation is the most persuasive.

Mueller contends that sellers with considerable discretionary pricing power may cause a "cost-push" inflation by granting unwarranted wage increases (which are passed on in higher prices), or by increasing product prices when demand is declining. This response, which is contrary to that in a "competitive" market, makes it difficult to control inflation, and to achieve full employment without inflation via traditional monetary and fiscal policies which act to expand or contract demand forces. ^{32/} Recent history in the U.S. lends credence to this position. Efforts to control inflation by manipulating aggregate demand have met with limited success, particularly since

^{32/} Mueller, W. F., A Primer on Monopoly. . ., op. cit., p. 107-126.

President Nixon eliminated wage-price guidelines and the use of government persuasion upon taking office in 1969. For example, whereas the prices of metal and metal products rose an average of 1.4 percent per year during the 1960-68 period, they increased 12 percent between January, 1969 and January, 1971 -- a period when aggregate demand was contracting due to fiscal and monetary policies. This has been attributed to the "post-Johnson price orgy" enjoyed by the steel industry when guideline restraints were removed. 33/

The evidence of the relationship between market structure elements and inflation and/or employment is both thin and somewhat mixed. Recent experiences, suggesting the detrimental effect of firms with strong discretionary pricing power, need further empirical examination. The information available at this time, however, seems to support at least a modest relationship.

Implications of Empirical Results

A review of the many empirical studies and the conclusions of various scholars can prove both confusing and amusing. Empirical results do not present a clear consistent picture of the determinants of market performance. This inconsistency can be interpreted in different ways, depending largely on the biases and beliefs of the interpreter. On the one hand, market structuralist may attribute the lack of greater consistency to empirical deficiencies; i.e., to inappropriate proxy variables, inaccurate measurements, inadequate analytical procedures, etc. Studies that confirm the structure-conduct-performance relationships expected, may be grasped as indications of the true relationships that would be consistently found if empirical problems could be solved.

33/ Mueller, W. F., "Controls or Competition", Mimeo of Statement before the Senate Subcommittee on Anti-trust and Monopoly, U.S. Senate, Jan. 18, 1972.

On the other hand, those who have strong doubts about the dominant role of market structure elements may interpret such inconsistency as evidence that other factors are often more important influencers of performance. That is, the various study results are seen as reasonably accurate and therefore demonstrate that the economist's models of competition are inadequate.

For the student of industrial organization, the task of sorting through "facts" and "biased interpretations" to arrive at an independent, "objective" conclusion is extremely difficult. While we have tried to present an objective assessment of the various empirical studies, we suspect that our biases are also evident at various points. With this as a cautionary note, we will proceed.

The foregoing capsule of empirical results indicates that market structure elements have a significant influence on certain performance dimensions, although the nature of this relationship is still not as clearly defined as one would hope for. In most cases, a continuous linear relationship is not apparent. Rather, certain threshold levels of structural elements appear to be needed before their influence on performance is apparent. Because of this and because other factors (including other aspects of the environment and structure of markets) may often influence performance as much or more than traditional market structure elements, measures of market structure are likely to be rather inaccurate proxy measures of performance.

Given this limitation, however, the empirical results of market structure-performance relationships still provide definite and valuable guidance to policymakers. Taken in total, the results suggest that the social benefits gained from allowing industries to become highly concentrated and/or to erect substantial entry barriers are likely to be meager or negative in most cases.

Technical efficiency and product or process progressiveness warrant high concentration in few industries, and allocative efficiency tends to decline with high levels of concentration. The effect of the pricing behavior of concentrated industries on inflation and employment--while still somewhat clouded--appears if anything to be negative. Thus, the benefits to be gained from allowing moderately concentrated industries to become more concentrated are rather dubious. (Marketing scale economies in some consumer goods industries may be an exception, although the nature and magnitude of the "benefits" in such cases have yet to be determined.)

Moderate levels of concentration, on the other hand, appear to cause little injury to performance, and to prove beneficial to the progressiveness and technical efficiency of some markets. Thus, in some instances, an argument can be made for allowing an industry with low concentration, entry barriers, etc., to become more "imperfect". These conclusions suggest that the model of pure competition should be abandoned as a viable norm for performance; from the standpoint of realism and the evidence regarding social benefits, models of effective competition (subjective and primitive though they may be) appear more appropriate. In view of the above conclusions, those models of effective competition that specify the avoidance of high levels of seller concentration and entry barriers are likely to be more consistent with social welfare than models which allow high concentration and/or entry barriers as long as performance is acceptable.

The Need for Concepts of Growth and System Dynamics

Many writers have emphasized the need for concepts of competition that recognize growth and dynamic change as important market forces.

In extremely dynamic times with rapid changes occurring in the environment of business firms, this seems to be a particular relevant issue. For this reason, let us consider some of the concepts that have been proposed and empirical results that may have bearing.

One of the earliest proponents of the strong influence of innovative change was Joseph Schumpeter. In his now familiar quote, he commented:

"...it is not (price, quality, or promotional) competition which counts but the competition from the new commodity, the new technology, the new source of supply, the new type of organization--competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives. This kind of competition is...so much more important that it becomes a matter of comparative indifference whether competition in the ordinary sense functions more or less promptly; the powerful lever that in the long run expands output and brings down prices is in any case made of other stuff." 34/

Malcolm McNair sounds a similar theme in proposing "the wheel of retailing." 35/ In both cases, the emphasis is on periodic reorganization and reorientation that substantially alters the characteristics of a market system.

Neil Chamberlain suggests that firms (and market systems we would add) must achieve a balance between two ever present forces--a tendency toward systematic, efficient, smooth running organizations (a tendency toward equilibrium), and a tendency toward reorganization and reorientation in response to changes in their environment (a tendency toward disequilibrium). 36/

34/ Schumpeter, Joseph, Capitalism, Socialism, and Democracy, 3rd Edition, Harper & Row, 1950, pp. 84-85.

35/ See McNair, Applebaum and Salmon, Cases in Food Distribution, Richard D. Irwin, Inc., 1964, pp. 18-19.

36/ Chamberlain, Neil, Enterprise and Environment, McGraw-Hill, New York, 1968, pp. 9-10.

The comments of Schumpeter, McNair and others would suggest that with rapid technological and environmental changes, the balance of these two forces should favor the latter--even though some sacrifices may be made in short run efficiency. With rapid changes in the environment, firms and market systems that have developed "early warning radars" in the form of sound intelligence systems, and are quick to respond when adjustments are needed, are likely to benefit society to a greater extent and remain viable themselves, than those that are less alert but may be somewhat more efficient in the short run. 37/

More needs to be understood about the influence of new products, new technology, and the rate of growth on firm behavior in the long run. Schumpeter placed great faith in these forces as essential characteristics of capitalism. He describes his notion of "creative destruction" as follows:

"The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers' goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates....(this) process of industrial mutation....incessantly revolutionizes the economic structure from within,

37/ The works of Lawrence and Lorsch suggest that firms in rapidly changing environments may vary significantly in their organizational structures from those in more mature and static environments. These authors found that firms in rapidly changing environments that were responsive to changes in that environment had rather flat organizational structures with considerable freedom and authority at lower levels, and with considerable dependence placed on those in direct contact with different markets or clientele for information concerning changes in the environment. That is, those on the firing line were used more heavily as sources of intelligence and strategy information. This also suggests that different types of information may be relied upon than in firms in slower changing environments. Whether there is any relationship between the organizational structure of firms or the flow of information, and the structure of the industry is not known at this point. See Paul Lawrence and Jay Lorsch, Developing Organizations: Diagnosis and Action, Addison-Wesley Publishing Co., Reading, Mass., 1969; also Organization and Environment by same authors, Div. of Research, Harvard Business School, 1967.

incessantly creating a new one. This process of creative destruction is the essential fact about capitalism." 38/

While Schumpeter's comments may not apply to a particular industry at a particular point in time, they do speak of a fundamental and pervasive force that seems to characterize the U. S. economy when viewed from a detached perspective. Of particular importance are the implications of the process of creative destruction for established positions of monopoly power. Economists have given insufficient attention to the temporal dimensions of monopoly power. In earlier periods with less rapid change, positions of monopoly power tended to prevail for considerable periods. With an accelerated rate of "creative destruction", one might expect existing power positions to be less securely entrenched and more transient in nature. But, is this the case?

From their extensive analysis of the mobility and size structure of leading industrial companies, Collins and Preston concluded:

"...There is considerable reason to believe that firms now at the top of the industrial pyramid are more likely to remain than their predecessors. The evidence of mobility does accord with a general assumption that large-scale corporations enjoy an increasing amount of entrenchment of position by virtue of their size." 39/

Professor Galbraith's thesis in *The New Industrial State* also suggests that power is more securely entrenched--not less--since modern technology requires large firms and concentrated markets. Robert Averitt presents a similar argument to Galbraith's with certain important differences. In his book, The Dual Economy, Averitt proposes the over-simplified yet useful

38/ Schumpeter, Joseph, *Capitalism, Socialism,*, op. cit., p. 83.

39/ Collins, Norman R. & Preston, Lee E., "The Size Structure of the Largest Industrial Firms", *American Economic Review*, Dec., 1961, p. 1001.

idea of two quite different economies in the U.S. His description of these two economies is as follows:

"Contemporary American capitalism, then, is a composite of two distinct business systems. The new economy is composed of firms large in size and influence. Its organizations are corporate and bureaucratic; its production processes are vertically integrated through ownership and control of critical raw material suppliers and product distributors; its activities are diversified into many industries, regions, and nations. Financial support is readily available from both internal and external sources. Firms in the large economy serve national and international markets, using technologically progressive systems of production and distribution. The affairs of such enterprises are conducted with a view to survival in perpetuity as they meet economic crises with successive strategies of firm expansion. We shall call this network of firms the "center."

The other economy is populated by relatively small firms. These enterprises are the ones usually dominated by a single individual or family. The firm's sales are realized in restricted markets. Profits and retained earnings are commonly below those in the center; long-term borrowing is difficult. Economic crises often result in bankruptcy or severe financial retrenchment. Techniques of production and marketing are rarely as up to date as those in the center. These firms are often, though not always, technological followers, sometimes trailing at some distance behind the industry leaders. Let us designate the firms in the small economy by the term "periphery."

...Firms in the center economy act upon the assumption that they have eternal life, if not assured prosperity. Like periphery firms, they pay close attention to costs, but their future rests primarily on expanding sales. Here the first rule of survival in any but the worst times is not cut expenses, but expand sales.

...By following various combinations of four basic growth strategies giant firms soon realized a rate of growth exceeding that of the market. These strategies were expansion of volume in traditional markets, geographical dispersion, vertical integration, and product diversification. ^{40/}

...Center firms must diversify to escape the inevitable decay that Marshall predicted. But diversify in what direction? What can be used as a reasonable guide to product acquisition? The answer is found in the force that plays the dominant role in creating economic turbulence. As center firms have discovered, the root of secular disturbance in economic patterns is technological change." ^{41/}

^{40/} Alfred D. Chandler, Jr., Strategy and Structure: Chapters in the History of the Industrial Enterprise, MIT Press, 1962.

^{41/} Averitt, Robert T., The Dual Economy, W. W. Norton & Company, Inc., New York, 1968, pp. 6-9, 15, 16.

In several respects, the pictures presented by Galbraith and Averitt of large diversified firms are similar. However, on certain fundamental aspects, they differ significantly. Galbraith contends that modern technological imperatives make concentrated markets with vast industrial enterprises inevitable; that large size is necessary for planning inventions, innovations and production processes, and concentrated markets are necessary to allow management of consumer wants, thereby guaranteeing markets.

Averitt, however, posits the relationship of large firms and technology in quite a different light, with much less technological determinism. His reasoning suggests that large firms are likely to be affiliated with industries where new technology is important because new technology represents growth and survival. Averitt thus positions his center firms as sensitive chasers of new technology in a system where market forces still operate to threaten positions of complacency. He says:

...An enterprise that ties itself to the rhythm of a particular industry must ultimately ride to profit deterioration on the industry's life cycle. Should any firm, large or small, be so foolish as to associate itself solely with a particular mix of products, it undoubtedly must watch its profit margins dwindle near the end of the industry's rapid expansion phase when visible and sustained success attracts new capacity.

...Industrial economies do not hold a fixed form for long. A changing technology provides a slow but continuous metamorphosis in economic structure. Today's key industries may slide down the industrial hierarchy into relative oblivion.

...The challenge of survival greatly motivates those firms close to the scientific vortex. As the rate of technological change increases, the secular decline of all markets is speeded up. New products age quickly and this fact prods the center firm to sharpen its product development and marketing processes.

...Where technology leads, the center must follow, thus preserving itself from the twentieth century's most potent firm killer." 42/

The divergence in these positions is important to understand, for they present markedly different interpretations of the operation of market forces and of the possibility and desirability of controlling market structures.

42/ Averitt, Robert, The Dual Economy, op. cit., pp. 11, 16, 75.

Unfortunately, neither Galbraith nor Averitt substantiate their arguments with empirical observations. The limited amount of evidence that bears on this subject lends more support to Averitt's position than to Galbraith's. We have already discussed the evidence concerning progressiveness; little indication was found that highly concentrated markets are required or necessarily desirable. (The development and/or successful introduction of some new consumer products may be an important exception.)

However, past studies may tell us little about major innovations that restructure or reorganize an industry since they represent a small minority of all innovations. Numerous case examples suggest that major established firms are seldom the initiators of innovations that shake an industry to its roots. Supermarkets were introduced by small food store operators--fighting for a way to survive against chain organizations. Discount department stores were the progeny of general merchandise mavericks, not established department stores. Research efforts on the steam and Wankle engines, as alternatives to the internal combustion engine, have occurred largely within firms outside the automobile industry.

Large firms that are firmly entrenched in an industry may have little incentive to promote an innovation that will make existing facilities and technology obsolete, and will shake up the competitive balance. Thus, it is not too surprising that "in many industries new entrants have been a prime source of invention", especially if such inventions are of "industry shaking" magnitude.

The rather sparse evidence indicates no unique advantage for extremely large organizations in innovations of either large or small magnitude, with the possible exception of some new consumer products. Further, where flexibility, alertness and willingness to change are particularly important, such size probably carries definite disadvantages.

At the same time, studies have also shown that:

- Concentrated industries tend to be characterized by richer technological opportunities, 43/
- Large firms are particularly active in concentrated industries, 44/
- Large firms represent the large majority of all research and development expenditures, 45/ (much of this on new product development),
- Aggregate concentration (the percentage of all manufacturing sales or assets represented by the largest 100, 200 or 500 firms) has been increasing while market concentration in total has been relatively stable during the last two decades. This occurred as large companies entered more industries, usually by merger. 46/
- Consumer goods industries with highly differentiated products increased substantially in concentration, whereas those with undifferentiated products held about steady. 47/

There are undoubtedly several interpretations of the above points. One that seems plausible is that large organizations have gradually expanded their technological capabilities (both management and scientific) in response to the broader technological requirements of many new products, and the threat of potential competitors with advanced technological capabilities. 48/ This has

43/ Scherer, F. M. "Market Structure and the Employment of Scientists and Engineers", in Needham, op. cit., p. 244.

44/ A study of 135 manufacturing industries showed that the 200 largest manufacturers in the U.S. did 87% of the business in those industries where four-firm concentration ratios exceeded 75 percent, but only 14% of the business in industries where the top four firms represented less than 25% of the market. See Mueller, A Primer on Monopoly, op. cit., p. 38.

45/ Scherer, F. M., Industrial Market Structure...., op. cit., p. 358.

46/ Mueller, A Primer On Monopoly...., op. cit., chapter 3

47/ Ibid, p. 33.

48/ This reasoning is drawn in part from Weston, J. Fred, "Changing Environments and New Concepts of Firms and Markets", in the transcript of the Ninth Conference on Antitrust Issues in Today's Economy, New Technologies Competition and Antitrust, National Industrial Conference Board, Inc., N. Y., March 5, 1970.

made them both more "eligible" and more interested in entering a broad variety of industries--with perceived technological opportunities--to utilize their capabilities investment. Because of their financial, human and technological resources, large organizations have been able to enter "new lands of opportunity" with much greater ease than small organizations.

As these firms have applied their technological capabilities in product development, marketing, systems engineering or what have you, the industries which they have entered have evolved in some cases toward greater concentration with several large dominant organizations. This would be especially likely if the growth rate of the industry was relatively slow, and/or it produced differentiated consumer goods. At the same time, there have also been strong forces operating to erode market power and to offset tendencies toward greater concentration. More rapid technological and product obsolescence are two such forces that have continually threatened established positions in any given industry, and have motivated large organizations to continually seek out other opportunities to use their technical capabilities and to disperse risk.

Rapidly growing industries have naturally been very popular as new opportunities. At the same time, it is apparent that large firms have not confined their entry interests to such industries. Significant growth opportunities for an individual firm may be perceived even in declining industries. In fact, one executive acquaintance of the author's contends that it is easier to grow in a declining than a growing industry.

Information for the period 1947 to 1966 suggests that the relative attractiveness of fast growing industries probably results in a good many new entrants--which in turn tends to deconcentrate these industries. During this period, both

for producer and consumer goods industries, rapid growth was associated with deconcentration or a slower increase in concentration than was true in industries with slower growth rates. 49/ Barriers to new entry are also probably more difficult to build and maintain in industries experiencing rapid growth.

This interpretation tends to be more supportive of Averitt's thesis than of Galbraith's. It casts large organizations in the activist role of continually searching to fortify their differential advantage, to employ their capabilities, and to be where the action (and the profit) is. Thus, while forces are continually at work to erode existing sources of monopoly power, many firms at the top of the industrial pyramid have developed a different source of power; the capability to continually locate and develop new sources of monopoly power.

Concluding Comments

It should be apparent that there are many unresolved issues concerning market performance. As Richard Caves has suggested:

"What we know about the determinants of market performance represent a few islands of knowledge protruding from a sea of ignorance." 50/

Fortunately, there are a few "islands of knowledge". Empirical analysis has provided a fairly solid link between the structure of markets and certain aspects of market performance. However, these relationships do not appear to be linear and may not be monotonically increasing as often assumed. Rather, a

49/ From 1947 to 1966, industries whose sales grew less than 25% had an average increase in concentration of 2.9%. At the other extreme, industries whose sales increased by over 300% experienced a decline in concentration of 3.3% on the average. Mueller, Primer on Monopoly..., op. cit., p. 64.

50/ Caves, Richard, American Industry..., op. cit., p. 110.

threshold of structural forces appears to be needed before performance is affected.

Much remains to be done, particularly in examining the influence on market performance of vertical market relationships, of dynamic forces such as the search for growth and major innovations, and of large multi-industry, multi-national firms. The sources, uses, permanence and influence of market power also needs greater understanding.

In many respects, progress in understanding the dynamics of market performance has been frustratingly slow. However, the critical significance of the subject for the economic, social and political future of the United States warrants continued attention and inquiry by some of this country's foremost scholars. Forced to make navigating decisions for the economic system, public policy makers would benefit from the discovery of a few more "islands of knowledge".