

THE THEORY OF THE FIRM AND THE ALTERNATIVES

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## CHAPTER I

### INTRODUCTION

Economics has undergone many changes since the great depression. One such change relates to the theory of the firm. Some have argued that marginal analysis no longer has relevance in our present economic environment because of the separation of management from ownership. There is no reason, it is argued, for the managers to maximize profit. This is one argument. There are also others as we shall presently see.

#### Statement of the Problem

On one hand there are those who argue that the theory of maximization of profit in the long run is not clear. The lack of clarity results because the theory of the firm does not take market situations into account. The theory is unable to indicate specific actions which enable a firm to maximize the long run profit.<sup>1</sup> On the other hand, the theory is criticized because managers do not have the information necessary to maximize profit. Decisions are made under conditions of risk, ignorance,

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<sup>1</sup>Henry M. Oliver, Jr., Discussion on "Value and Value Theory," American Economic Review, Vol. XLIV, No. 2 (May, 1954), p. 159.

and economic indeterminacy--a form of uncertainty in which economic decisions depend on the actions of other independent groups. Managers are able to deal satisfactorily with the risk only while the condition of economic indeterminacy is most prevalent.<sup>2</sup>

Because information concerning economic indeterminacy, such as competitor's aim, state of the stock market, and the condition of political crisis, combined with panic buying is impossible to obtain, the businessman's decision is made according to selective intuition. The condition of economic indeterminacy and the resultant "selective intuition" cause the economic theory to be too open for good prediction.<sup>3</sup> Consequently, several alternatives are suggested. The alternatives do not, however, function as an analytical tool. In most cases, with slight modifications, the alternatives can be incorporated into the orthodox theory of the firm; or, bad as some are, they can be rejected altogether.

### The Alternatives

The many alternatives which have been suggested are diverse in their approach and goal, but they agree on one

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<sup>2</sup>Martin Shubick, "Information, Risk, Ignorance and Indeterminacy," Quarterly Journal of Economics, Vol. LXVIII, No. 4 (November, 1954), p. 638.

<sup>3</sup>Ibid., p. 640.

essential factor--the place of the profit. As all the major alternatives agree, the profit has a minimal acceptable limit. The limit is set so that it is high enough to satisfy the creditors and stockholders. The alternatives differ in many aspects. Some advance the notion of maximum growth; others propose the notion of sales maximization. The third alternative suggests that corporations maximize neither growth nor sales, but rather attempt to maintain a stable market share.

Some other alternatives, which have fewer followers, are noteworthy. They are the behavioral theory of the firm, the utility-index maximization and the balance-sheet homeostasis. All of these alternatives will be considered in chapters that follow.

#### Purpose of the Study

The purpose of this study is to demonstrate that marginal analysis is the most effective tool available for studying the behavior of a firm. The marginal analysis is the only theory that gives reliable and consistent results. Marginal analysis is not an all-comprehensive theory of the firm. It is not capable of explaining and directing the firm in every aspect of its activity. The purpose of this paper is to show that theory of the firm is the best tool the economist has for determining its activity.

### Development of the Subsequent Chapters

Chapter II is designed to prepare the way for the major part of the thesis. Chapter III explores the alternatives. Chapter IV consists of exposition, criticism, and evaluation of the major alternative theories. Finally, Chapter V sums up and brings the main points to conclusion.

## CHAPTER II

### FUNDAMENTAL CONCEPTS

This chapter is devoted to the explanation and definition of terms and concepts that are either implicitly or explicitly referred to in the course of the thesis.

#### The Basic Economic Laws

Sir Hubert Henderson, in his book Supply and Demand, discusses three economic laws which are similar to laws governing the motion of heavenly bodies in space. The economic laws are as follows:

1. When, at the price ruling, demand exceeds supply, the price tends to rise. Conversely when supply exceeds demand the price tends to fall.
2. A rise in price tends, sooner or later, to decrease demand and to increase supply. Conversely a fall in price tends, sooner or later, to increase demand and to decrease supply.
3. Price tends to the level at which demand is equal to supply.<sup>4</sup>

#### The Market System

Market is a place where households and firms interact. Market produces order out of a decentralized body of

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<sup>4</sup>Hubert Henderson, Supply and Demand, eds. C. W. Guilleband and M. Friedman (Illinois: University of Chicago Press, 1962), p. 15.

decisions. It directs what is to be produced, how it is produced, and for whom it is produced. The system operates most efficiently when

1. Every member of the society is free to choose what he wants within a wide range of limits.
2. A system of law assures the individual right and the right of property.
3. The member of society is secured against the takeover of his property and assured of enjoying the fruits of his activity.
4. Individuals can enter into agreement with each other when they believe it is to their mutual benefit.<sup>5</sup>

The above market operations are accomplished by market participants who are broadly classified into three groups:

#### Consumer

Every market participant is also a consumer. He buys goods and services for consumption. The consumer, in order to reach equilibrium with respect to his income, will substitute good X for good Y up to the point at which marginal rate of substitution of X for Y is equal to the ratio of the price of X to the price of Y.

#### Resource Owner

Resources, raw material, and labor are owned by individuals. Whether intermediate or final, all are inclu.

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<sup>5</sup>Israel Kirzner, Market Theory and the Price System (Princeton-Hall, N.J.: Van Nostrand Co., Inc., 1963), p. 13.

commodity. The equilibrium level of employment of input or productive service by a firm is determined by the value of the marginal product of the productive service in question. The value of the marginal product of such productive service is defined as equal to its marginal product multiplied by the price of a unit of the output.

### Entrepreneur

An entrepreneur is a person who decides what combination of resources to use in the production of a particular service or good. The entrepreneur and managers are essentially the same in some important aspects of their activity: (1) They decide the particular combination of inputs for a given output. (2) Both, the managers and entrepreneurs, must deal with uncertain conditions of the market. (3) They are faced with the speculative task of buying inputs, and after making some modifications, selling them at a price large enough to reward them for their efforts. Hence their motive or driving force is to make gains (or profit). In order to make larger profits, they must be efficient in use of inputs and labor. They must be aware of needs for the products which they produce. Therefore, to qualify fully for the above requirements, they are expected to produce so that  $MC = MR$ ; and, in the input market, this point is  $MFC = MNRP$ . If these two

conditions are satisfied, the highest level of profit will result.

### Market Structure

The structure of market for most industries is between two extremes, perfect competition and monopoly. The great bulk of manufacturing industries today belong to what is generally known as oligopoly, the condition of a few large firms supplying most or all products. In order to find the position of an industry within the two extremes of monopoly and perfect competition, one must look for the following signs:

1. The degree of buyer or seller concentration.
2. The condition of entry.
3. The degree of product differentiation.

These factors are the elements of market structure and the key concepts of industrial organization theory. They determine the conduct of business in the market. Market structure, if imperfect, can be the source of profit. Such profits are usually maintained for a long period of time. Whether obtained from activity in a perfect or an imperfect market, economic profit is essentially the same. The following is an attempt to define profit and to show that it is subject to the same considerations regardless of its source.

## The Theory of Profit

Profit, the driving force in a free enterprise society, is accepted by all who refuse profit maximization; for, one way or other, profit is an essential part of any type of theory of the firm that has been suggested so far. The disagreement is on the level of profit: maximum, satisfactory, or not below minimum. Before deciding on any of these levels, one must know what the economist means by the term "profit." After clarifying the term, the question of level of profit will also be clear.

### What is a Profit?

Frank H. Knight states that, "Perhaps no term or concept in economic discussion is used with a more bewildering variety of well established meaning than profit."<sup>6</sup>

In economics, one cannot speak of profit unless he takes an account of the following: (1) The direct or indirect disbursements for production; (2) the wage of the entrepreneur for his labor (or the wage of the management); (3) the rent to the land and buildings that belong to him or to the company, and (4) the premium for taking a risk. Interest on the capital can be thought of as wage or rent

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<sup>6</sup>Frank H. Knight, Risk, Uncertainty, and Profit (Boston and New York: Houghton Mifflin Co., 1948), p. 480.

and hence added to (3) or (4) above.<sup>7</sup> Under these conditions the existence of any surplus (except for changes in factors outside the control of management), in a competitive market, results from the introduction of new innovations. Only this introduction can give rise to a short term occasion of above-ruling prices. This higher price is caused by uncertainty involved in introduction of new innovations. Profit exists for a temporary period of time; after a lapse of time, others enter the market and force prices down. In an imperfect market, where differential advantage persists over a long period of time, profit is maintained for a longer period; and as "Kenneth Boulding has pointed out that profit arises both from uncertainty and from imperfections in the market."<sup>8</sup> Because of a new innovation or the existence of differential advantage, the following conditions must be satisfied for profit to occur:

1. The price of the product must not fall "to the extent that the greater production per worker brings no greater receipts now than

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<sup>7</sup>Joseph A. Schumpeter, The Theory of Economic Development, trans. Redvers Opie (New York: Oxford University Press, 1961), p. 120.

<sup>8</sup>Michael White, "Multiple Goals in the Theory of the Firm," in Linear Programming and the Theory of the Firm, ed. by Boulding and Spivey (New York: The Macmillan Co., 1960), p. 183.

the smaller product . . . before."<sup>9</sup>

2. The cost of the innovation must be "below the sum which remains after allowing for the possible fall in the price of the product and deducting the wage of the one worker required."<sup>10</sup>
3. Because of the rise in the price of the output as a result of the new innovation, marginal revenue productivity of land and labor has increased; addition to equal to these effects must be deducted from the receipts.

This surplus or net profit accrues to the person who introduces the innovation. It is his reward for employing a new combination of inputs. If no new combinations are tried, general prices are equal to the total outlays; and no net profit exists except those which result from market imperfections. No net profit exists because no change in production pattern has occurred which would make a less expensive product and consequently create a discrepancy between the existent price and total outlay. In order to make a net profit, new and existing factors must be used to greater efficiency and new combinations must be tried.

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<sup>9</sup>Schumpeter, op. cit., p. 130.

<sup>10</sup>Ibid., p. 130.

### Do Managers Cause a Change?

The next problem is to determine whether the introduction of managers in place of entrepreneurs causes any change in the definition of profit. When a manager accepts the responsibility of trying new combinations of inputs, his character changes. Since his responsibilities include deciding on different inputs and maintenance of differential advantages, the decision-making manager becomes the entrepreneur:

When, however, the managerial function comes to require the exercise of judgment involving liability to error, and when in consequence the assumption of responsibility for the correctness of his opinions becomes a condition for prerequisite to getting the other member of the group to submit to the manager's direction, the nature of the function is revolutionized; the manager becomes an entrepreneur.<sup>11</sup>

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<sup>11</sup>Knight, op. cit., p. 226.

## CHAPTER III

### THE ALTERNATIVES

Dissatisfaction with the theory of the firm led a group of economists to seek and devise several alternative theories. These theories claim to be more realistic than marginal analysis in describing the actual behavior of the firm. One of the first alternatives was suggested in 1935 by Professor Hicks, who offered the utility-index maximization. Professor Hicks' theory has not been widely accepted because the order of preferences can be "so general and so elastic that it becomes incapable of producing meaningful and refutable hypotheses."<sup>12</sup>

Another substitute was that suggested by Professor Boulding. His theory, called "Balance-sheet Homeostasis," argues that equilibrium of the firm is of prime importance. When equilibrium is disturbed, some control mechanism must be used to adjust it. However, disequilibrium of a firm is almost always cured by acquisition of funds. A firm with healthy profits can always acquire the needed medicine (funds) by borrowing; and hence it stabilizes its situation.

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<sup>12</sup>Gerald Nordquist, "The Breakup of Maximization Principle," Quarterly Review of Economics and Business, Vol. 5, No. 3 (Fall, 1965), 43.

Other theories advanced to replace the profit maximization are explored in detail below. These alternative theories include the sales maximization theory, percent market share theory, behavioral theory of the firm, the growth and security maximization theory, and Professor Galbraith's New Industrial State.

### Sales Maximization Theory\*

After his long and close association with many corporations, Professor William J. Baumol advanced the sales maximization theory. The theory states that managers try to maximize revenue more than anything else. They are even willing to sacrifice profit to promote increased sales. So long as the profit is not below a certain minimum acceptable level, managers are not concerned. "Once this minimum profit level was achieved, sales revenue rather than profits becomes the overriding objective."<sup>13</sup> Baumol offers an example that he has encountered:

Another case was that of a watch distributor whose sales to small retailers in sparsely settled districts were so few and far between that the salesman's wages were not made up by the total revenue they brought in. . . . The suggestion, that

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<sup>13</sup>William J. Baumol, Business Behavior, Value and Growth (New York: Harcourt, Brace and World, Inc., 1967), p. 48.

\*The material in this section has been taken from Professor Baumol's book Business Behavior, Value and Growth, (New York: Harcourt, Brace and World, Inc., 1967).

watch salesmen be transferred to markets with greater sales potential and a mail order selling system be substituted for direct selling in little populated regions was not adopted.<sup>14</sup>

Professor Baumol provides the following explanations for the behavior of such firms:

1. Consumers may not buy a product if they feel that it is failing in popularity.
2. The firm will not find a good reception in capital and money markets if its absolute or relative sales volume is declining.
3. A firm with declining sales is in the danger of losing distributors which is a very important consideration for marketing purpose.
4. Declining sales results in the unpleasant experience of firing rather than the pleasant task of hiring if sales were expanding.
5. While other firms are expanding, the firm with the declining or constant sales will lose the power of adaptability and become vulnerable to an unforeseen deterioration of business conditions.<sup>15</sup>

The essential point in sales maximization theory is to determine the acceptable minimum profit level. Managers realize that increased sales require expansion; and if

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<sup>14</sup>Ibid., p. 47. Italics mine.

<sup>15</sup>Ibid., p. 46.

funds are to be obtained externally, the firm must show healthy earnings. At the same time, "high profits . . . are likely to require some limitations in its current sales volume."<sup>16</sup> Therefore, on one hand, the managers must keep up profits in order to borrow externally; and, on the other hand, they want to increase sales. An intermediate optimum point which is the level of acceptable profit between the two extremes is chosen by management.

#### Percent Market Share Theory<sup>\*</sup>.

Percent Market Share Theory suggests that managers, especially those in oligopolistic markets, try to maintain their market share and expand production with the general growth of economy. The firm is caught between two competing forces. On one hand, high profits must be avoided because they would attract new entrants and destabilize the market share. On the other hand, in order to maintain the status quo, some barriers must be established to keep newcomers out. However, if the barriers are successful, the problem of increased profits arises which may attract more resourceful entrants. Therefore, firms

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<sup>16</sup>Ibid., p. 50.

<sup>\*</sup>The essential portion of this section has been taken from Professor Michael Gort's "Analysis of Stability and Change in Market Shares," Journal of Political Economy (February, 1963).

try to protect their market share by all possible means; at the same time they will not maximize profit in order to discourage future competitors from entering the market.

In general, there are two major types of barriers with which firms protect their sales: product differentiation and absolute superiority.

### Product Differentiation

Product differentiation means not only that a product is actually different but also that firms try to make the buyer merely believe that their product is different from that of their competitor.

Therefore, there are two types of product differentiation; first, the difference that is the result of a new improvement in the product; and second, the psychologically induced difference such as packaging and easily remembered names.

### Absolute Superiority

Absolute superiority is concerned with the advantage of established firms which have not only steady distributive agents but also production experience.

The sources of absolute superiority are the following: First is the difficulty of new entrants to obtain

factor of production and distribution equal to those of established firms. These are elements such as labor and experienced managers, established agents, and position of patents or other secret vital information. Second, established firms may own superior and more strategic deposits of resources necessary for production than new firms. Third, economics of large scale become vitally important if the new entrant must supply a significant portion of the total industry output in order to reach optimum or low cost production level. In this case the new entry will either bring a significant price reduction, or it will not be able to obtain the necessary market share and end up with cost above its competitors.<sup>17</sup>

As in the sales maximization theory, two competing forces are at work. The pair of forces discussed here, however, is of a different type. First, one recognizes the effect of the barriers which increase profits in the long run; and secondly, one notes a conscious manager's efforts to keep the profits down for fear of new competition. In order to determine the profit level, an intermediate point between these two extremes is chosen. Having chosen an intermediate point, the manager tries to keep this profit level, not the maximum profit possible,

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<sup>17</sup>Joe S. Bain, Industrial Organization (New York: John Wiley and Sons, Inc., 1959).

by concentrating on the barriers and their percent market share.

### Behavioral Theory of the Firm\*

The Behavioral Theory of the Firm is basically sociologists' way of comprehending the actions of a firm. The theory considers the firm as an organization without a desire to maximize any goal, but with a desire to satisfy any department that happens to push for a certain goal at a given time. The theory provides an "alternative framework and an alternative set of key relations for dealing with the modern representative firm."<sup>18</sup>

The theory has two principal parts, each of which has some subordinates: (1) the exhaustive variable categories and (2) a set of relational concepts.

#### The Exhaustive Variable Categories

The Exhaustive Variable Categories show the decision-making process and the manipulation of several variables which effect the goals of the organization, the organizational expectations, and organizational choice.

Organizational Goals.—Two aspects of organizational

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<sup>18</sup>Richard M. Cyert and James G. March, A Behavioral Theory of the Firm (New York: Prentice-Hall, Inc., 1963), p. 115.

\*The main body of this section has been taken from Professor Cyert and March's book A Behavioral Theory of the Firm (New York: Prentice-Hall, Inc., 1963).

goals are considered: (1) dimension of the goals, and (2) the aspiration level of the goals' dimension.

1. The set of variables influencing dimensions of the goal is division of labor or organizational coalition. The type of variables changes as new people come in and old ones leave; therefore, they are called dimensional variables.
2. The set of variables that influences the aspiration level of the goals' dimensions is the organization's past goal, its past performance, and the past performance of other comparable organizations.

Organization's Expectations.—An expectation is the result of available information. The variables are the processes by which information is obtained and consequently the expectation is formed.

Organizational Choice.—A choice is made as a response to a problem. The variables that affect the choice are those expected to help in solving the problem. Some variables affect standard decisions, and others affect consideration of alternatives.

1. Standard decision rules. The variables affecting the standard rule of decision are the company's past experience and its records.

2. Consideration of alternatives. The variables that affect the consideration of alternatives are the past experience of the organization in dealing with alternatives and the department of the organization which makes the decision.

### Relational Concepts

The behavioral theory of the firm also contains four relational concepts which are very important; and "in many respects, they represent the heart of our theory of business decision making."<sup>19</sup>

These concepts are: (a) quasi-resolution of conflict, (b) uncertainty avoidance, (c) problemistic search, and (d) organizational learning.

Quasi-resolution of Conflict.—A firm is a coalition of people with different goals. In order to resolve the conflict among the different goals, a procedure is developed. The procedure to approach conflicts makes use of three notions: (1) local rationality, (2) acceptable level decision rule, and (3) sequential attention to goals.

1. Local rationality. The conflict in an organization is a problem; in order to solve it,

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<sup>19</sup>Ibid., p. 116.

firms usually break it into sub-problems which are assigned to sub-units in the organization. This procedure results in solution of the problems by sub-unit in the organization. Consequently, the goal of sub-unit has first priority. The goal of sub-unit depends on the nature of that department. It may be maximum profit, maximum sales, or maintenance of a certain inventory level.

Such a method is workable only if the solutions are consistent with each other. A consideration of this method leads to the theory of consistency, which has two parts: (a) acceptable level decision rule, and (b) sequential attention to goals.

(a) Acceptable level decision rule.

Organizations do not need to have a very strong degree of consistency among the decisions of their sub-units. The only requirements are that local decisions satisfy local demands and an independent decision center. If these requirements are met, all sides are satisfied; and there is no cause for a conflict.

(b) Sequential attention to goals.

If the decision center is not satisfied, the problem is resolved by dealing with different goals at different times. The resolution results in such a manner that, first, a certain goal is satisfied; then, after a lapse of time, the other conflicting goals are satisfied. This procedure is hardly a solution, but rather a delay game acceptable to the theory.

Uncertainty Avoidance.—Uncertainty avoidance is the second relational concept in the theory of behavioral science. Organizations try to avoid uncertainty. They do so by making short-run decisions for short-run problems and do not concern themselves with long-term strategies.

In short they achieve a reasonably manageable decision situation by avoiding planning where plans depend on prediction of uncertain future events and by emphasizing planning where the plans can be made self-confirming through some control device.<sup>20</sup>

Problemistic Search.—The third relational concept considers a search. The search is stimulated by a problem and is undertaken in the hope of finding a solution for the problem.

The theory makes several allowances for the properties underlying search effort and the chances of

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<sup>20</sup>Ibid., p. 119.

possible success.

1. Motivated search. Motivated search is the result of a shortcoming in one of the goals of the firm. A search of this type continues until a satisfactory solution is found.
2. Simple-minded search. The search efforts are simple and modest. They are limited either to the neighborhood of the problem or to the neighborhood of some alternatives.
3. Bias in search. A search effort can be, after all, biased; and the theory allows three forms of biases. First, a search effort can be biased because of the training of the organization. Second, it can be biased because of an intrafirm communication. The last possibility may be the result of unsolved conflicts within the firm.

Organizational Learning.—The fourth and last relational concept in the behavioral theory of the firm considers organizational learning. It argues that organizations learn by showing adaptive characteristics over a period of time.

This phenomenon is observed in three levels: (1) adaptation of goals, (2) adaptation in attention rules, and (3) adaptation in search rules.

1. Adaptation of goals. Adaptation of goals at any particular time is a function of goals of a previous time period, the expectation with respect to previous goals, and the experience of other comparable organizations with respect to their circumstances.
2. Adaptation in attention rules. It is argued that firms learn to attend some parts of their environment and avoid others. This system is particularly true in learning a search behavior..
3. Adaptation in search rules. As established earlier, a search is problemistic; after a solution has been found, it is assumed that rules will be changed so that the organizations can benefit from the solution. Furthermore, since the search pattern has been successful, the same pattern will be used when a similar problem arises. Thus, after a certain period of time, the number of alternatives available to the firms will be reduced as they gain experience.

In general, the behavioral theory of the firm considers organizational goals a "going concern." They are not bound to anything, and each section or sub-unit

has its way most of the time. The theory makes no assumptions and allows no preconceived notions. It views firms as a coalition of "easy-going," "not-to-rock-the-boat" kind of people, yielding to one pressure and then turning around and yielding to an opposite one in turn.

#### The Growth Maximization Theory\*

The growth maximization theory is constructed on the basis that the growth, among many factors that influence managerial utility, is the most sought. Managerial utility is satisfied by the desire for power, salary, and status. The theory also says that the power structure of corporations today is set up so that the managers are able to pursue their goals of maximum growth as long as they satisfy what is known as "security constraint." The theory recognizes the low rate of mobility among high executives, a factor which encourages maximum growth as a means of self-promotion. However, maximum growth is welcomed after security, an important constraint, is met. Meeting the security constraint requires the satisfaction of a certain consideration, without which unchecked growth could lead to bankruptcy or takeover, and

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\*The main body of this section has been taken from Professor Robin Marris' article "A Model of the Managerial Enterprise" in Quarterly Journal of Economics (May, 1963).

thus result in loss of jobs.

The needed conditions for the security constraint depend primarily on the financial position of the firm. An excessive growth which results from immoderate borrowing or a risky investment would endanger the manager's job. To avoid financial failure, the firm should not make excessively risky investments; it should not engage in excessive contractual borrowing, and it should maintain enough liquid assets to offset short-run setbacks. To avoid take-over raids in general, a firm must maintain an acceptable internal rate of return on productive assets; it must not keep excessive retention ratio (the rate of retained earnings to earnings), and it must also refrain from excessive liquidity.

Therefore, to be relatively secure, the management cannot pursue the goal of growth maximization without being aware of the consequential loss of security that could follow. In other words, growth and security compete with each other.

Growth is defined as a positive change in the size of corporate capital (total assets). Total assets are productive assets and liquid assets. Simplicity requires the assumption that only productive assets earn. Rate of growth, on one hand, is equal to the rate of increase in the physical demand of the firm's product ( $D$ ); on the

other hand, it must be equal to the growth of the supply of finance, internal and external, to the firm (C). The supply of finance (C) is the firm's source of growth in total assets. Equality of C and D is necessary because an increase in growth of a firm's product demand, if not checked by financial prudence (non-excessive borrowing), will result in a decline of management security. This condition,  $C = D$ , is called the "balanced growth."

Growth rate of financial supply is restricted (for security purposes). The restriction acts as a constraint on product demand growth and ultimately on the growth of productive assets. Under these conditions, a firm is thought of maximizing growth when it equalizes (C) and (D), the condition of "balanced growth."

The growth model shows that the management is in the position to manipulate both: the supply of finance (C), through changes in the profit rate (P) and financial policy (a), and demand for the firm's product (D) through profit margin (m) and diversification rate (d). The manipulation of the above factors is carried through at the expense of profit (as will be shown below). As a result, a manager interested in growth could achieve growth at the expense of profit. Hence, profit maximization is of secondary importance.

## Growth of Demand for Firm's Product (D)

The management can maintain continuous growth if the firm produces new products which satisfy consumers. The rate at which (D) grows depends on the rate at which new products are introduced and the degree of success of these products. Possibility of success is increased by a policy of moderate pricing, by spending large sums on advertising, and by maintenance of a large research and development department. All of these variables affect the profit margin (m); the ratio of profit to sales. The lower (m), the higher chances of success; for this means more advertising, more R and D expense, and lower price. The other element influencing continuous growth mentioned above is the rate at which new products are introduced. If the average new product-idea and the amount of resources available to the R and D department are not harmonious, one can expect that rushed planning will result in a higher rate of failure.

It follows that the length of the development period for each idea will vary inversely with the ratio of ideas-in-process to the number of staff in the department.<sup>21</sup>

The rate of increase in the product demand (D)—the result of introduction of new products—is hence also

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<sup>21</sup>Robin Marris, "A Model of the Managerial Enterprise," The Quarterly Journal of Economics, Vol. LXXVII, No. 2 (May, 1963), p. 195.

dependent on the rate of diversification (d). Diversification is defined as the introduction of products for the purpose of splitting a given market or maintaining a sales level that is threatened. Diversification can be the introduction of a new product or an imitation of a present product.

Putting (m) and (d) together one can write  $D = D(m, d)$  where (m) and (d) are policy variables. They are the endogenous variables for which the model intends to find a solution.

(m) is a policy variable since the managers can decide its level through the prices they charge and the amount they spend on advertising. (d) is determined through the amount of funds and level of staff available to research and development. It has the property of being a diminishing factor of (D) since increase in staff of R and D, beyond a certain level, will result in diminishing returns. The same is true for rushed planning.

Hence the success or failure of an increase in the product demand to the extent expressed above is in the hands of the managers.

In Figure 1, each function is drawn with respect to a different given profit margin (m), and at each level  $m_1 > m_2 > m_3$ .

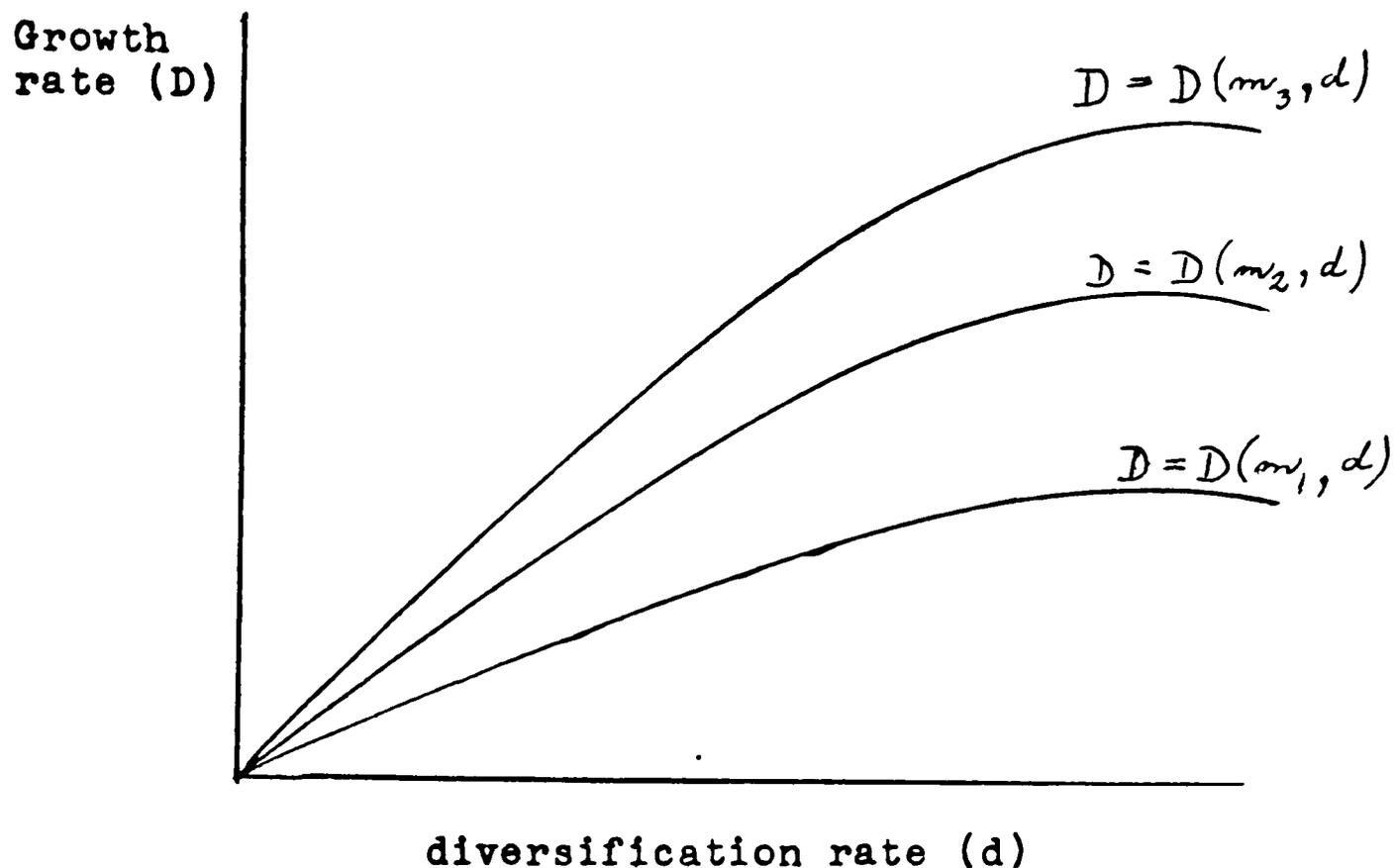


Fig. 1

### Supply of finance (C)

The growth of corporate productive capital depends partly on the rate of internal finance and partly on the rate of financing absorbed from external sources.

The supply of finance depends on the following simplifying assumptions:

- a. A new issue finance is not considered, especially by well-established corporations.
- b. For management's security purpose, a long-run maximum is put on the leverage ratio, and a long-run minimum on liquid asset ratio.

c. The portion of profit retained—retention ratio—is also stable. It is so for fear of take-over raid and stockholders' consideration.

With these assumptions the long-run growth rate of supply of finance becomes a homogeneous function of profit rate (P). In others words, when the value of financial policy variables (leverage, retention ratio, and liquidity) is held constant growth of the corporate capital is assumed as a homogeneous function of profit rate; and one concludes that  $C = a \cdot P$ . Where (a) is the coefficient of policy variables (or security constraint) with a unique value found only after all constraints on leverage, retention and liquidity are operative. Hence it is an exogeneous variable. (C) is the rate of growth of corporate capital, and (P) is the rate of profit.

For a firm to be at the maximum of its balanced growth curve (see below) (a) must be effective and constant which is denoted  $a^*$ :

$$a \leq a^* \text{ and } C \leq a^* \cdot P$$

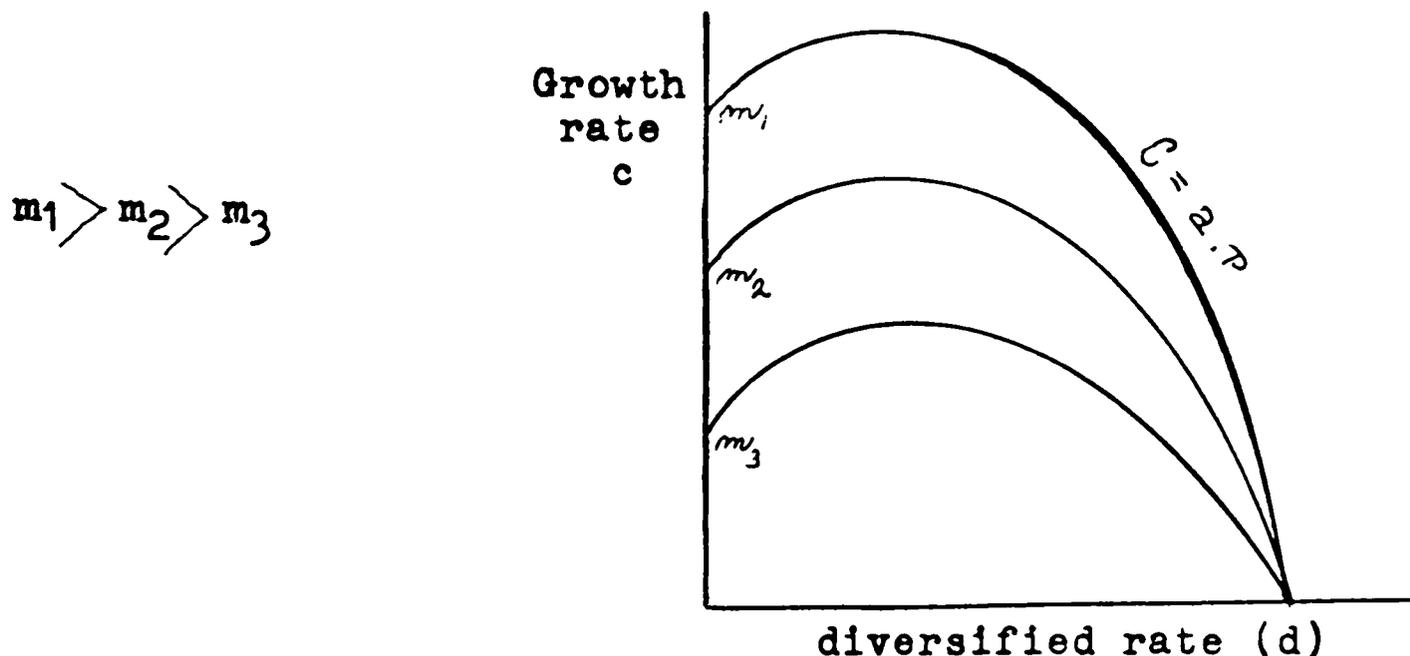


Fig. 2

At each smaller ( $m$ ) the profit margin is low, meaning that the security is increased by being too conservative; and low profits will result with small ( $m$ ). Therefore, the choice of ( $m$ ) has an influence on  $C$ .

### Profit Rate (P)

The profit rate is determined by capital/output ratio and profit margin. Capital/output ratio, in turn, is determined by production function, which requires supervision and planning; to this extent it is created by the management and existing technology. Hence, they influence profit rate.

With technology and other variables of a production function considered constant in the short-run, one can see

that capital/output ratio has the same characteristics as diversification process. Poor or late decisions concerning (d) will reduce overall efficiency of capital utilization and hence increase capital/output ratio.

In the process of diversification, assuming that the average decision-making efficiency of management varies directly with their experience, one can expect that the profit margin will decline; but at the same time the capital/output ratio will increase, provided that the diversification is pushed beyond its optimal point:

$$P = P(m, d)$$

The same family of curves as supply of finance curves are obtained (Figure 2). Provided the diversification is known, the capital-output ratio is constant at any given period; and changes in (m) will shift the whole  $P = P(m, d)$  function.

#### The Completed Model

The equations discussed are:

$$D = D(m, d) \quad (\text{Product demand equation})$$

$$C = a.P \quad (\text{supply of finance equation})$$

$$P = P(m, d) \quad (\text{rate of profit equation})$$

$$a \leq a^* \quad (\text{security constraint co-efficient or co-efficient of financial policy})$$

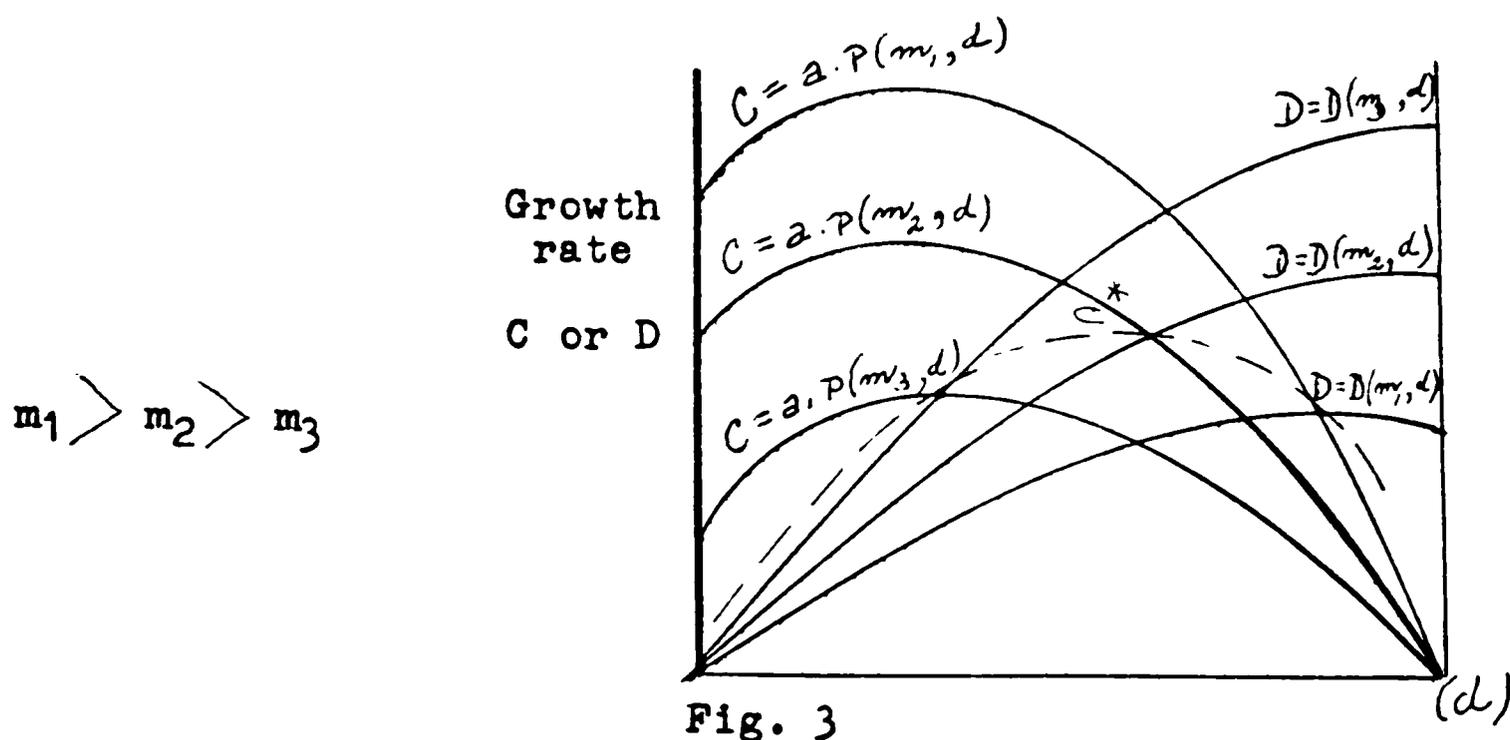
and  $C = D \quad (\text{balanced growth condition})$

To maximize the growth one notes  $C = a^*.P$ ; since  $P = P(m,d)$  we substitute  $C = a^*.P(m,d)$ , and if  $C = D(m,d)$  then  $a^*.P(m,d) = D(m,d)$ .

The left part shows the rate of growth of the corporate productive capital to be expected from a combination of the profit margin ( $m$ ), financial policy ( $a$ ), and diversification rate ( $d$ ). The profit rate ( $P$ ) is endogenous because the profit equation  $P = P(m,d)$  is a function of two endogeneous variables ( $m$ ) and ( $d$ ).  $a^*$  is exogeneous because it is decided outside the system. Finally, ( $d$ ) and ( $m$ ) are policy variables which the model will determine.

If  $a^*$  is given, then the choice of a value for either ( $m$ ) or ( $d$ ) will suffice to determine the system. In other words, once either ( $m$ ) or ( $d$ ) has been determined, one of them has to be set consistently with the first one in order to achieve a balanced growth.

The demand for the firm's product and the supply of finance curves are both continuous because the demand curve shows the aggregate result of many individual products, and the supply curves are found by variations of a continuous variable—( $m$ ). Therefore, both  $D = D(m,d)$  and  $C = a^*.P(m,d)$  are continuous. Hence, the curve obtained from the intersection of these two functions (where those with identical ( $m$ ) intersect) is continuous which is the balanced growth curve (Figure 3)—with a maximum at  $c^*$ .



The balanced growth curve is related to (a) and (m). If (a) is reduced, the balanced growth curve will shift downward. This lower balanced growth curve means a smaller demand for the firm's product, hence a downward shift in  $D = D(m, d)$  and higher rate of return. The profit rate (P) and consequently managerial security are increased while the growth rate has declined. Since security is already saturated at  $a^*$ , according to the assumption of the model, its increase is not needed; and, therefore, only the loss of growth occurs which is not wanted by the managers. For the stockholders, when (a) fluctuates (P) goes up; and they gain. Hence, there is the conflict of interest between the managers and the stockholders.

How could (a) fluctuate? In most firms (d) is not held constant by any managerial habit or policy, but it



If the manager decides to increase  $m_2$  of the  $D = D(m_2, d)$  function to  $m'_2$  where  $m'_2 > m_2$  (meaning less sensitivity to selling effort) the function will shift downward to  $D = D(m'_2, d)$ ; and the new intersection will be below the former one:  $C_1^*$  is lower than  $C$ . If one expands this concept for every schedule of  $D = D(m, d)$ , a new balanced growth curve will result which will be below the former at every level. This expansion implies that an increase in policy variable ( $m$ ) would affect the balanced growth curve downward with an implication of an increased profit whenever ( $m$ ) is increased.

According to the graph, whenever  $D = D(m, d)$  shifts down it signifies a lower level of demand for the output, which means lesser growth. As a result of profit seeking, ( $m$ ) has increased. This increase is a direct function of ( $P$ ) in  $P = P(m, d)$ . As mentioned earlier, this function has the same characteristics of  $C = a^*P$ .

### Summary

In the hands of managers,  $a^*$ ,  $d$  and  $m$  are variables. Their fluctuation shifts the balance growth curve. The balanced growth curve, whenever shifted, has an inverse effect on profit rate. If it shifts upward, profits are lowered, the growth increased, and vice-versa.

## The New Industrial State\*

Another interpretation of actual behavior of the firm is offered in the well-publicized book of Professor Galbraith. Here the firm, or mature corporation, is presented with goals or objectives different from those considered so far. The firm is also much more dependent on governmental policy and intellectuals than was suspected before. As in other theories, the mature corporation does not maximize the profit. It has other more important and relevant goals to consider before even thinking about profit maximization. To believe in profit maximization is to believe

That a man of vigorous, lusty and reassuringly heterosexual inclination eschews the lovely, available, and even naked woman by whom he is intimately surrounded in order to maximize the opportunities of other men whose existence he knows only by hearsay.<sup>22</sup>

The Galbraithian state of industry recognizes a level of technology, according to which the decision-making requires specialized knowledge, experience, and planning well in advance of actual production.

The coordinator, designer, and actual operator of this system are not the top management, but rather all the

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\*The main parts of this section have been taken from Professor Galbraith's book, The New Industrial State (Boston: Houghton Mifflin Co., 1967).

<sup>22</sup>John K. Galbraith, The New Industrial State (Boston: Houghton Mifflin Co., 1967), p. 95.

people who participate in the decision-making process. This group includes engineers, junior executives, and other people with specialized knowledge. Professor Galbraith calls such organization of narrowly but deeply trained people the technostructure.

The technostructure has great power and intends to maintain it. The decisions made are the product of organized intelligence; the group would be inefficient if it were broken.

#### Goals of the Technostructure

Individual members of the technostructure adapt and identify with the goals of the corporation because of their belief that they may influence the corporation to seek in a goal which they deem socially relevant. In short, the individual, at least, acts as "an organization man" in hope of having some of his views adopted by the organization. Therefore, one should examine the goals that members of the technostructure identify with.

The first and most important goal of the technostructure is survival. In order to survive it must preserve its autonomy, and hence the power of decision-making. To achieve power, it must have a certain minimum level of earning. The level of earning must be sufficient to keep

stockholders satisfied and provide enough savings for planned investment. Failure to satisfy these demands necessitates appeals to external sources of funds and may cause loss of autonomy. The maximization of profit, on the other hand, does not serve any real purpose to the technostucture; but rather, if pursued, maximization could involve taking a wholly unwarranted risk. As a result, for the sake of self-interest, "the technostucture is compelled to put prevention of loss ahead of maximum return."<sup>23</sup>

The second most important goal of the technostucture is growth. Growth is important because expansion directly increases the size of the technostucture. Increase in size is a welcome aid for better planning, which also result in more promotion and compensation. In this respect the growth is consistent with the pecuniary and personal interests of the technostucture members. Furthermore, the growth can protect the technostucture against economic contractions. A large firm can resist a severe depression without having to lay off any of its technostucture members. Taking into account group performance of the organization, the above mentioned factor is of considerable importance. If a firm is very large,

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<sup>23</sup>Ibid., p. 178.

the government may aid in case of stress, e.g., Lockheed Corporation. The growth is also socially acceptable since it is part of the much avowed general economic growth and the general economic growth is a good rationalization for the management to identify with.

The third goal of the technostructure is "technological virtuosity," which enables the firm to improve its present products and introduce new ones. The capacity for the technical innovation is a good companion to the growth goal. In this respect, it also has some social value; and, hence, it is easy for the technostructure members to identify with it. However, this goal is pursued only if it does not interfere with the minimum earning as specified in the first goal. The firm must also show a rising level of dividend because of the traditional custom which is associated with success. However, constantly rising dividends and technological virtuosity are secondary to the previous two goals.

After the goals discussed so far comes that which is generally known as corporate social responsibility, such as helping to find cures for diseases, better understanding of the free enterprise and its essential superiority over other forms of the social discipline, etc. These goals, however, are tertiary and tend to be abandoned with the first signs of recession.

In order to introduce a new product, the mature corporation must plan well in advance; and to avoid market fluctuations, it has to control prices, be assured of the demand for the product, and, in short, control the market rather than be subjected to market discipline. The control of the market is what Professor Galbraith calls "the revised sequence" in contrast to "the accepted sequence" where the producer is subject to the market discipline.

The revised sequence is the result of the immense amount of capital, technology and research required for development of a new product. If a product fails, the technostructure loses autonomy; and for this reason "to leave this matter to market would be regarded by those principally involved, as the equivalent of leaving them to chance."<sup>24</sup>

Control of the market is pre-requisite to good planning. The planning serves to foresee the actions needed from the time production is decided until it is completed. For this reason a successful plan must include the projected price of the product, its costs and sales revenue before the decision to produce is made

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<sup>24</sup>Ibid., p. 361.

The above description of the industrial state has some far-reaching impacts; those relevant to this thesis will be noted. Important to this study are the setting of prices, the management of specific demand, and the regulation of aggregate demand.

### Setting of Prices

The industrial system of the present American economy is best characterized as an oligopoly, in which prices are controlled in a way to serve goals of the technostructure. Price control minimizes risk and maximizes growth. The minimization of risk reduces danger of loss of autonomy, and the maximization of growth facilitates further planning of the firm. Setting prices is the outcome of the assumption that large firms have more resources to command and hence have a better chance of being effective in planning and control.

The controlled price must be low enough to attract customers and expand sales; but at the same time, it has to provide enough earnings to satisfy stockholders and finance growth. The oligopolistic firms in an industry recognize their needs as well as those of the industry. If an industry engages in price competition, others must follow; and all suffer. To raise prices, others

may not follow; and the resultant loss of sales will be a definite danger to the autonomy of the technostructure. It is for these factors—effective planning, collective self-interest and disregard for profit maximization—that the prices must be and are stable. The prices remain stable even in the face of fluctuations in costs and demand, a further evidence of a non-profit maximization behavior of the firms. Prices should not be sensitive to these changes because if they were, it would point to the rule of market supply and demand.

#### The Management of Specific Demand

A price control, if not accompanied by volume control, is of no value to the technostructure. Assurance about the amount of products sold at a set price is of vital importance. All of the above mentioned goals of the technostructure are jeopardized if the public does not buy the product. At this point, management of demand comes into consideration. The management of specific demand

Embraces a huge network of communication, a great array of merchandising and selling organizations, nearly the entire advertising industry, numerous ancillary research, training and other related services and much more.<sup>25</sup>

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<sup>25</sup>Ibid., p. 210.

The above machinery is established because the technostructure recognizes that most needs of the present American society are created and that the consumers must be constantly reminded of these needs. Consumer demand for most products satisfies psychic need rather than natural or innate want. The change from physical need to psychic need is the result of an "affluent society."

In an affluent society, advertising affects the distribution of psychic products. It increases the flow of money to those who advertise and reduces the flow to those who do not. Advertisements for Ford and Chevrolet do not cancel each other, but rather attract the money that might have gone for the purchase of a motor boat or new furniture.

Advertising also focuses on private goods and takes attention away from public goods. However, as far as firms are concerned, advertising provides the needed apparatus by which they can influence their volume of revenue. Furthermore, such an increase in sales does not necessarily come about at the expense of their competition.

It is this influence, partial rather than complete by which the technostructure exercises control over the specific demand.

## The Regulation of Aggregate Demand

The regulation of aggregate demand is another very important factor for the goals of technostructure. The planning, established prices and control of demand are a waste if economic fluctuations are not curbed.

Purchasing power must be reliably available in sufficient volume to absorb the current production of the industrial system at the established prices.<sup>26</sup>

The regulation of aggregate demand, although called a remedy of unemployment in some quarters, became a recognized government responsibility. Such solution seemed to be in support of the labor unions, but it helped the technostructure much more than the unions. The welfare payments, social security compensation, and probably the future negative income tax all serve the needs of the technostructure by distributing money to people so that they can buy and so that the aggregate demand can be sustained.

Government activity in the form of large expenditures—for defense, the space program, public education, and the poor—are also well suited to the needs of the technostructure.

The evaluation and analysis of the above theories is the subject of the following chapter.

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<sup>26</sup>Ibid., p. 230.

## CHAPTER IV

### THE CRITIQUE OF ALTERNATIVES

A realistic and impartial look at the present American economic system shows that managers of large firms are rather independent in choosing and deciding certain important questions concerning the activity of the firm. Although it has been magnified, the reduced profile of stockholders is visible and worth attention.<sup>27</sup> The interest of management and the stockholders diverges at the following points:

a) Executive Compensation

The management is seemingly able to influence the compensation it receives by choosing favorable incentive formulas besides very high salaries.

b) Expansion through Merger

The managers are able to put through mergers which improve their status but not necessarily the lot of the stockholders.

c) Retention of Earnings

Over the years the managers have developed the right to retain all of the earnings after a

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<sup>27</sup>Shorey Peterson, "Corporate Control and Capitalism," Quarterly Journal of Economics, Vol. LXXIX (February, 1965), p. 18.

customary amount has been taken for dividends. Theoretically, under rigid assumptions, retention of earnings could favor growth at the expense of profit. However, in terms of empirical proof, it remains to be proved that growth takes precedence over profit to any extent worthy of attention.

d) Conflict of Interest

The managers may own stock or have a fraternity brother in another company and hence allow some special favors to the firm in question.<sup>28</sup> However, according to Professor Galbraith, a remarkable code of ethics prevents such exercise or at least reduces its impact.

The above points and the theories of Chapter III are collectively called the "Theory of Managerialism." This managerial theory of the firm is far from complete, and it leaves many basic questions unanswered. Some of these questions are: how resources are allocated to their efficient use, how prices are related to the scarcity, and how factors are compensated with respect to their contribution to the production. The proponents of managerialism frequently disregard these questions and

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<sup>28</sup>Ibid., p. 19.

concentrate on the presumption that the managers make full use of whatever advantage they may have over the stockholders. In reality, the management may not be able to capitalize on its alleged advantages even if it desires to do so. To show this idea one may use the phenomenon of having the potential power to do something but, in actuality, not being able to use it. This phenomenon applies both to managers and stockholders because the circumstances at any given time are more influential in determining the use of power than the mere precedent or legal right. Perhaps the most striking example of this complex bureaucratic concept is the office of the Presidency of the United States. It is known that the President is the most powerful man in the country because of his position and legal right to command. Yet the excellent book by Richard Neustadt<sup>29</sup> points out that the President has no power to command; he has the power to persuade. The startling conclusion is the result of the bureaucratic considerations and circumstances in which he operates.

The managers, with much less latitude of the legal and institutional rights, are more vulnerable to the forces in their operating environment. Executives live

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<sup>29</sup>Richard Neustadt, Presidential Power (New York: John Wiley and Sons, Inc., 1960).

in a culture of constraints. It is these constraints that make the managers pursue the maximum profit, a pursuit which at the same time makes it impossible for them to make a conscious decision affecting the level of profit adversely as alleged by the managerialism. The managers' operating environment is a unique culture. It is

. . . A culture of income statements and balance sheets, of stress on per-share earnings and earnings growth, of securities analysts scrutinizing company performance, of vast institutional investing which rests on expert appraisal of corporate quality and promise, of ratings by articulate management consultants. It's a culture also, whose high-quality press reiterates the marks of corporate excellence and names names as it recounts the record of success and failure. And now it is a culture that the computer enters to sharpen guidelines to higher revenue and lower costs.<sup>30</sup>

Moreover, the size of the gap between the revenue and costs is not something that can be independently decided in advance by setting a level of profit. It depends on many factors, the impact of which is not known at the time the decisions are made. These factors are the planning, providing, pricing, and selling of the product in addition to the equipping, organizing, purchasing of labor and supplies, and other needed services.<sup>31</sup>

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<sup>30</sup>Peterson, op. cit., p. 12.

<sup>31</sup>Ibid., p. 9.

The chances for the managers to predict accurately the outcome of these factors are very low; hence, they are not able to choose deliberately so that their choice may have a negative impact of a known magnitude on the profit. On the other hand, when the profit maximization is mentioned, it is supposed to be a tool of analysis which helps the managers to make subjective decisions. The contribution of profit maximization is as an indicator of future development concerning the activity of a firm.

#### Subjectivity of Marginal Analysis\*

At first glance the analysis of the firm's behavior seems formidable, especially when one considers the owner who never has heard the term "marginal" or the manager who has not understood it fully in college. How can they behave as profit maximizers? This consideration is the basis for many non-marginalists who argue that profit maximization is impractical. At first glance, the great body of theory and its complication on theoretical level may indeed discourage the untrained reader. The theory may not only seem impractical but also rather impossible. In order to understand the workability of marginal analysis, one must know the limitation and claims of the

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\*The major portion of this section has been taken from Professor Machlup's article, "Marginal Analysis and Empirical Research," American Economic Review, Vol. XXXVI, No. 4 (September, 1946).

theory. Without consideration of the above factor, evaluation is meaningless.

The theory of the firm has never claimed to answer such questions as how much to increase a price, why a firm produces a product, or what number of people it employs. It attempts only to show the effects that certain changes in conditions have on the actions of the firm; it shows not a quantitative amount but rather the direction a price or employment takes because of new circumstances. The theory is purely subjective, and different people may reach different conclusions with the same information. The decision is reached through a collection of estimates, guesses and hunches.<sup>32</sup> A person who believes that the theory is more than a collection of subjective thoughts has overestimated the limits of the theory; and, hence, he may make false statements.

The components of the theory, marginal cost and marginal revenue, are expectations of the future as perceived by managers. When these terms are employed, the firm attempts to maximize profit<sup>33</sup>; but this does not mean that businessmen cannot be motivated by other forces.

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<sup>32</sup>Fritz Machlup, "Marginal Analysis and Empirical Research," American Economic Review, Vol. XXXVI, No. 4 (September, 1946), p. 522.

<sup>33</sup>Ibid., p. 525.

People have multiple goals and motives. Some goals are diametrically opposed to others, and it is possible that some of these goals may conflict with others (i.e., manager's continuous desire to increase utility).

In marginal analysis profit is used as an analytical tool by which the direction of change may be determined. How may one accommodate other goals or motives into marginal analysis? He may consider them a constraint on profit. The other goals and motives can be assigned a monetary equivalent if the firm so wishes.

Thinking "marginal" calls for little effort. The following examples illustrate "marginal" thinking: if the price of a product is cut by 10%, will more of the product be sold? What happens if the price is increased by 10%? If increased production raises total cost by so much, how much will the total revenue increase?<sup>34</sup> These are the types of questions which a businessman asks himself constantly, and in doing so he uses marginal analysis theory.

In order to see how the theories described in Chapter III can be consistent with the profit maximization, one may look at Professor Baumol's sales maximization theory. It is known that a sales maximizer

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<sup>34</sup>Ibid., p. 537.

pursues his goal even at the expense of profit in the short run and in long run. Professor Mabry has determined consistency of this theory with the profit maximization, including the refinement of Professor Sandmeyer's<sup>35</sup> idea that in sales maximization prices must increase with increased advertising.<sup>36</sup> Professor Mabry shows that the sales maximization is the profit maximization in the short run and in long run. In the short run, he assumes that the oligopolist could have a kinked demand curve. This assumption is realistic because in the oligopolistic markets prices are stable. Prices are hard to raise because others may not follow in the anticipation of increased sales. On the other hand, if a firm reduces prices, all follow suit; and no advantage is gained by the firm which initiates the price cut. For this reason prices are stable; and, as a result, at that price, a kink develops in each firm's demand curve.<sup>37</sup> This is the average revenue curve; the resultant marginal revenue is discontinuous at that price (kinked).

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<sup>35</sup>Robert Sandmeyer, "Baumol's Sale Maximization Model: Comment," American Economic Review (December, 1964), p. 1073.

<sup>36</sup>Beverly D. Mabry, "Sales Maximization vs. Profit Maximization: Are They Inconsistent?" Western Economic Journal (March, 1968), p. 154.

<sup>37</sup>Paul M. Sweezy, "Demand Under Condition of Oligopoly," Journal of Political Economy (August, 1939), p. 569.

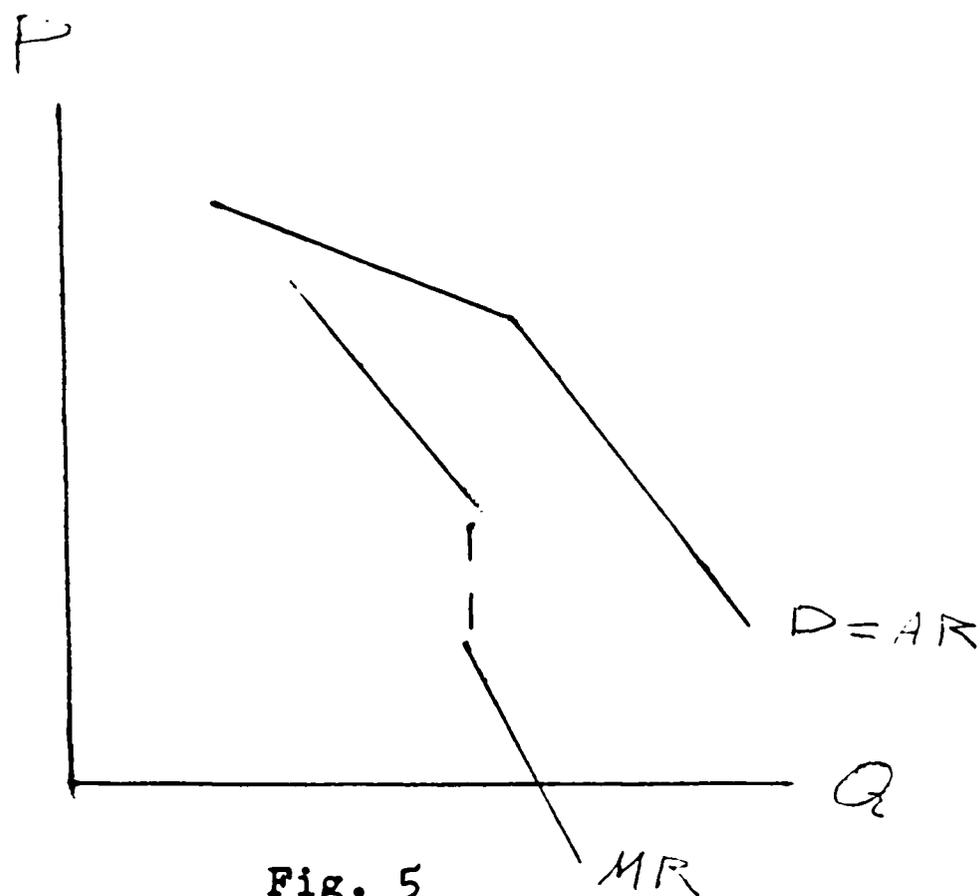


Fig. 5

Such a discontinuity provides a wide range for the marginal cost curve to pass through; and, as a result, the price at which the products are sold is the most profitable. He assumes, in the long run, that the firm first assures itself of the market for the product for the purpose of minimizing the risk and then expands. With these assumptions in mind he shows the possibility of the consistency of profit and sales maximization.

## In the Short Run

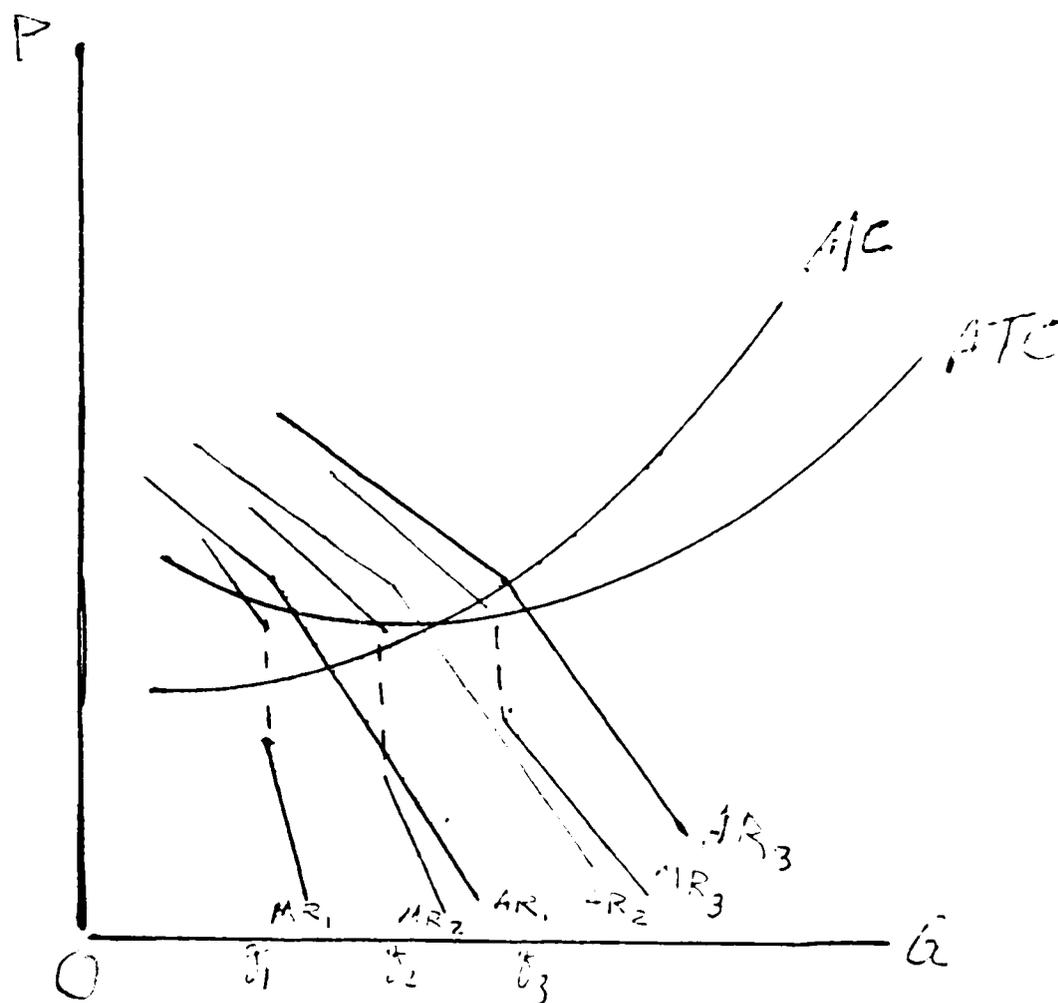


Fig. 6

The initial situation is that the firm produces  $oq_1$ ; and, since at that output its average total cost (ATC) is declining, there will be no pressure to increase the price if sales increase to  $AR_2$ . Under the demand condition of  $AR_2$ , the firm is maximizing the profit just as it was when the demand was  $AR_1$ . At  $AR_2$  the firm has the added advantage of decline in the unit cost as ATC is sloping downward. If the demand shifts further to  $AR_3$ , the unit profit will decline; for at this state ATC is increasing. At this point the hypothetical firm

is producing  $Oq_3$  and still maximizing its profit. Only if the sales increase beyond  $Oq_3$  will the price change become necessary. Therefore, in the short run, with a kinked demand curve, the sales could fluctuate between  $Oq_1$  and  $Oq_3$  without causing any change in the profit maximizing behavior of the firm.<sup>38</sup>

### In the Long Run

In the long run at some periods, the firm may maximize the sales in anticipation of future expansion. If the management forecasts a long run increase in sales, the manager will expand. Before expansion it is logical for management to be relatively assured of consumers who would buy the increased production. It is toward this end that the companies increase their sales beyond the point of profit maximization; then, after enough buyers have been recruited, the operation for an expansion is put into effect.

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<sup>38</sup>Mabry, op. cit., p. 155.

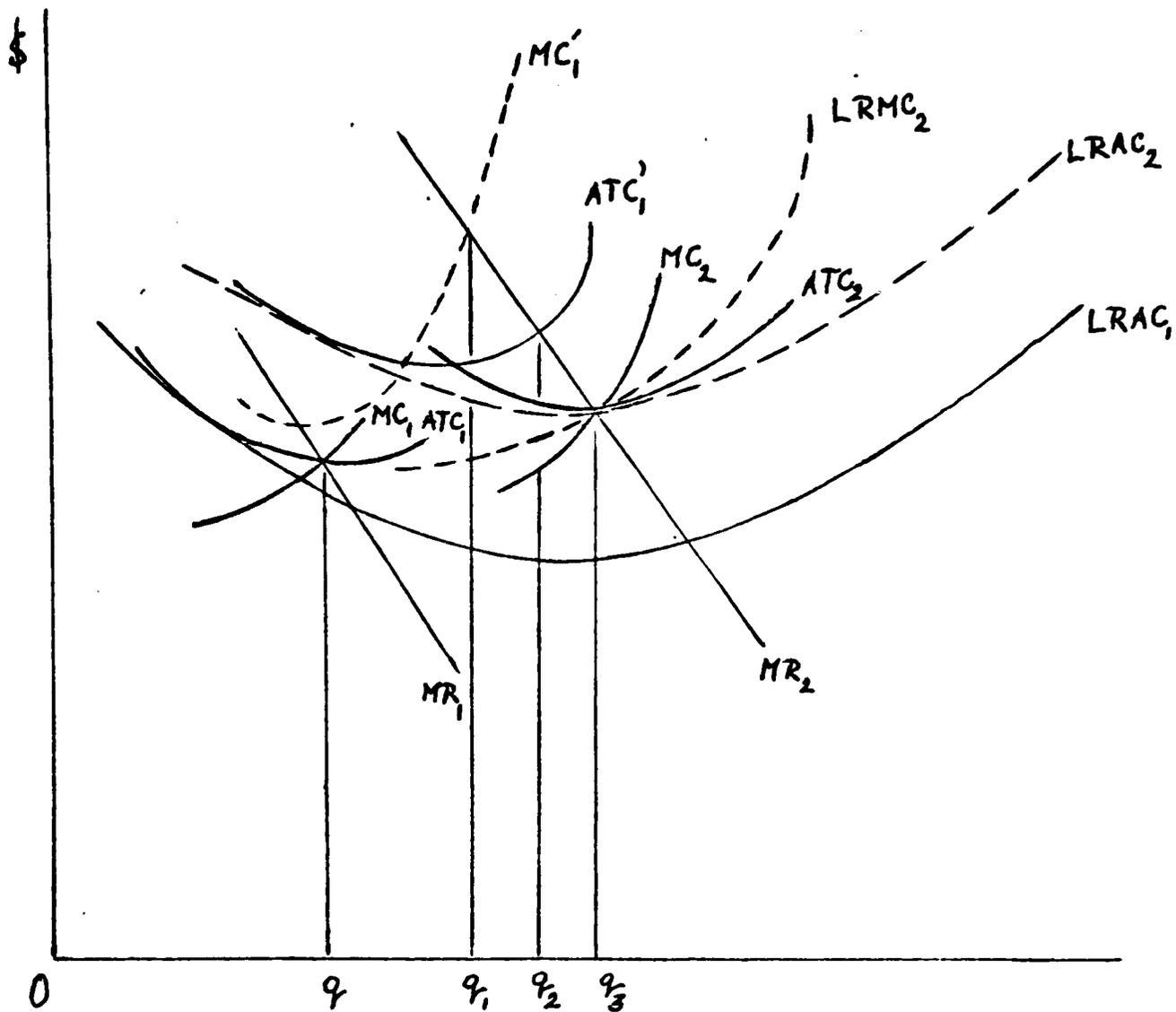


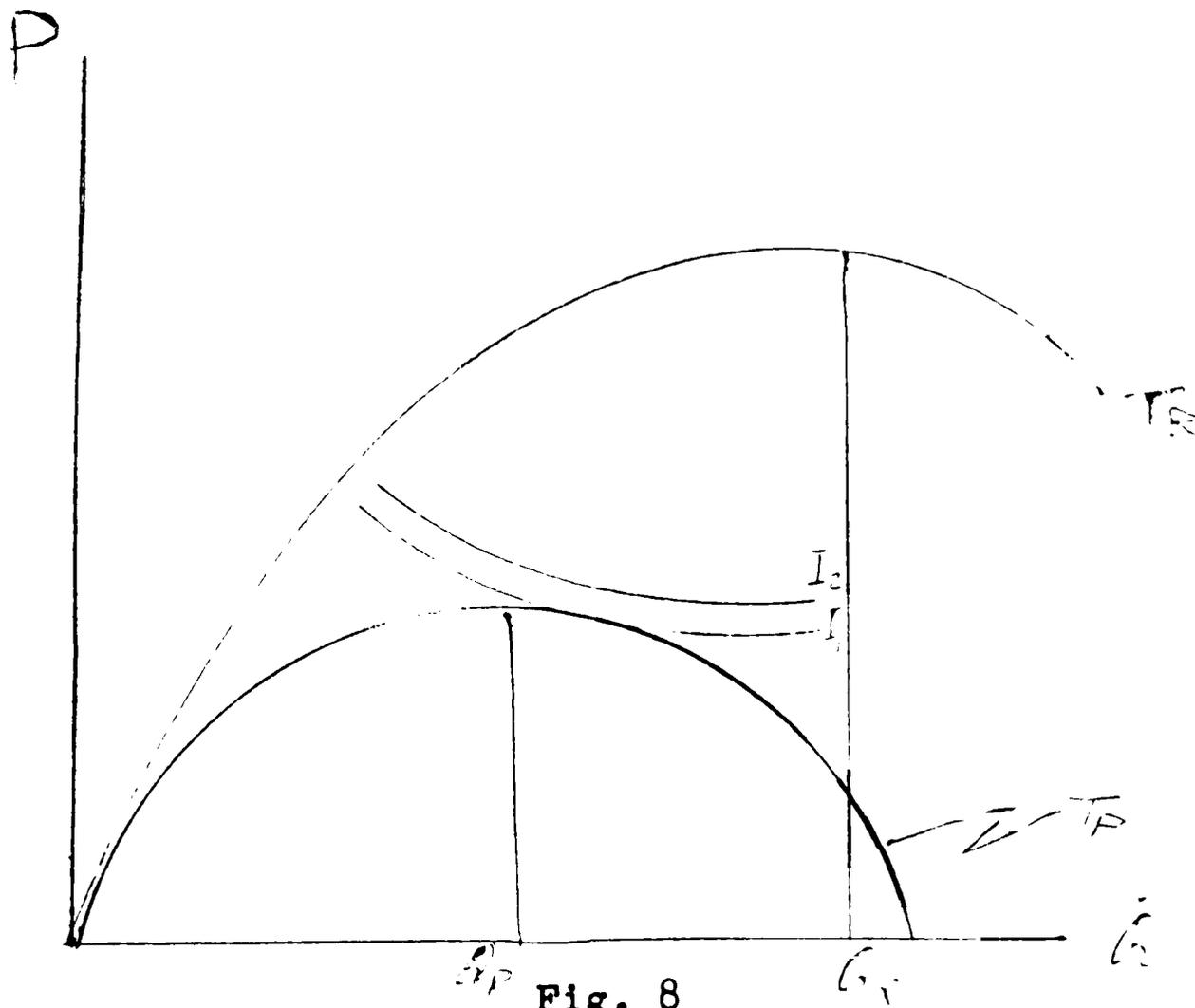
Fig. 7

The original position of the firm is shown by  $MC_1$ ,  $ATC_1$ , and  $MR_1$ . When sales are increased beyond the profit maximization level, these curves will shift to the right and become  $MC'_1$ , and  $ATC'_1$ . The production, as a result, has increased by  $qq_1$  amount. Some researchers refer to this condition as sales maximization. However, when a new plant comes into operation, the curves shift downward and become  $MC_2$  and  $ATC_2$ . At this time, the firm is back in the profit maximization behavior with a total production of  $oq_3$ . The sales maximization may take most of the firm's time in the long run; but that fact that

at every point in time the firm is thinking of an expansion and taking advantage of increased sales in the future, makes it a profit maximizer.<sup>39</sup>

In an unpublished paper that uses a combination of Baumol and Boulding model, Professors Hill and Ford show that sales maximization is only a special case of many other possibilities.<sup>40</sup>

In the following graph, the indifference maps show management's willingness to sacrifice profit in favor of sales in making the price-output decisions.



<sup>39</sup>Ibid., p. 157.

<sup>40</sup>Lewis E. Hill and William F. Ford, "A Critical and Extensive Note on the Baumol Sales Maximization Hypothesis" (unpublished paper, Texas Tech University).

Production at  $OQ_r$  level (the sales maximization point) is an uncertain position since (1) "A slight miscalculation and/or an unexpected and unfavorable turn of events might result in a stockholder-imposed change of management"<sup>41</sup> because beyond  $OQ_r$  sales as well as profits decline. (2) With an oligopolistic kinked demand curve the pursuit of sales maximization, if it requires price cutting, "could lead to mutually destructive price wars."<sup>42</sup> (3) The sales maximization in the short run and long run have different trade-offs. This arises through the indirect adverse effect of the long term sales maximization on the profit and productive capacity. Increased production requires increased investment which calls for good credit outside the firm and sufficient retained earnings inside the firm; both are directly related to the level of profit rather than sales. Hence, it is logical to expect the management to stay around the  $Q_p$  level of production with the indifference maps close to the peak of profit function.

The second theory in question is the market share theory. The market share theory suggests that prices are stable over long periods because of the oligopolistic

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<sup>41</sup>Ibid., p. 3.

<sup>42</sup>Ibid., p. 3.

market and because of fear of new entrants. The kinked demand curve is therefore the long run demand. The marginal revenue is discontinuous at the going price and provides a wide range for marginal cost to pass through. Even if one assumes that the long run demand curve is not kinked,<sup>43</sup> the market share theory still coincides with the profit maximization theory. When a firm experiences costs in the short run, which in turn assure the firm of long term profit and survival as well as blockage of new entrants, it is taking into account long term prosperity which has costs and benefits. So long as the benefits, such as unfluctuating earnings, stable prices and maintenance of the present production level, can be kept for a long time, then the cost is acceptable. This cost should be calculated and accounted for in the firm's decision-making.

The third theory in question is the behavioral theory of the firm. Because this theory "rejects preconceptions and assumptions and to rely only on observation of overt behavior,"<sup>44</sup> it is almost useless to the economist. This theory tries to show the actual working of a firm. The decisions are made and goals pursued

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<sup>43</sup>George Stigler, "The Kinky Oligopoly Demand Curve and Prices," Journal of Political Economy, Vol. LV, No. 5 (October, 1947), p. 447.

<sup>44</sup>Fritz Machlup, "Theories of the Firm: Marginalist, Behavioral, Managerial," American Economic Review, Vol. LVII, No. 1 (March, 1967), p. 4.

without a preconception of what to expect or what not to expect. Furthermore, every goal is subject to bargaining, and none is stable over an extended time lapse. One may arrive at the same concepts or different ones using the same techniques because the theory does not offer a concrete procedure for analysis. Everything is subjective but, at the same time, unstable. The subjective mood today may be to increase sales, tomorrow to increase inventory, the day after to increase advertising and so on. After the completion of this cycle one has no assurance that it will start from the same point or in the same order. Nothing is tangible and permanent.

The problem has been brilliantly exposed in a short and refreshing article by Professor Machlup.<sup>45</sup> Ten heads of departments of a successful firm propose ten different and conflicting policies about excess profits made. The proposals include increased investment and plant expansion, retirement of debt, increased dividends, increased advertising, increased expenditures for product development, expenditure for basic research, gifts to universities, increased management salary, increased wages, and finally reduced prices. The task of the behavioralist in solving

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<sup>45</sup>Fritz Machlup, "Corporate Management, National Interest, and Behavioral Theory," Journal of Political Economy (October, 1967), p. 772.

these conflicting problems is enormous.

How should conflicts of evaluation be resolved?  
. . . If compromises are required, to what extent should the interest of the owners of the business be sacrificed for the sake of some of the favored national goals?<sup>46</sup>

The behavioral theory of the firm is unable to offer practical and meaningful solutions to the most common problems of a large firm.

The last theory for consideration is that of Professors Galbraith and Marris. An analysis of the Galbraith-Marris theory must first be directed to the point that both of these theories have the same implications as far as this study is concerned. In both, the corporation is alleged to set a minimum rate of return and then maximize the growth as its primary goal.

At this point it is appropriate to mention that when firms set a target rate of return they are actually operating in accordance with the conventional long run profit maximization theory.<sup>47</sup> The target rate of return is set with consideration of elements such as the rate a certain market can bear, discouraging of new entrants, and assurance of a stable demand for the firm's products.

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<sup>46</sup>Ibid., p. 774.

<sup>47</sup>Alfred E. Kahn, "Pricing Objectives in Large Companies: Comment," American Economic Review, Vol. XLIX, No. 4 (September, 1959), p. 678.

All of these are, of course, in harmony with the long run profit maximization theory. The difference between Galbraith-Marris and the long run profit maximization with a target rate of return is the height of the minimum acceptable rate of return. The smaller the difference between the height of minimum acceptable rate of return in growth maximization theory and the target rate of return in profit maximization, the closer the two theories come to each other.<sup>48</sup>

At the theoretical level, Professor Marris' growth model is inconsistent with the profit maximization only in one respect, namely in the choice of either (m) or (d) and (a). Even when one accepts his stringent assumptions to come to the conclusion of the model, the uneasiness of its long run effect remains unclarified. It is true that when profit margin (m) is decreased, the  $D = D(m, d)$  function shifts upward; and, hence, the maximum balanced growth reaches a higher level. But, one must keep in mind the significant point that it is not possible for managers to reduce profit by a given amount; furthermore, they cannot do it for any extended period of time. A firm with a lower than maximum profit could jeopardize its chances of obtaining outside finance which could just as well shift

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<sup>48</sup>Robert M. Solow, "The Truth Further Refined: A Comment on Marris," Economics: Mainstream Readings and Radical Critiques, ed. David Marmelstein (New York: Random House, 1970), p. 527.

$c = a.p$  curves downward and hence neutralize whatever the upward shift would have reacted previously. Ignoring this possibility could be a shortcoming. Furthermore, the adverse effect of reduced  $(m)$  does not stop at this point, in the long run, lowering the maximum profit will affect the firm's productive capacity through which its capital/output ratio is affected. This effect has an unfavorable impact on  $(d)$  and hence, in the long run, the model shows a different result than it would have in the short run under the same set of circumstances.

A point of lesser importance is the effect of fluctuations in  $(a)$ . From  $a = \frac{D(m,d)}{P(m,d)}$  one notes the inverse relationship between  $(a)$  and profit rate  $(P)$ . Hence with  $(a)$  going down,  $(P)$  will increase. But what happens when  $a = a^*$ ? It is evident from  $a^* = \frac{D(m,d)}{P(m,d)}$  —with  $D(m,d)$  given, that their relationship becomes direct, meaning that both the growth and profit are maximized. The whole problem then, as far as  $(a)$  is concerned, revolves around the question of why should not  $a = a^*$  all the time. Indeed, for stable firms one should expect that  $a = a^*$ . It maximizes the growth, the manager's "dream," as well as the profit. This combination is best of two worlds. One should encounter the  $a \neq a^*$  situation only under exceptional, unforeseen, and strictly temporary conditions. The case

of a forced upward change in the firm's pay-out-ratio can serve here as an example. One can imagine such a situation to be remote and most probably short-lived. Considering the short-term nature of the (a) fluctuations, one can conclude that, in the majority of cases, this part of the model does not offer any real alternative to the orthodox profit maximization hypothesis. It is probably because of these considerations that Professor Solow writes:

It is not enough for the theory that, with everything else momentarily given, a corporation's profitability should depend on how rapidly it is trying to expand its sales and its capacity.<sup>49</sup>

The important thing is for the relationship between the growth rate and profitability to hold for a long interval of time. It is not at all clear that such long term relationships between growth and profitability holds in Galbraith-Marris theory. Another point regarding the joint theories is that the corporation can choose between growth and profit as two separate objectives. This choice is also true for long-run profit maximization with respect to target rate of return. The corporations can increase growth any time they earn more than the target rate. Consideration of tax structure is also important. The tax on long run capital gains is half as much as the tax

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<sup>49</sup>Ibid., p. 527.

on dividends. Therefore, this type of expansion is a tax-free return to the stockholder.

It is not known whether the talk of growth among managers is the result of a conscious preference between the two objectives of growth and profit or just the result of extra earnings over the long run target return with its attractive tax treatment. It is only through the empirical research that one can find the practical impact and hence the significance of the inverse relation between the profit margin (m) and growth. Until then the theoretical critique of the growth theory remains a very powerful force which is difficult to cope with.

There is also dissatisfaction with the alternatives from the so-called "radical economists." They prefer the profit maximization theory on the ground that: (1) if management does not have much stock in the percentage sense of the word, the actual amount may tell a different story. For example, chairman Frederic Donner owns 0.017% of GM stock valued at \$3,917,000, or chairman Lynn Townsends owns 0.177% of Chrysler stock worth \$2,380,000.<sup>50</sup> Therefore, their interest in profit-maximization is very personal. (2) If the primary

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<sup>50</sup>Ralph Miliband, "Professor Galbraith and American Capitalism," Economics; Mainstream Readings and Critical Critiques, ed. David Mermelstein (New York: Random House, 1970), p. 536.

object of corporations is strength, growth, and expansion,

. . . They are reducible to the single common denominator of profitability . . . thus profits, even though not the ultimate goal, are the necessary means to all ultimate goals, as such, they become the immediate, unique, unifying, quantitative aim of corporate policies, the touchstone of corporate rationality, the measure of corporate success.<sup>51</sup>

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<sup>51</sup>Ibid., p. 537.

## CHAPTER V

### SUMMARY AND CONCLUSION

In preceding chapters this study has explored the profit maximization theory and some of its widely discussed alternatives and explained that, to a large extent, the alternatives can be looked upon as a variation of the orthodox theory.

It has also been pointed out that the marginal analysis is a tool by which one can predict the direction that certain changes may take as a result of new developments in the position of a firm, in the market, or in the general condition of the market. The opponents of the marginal analysis either think too highly of the theory and consequently get disappointed or disregard the all-important subjectivity clause in it. The workability of the theory, the dependability of results, and the direction of change are all dependent on the assumptions made. The assumptions are, of course, subjective; and, hence, different people may reach different conclusions using marginal analysis. Furthermore, the theory does not claim to answer all of the questions; and it is not supposed to be an all-comprehensive contract capable of multi-purpose usage.

Therefore, in order for the critiques mentioned in Chapter I to be valid, it must be determined whether the theory has been formed to include such far-reaching abilities as attributed to it in the first place. Looking at it from this perspective, one finds that most of the criticism should not be articulated in the first place. The theory must be looked upon as a tool for guidance under the circumstances. "It abstracts (i.e., ignores), as many aspects of reality as possible in the search for essence."<sup>52</sup>

To this extent, it is more potent than any other replacements offered so far. Professor Earley's study of 110 large manufacturing firms states that:

. . . In any case the major message seems to be fairly clear: (1) marginal accounting and costing principles have a strong hold among these companies, and the bulk of them also follow pricing, marketing, new product and product investment policies that are in essential respects marginalists. (2) Whether interested in short-run profit or long-run health, very few of these companies give any evidence of ignoring the opportunities and/or necessities of practicing marginalism in the above range of problems.<sup>53</sup>

Other points of significance that could reinforce acceptance of the marginal analysis theory are:

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<sup>52</sup>H. T. Koplin, "The Profit Maximization Assumption," Oxford Economic Papers (July, 1963), p. 130.

<sup>53</sup>James Earley, "Marginal Policies of 'Excellently Managed' Companies," American Economic Review (March, 1956), p. 66.

1. The recognition of the fact that about 150 corporations in Fortune's largest 500 industrials are controlled by one individual or the member of a single family.<sup>54</sup> These individuals hold more than 10% of the stock, which is more than necessary for an effective control.
2. The fact that "managerial class is the largest single group in the stockholder population, and a greater proportion of this class owns stock than any other."<sup>55</sup>
3. To believe in the profit maximization does not mean that firms are constrained in their activities of any kind. One must not look at the superficial activities of the managers which "seem" to be anti-profit and conclude that the profit maximization is dead. The complexity of present state of capitalism requires many fine and seemingly contradictory moves by managers. The contradictions, in terms of the profit maximization theory, are removed when they are analyzed with a broad interpretation of the theory.

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<sup>54</sup>Miliband, op. cit., p. 534.

<sup>55</sup>Ibid., p. 534.

4. The profit maximization theory does allow all kinds of anti-profit decisions as long as a money value is put on them and compared with whatever benefits result, whether it be psychic satisfaction or "social responsibility."
5. Any force that is supposed to replace, restrict or qualify the objectives of marginal analysis must be examined whether, under the condition of effective competition, it has much chance to change the direction to which firms react with respect to their inputs and outputs.<sup>56</sup>

All in all, marginal analysis should not be considered more than a tool by which one can subjectively estimate the "out of pocket" cost of a new improvement or input and determine whether its return is large enough to offset that cost. To this extent, the theory is simple, practical, and capable of giving meaningful results.

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<sup>56</sup>Machlup, "Theories of the Firm . . . ," op. cit., p. 13.

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