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## MANAGERIAL DISCRETION AND BUSINESS BEHAVIOR

By OLIVER E. WILLIAMSON\*

The importance of managerial discretion in the operations of the large corporation has been widely recognized. Carl Kaysen has recently characterized the large corporation as one "in which the constraints imposed by market forces are loose, and the scope for managerial choice is considerable" [14, p. 90], and R. A. Gordon holds that the development of the large corporation has led "to a greater emphasis on the non-profit goals of interest groups other than the stockholders. Almost certainly, the personal and group goals of . . . executives are a part of the total value system—the desires for security, power, prestige, advancement within the organization, and so on. . . . Profits are viewed as the basic constraint subject to which other goals can be followed" [12, p. xii].

Although there is substantial support for these views, it is by no means universal,<sup>1</sup> and before general acceptance can be attained a number of questions need to be answered. Can operational significance be provided to these managerial goals? Can such a translation of managerial objectives be integrated into a theory of the firm from which meaningful theorems can be derived? What is the evidence that discretion has an important and systematic impact on business behavior? Specifically, what influence does competition in the product market, managerial tastes, and the diffusion of stockholder control have on the allocation of resources in the business firm? How do regulatory or other constraints influence nonprofit behavior?

My purpose in this paper is to show that the first two of these questions can be answered in the affirmative, that the preliminary evidence tends to support the proposition that the opportunity for discretion does have a systematic effect on resource-allocation decisions, and that

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<sup>1</sup>For an argument that monopoly distortions are not great, see A. C. Harberger [13] and David Schwartzman [23].

regulatory constraints are apt to produce particularly strong manifestations of nonprofit behavior. Part I introduces the notion of "expense preference" for translating managerial goals to an operational form, develops the implications of a model constructed around these objectives, and contrasts these with those obtained from the profits-maximization hypothesis. Part II examines some of the preliminary evidence on discretionary behavior. The effects of regulatory constraints are considered in Part III.

### I. *Some Models of Business Behavior*<sup>2</sup>

My purpose in this section will be to show how managerial objectives can be introduced into a theory of the firm, to develop the implications of a model responsive to what appears to be the salient motives of managers, and to contrast these with those obtained from short-period and multiperiod versions of the profits-maximization hypothesis.

#### A. *A Managerial Discretion Model*

1. *Managerial Objectives.* The following list represents a (largely overlapping) composite of the managerial motives identified as the result of the experiences and insights of the organization theorists, Chester I. Barnard [4] and Herbert A. Simon [26], and the study of business leadership of R. A. Gordon [12]: salary, security, power, status, prestige, professional excellence.<sup>3</sup> That they are neither equally significant nor entirely independent should be obvious. Rather than attempt a finer discrimination, however, it seems more fruitful to inquire into the behavior such motives produce.

<sup>2</sup>The material appearing in this and the subsequent sections is developed in more detail in my unpublished doctoral dissertation, "The Economics of Discretionary Behavior: Managerial Objectives in a Theory of the Firm" (Carnegie Institute of Technology, 1963). The initial version of the model, which has since been modified, appears in [34].

<sup>3</sup>In addition to the factors listed, Barnard and Simon also include expansion as one of the firm's objectives. Indeed, William J. Baumol has recently suggested that the firm is operated so as to maximize the rate of growth of sales [6, pp. 1085-87], which is the dynamic counterpart of his static sales-maximization hypothesis [5] and preserves the main theorems of his earlier model [6, p. 1087]. Although "expansion" objectives also enter into the model that we propose, it is a somewhat selective variety of expansion that will occur—namely, expansion of those types of activities that most contribute to the satisfaction of the management—rather than a generalized expansion of the entire scale of the firm. Whether this leads to a more fruitful construction is an empirical question and can scarcely be determined on a priori grounds. The preliminary evidence that is examined in Part II of this paper appears to support the proposition that preferences towards specific varieties of expenses exist (rather than a generalized preference for expansion per se), but this is essentially an open question.

The usual objection to introducing nonpecuniary elements into the theory of the firm is that such considerations, if not unimportant, are analytically evasive. Since their importance is an empirical question, it can hardly be dismissed so easily. In order, however, to assess their influence, an analytical basis for examining them must be devised. Shifting attention from the motives to the *means* by which the motives are realized provides the necessary connection. That is, rather than attempt to introduce security, power, prestige, and so forth into the theory directly, we ask instead: to what activities do these motives give rise? These activities, rather than the motives, are then made a part of the model.

The essential notion that we propose in order to connect motives with behavior is that of *expense preference*. That is, the management does not have a neutral attitude towards costs. Directly or indirectly, certain classes of expenditure have positive values associated with them. In particular, staff expense, expenditures for emoluments, and funds available for discretionary investment have value additional to that which derives from their productivity.

Expansion of staff is an activity that offers positive rewards, the benefits of which can be enjoyed quite generally [18, pp. 321-22]. Indeed, since promotional opportunities within a fixed-size firm are limited, while increased jurisdiction has the same general effect as promotion but simultaneously produces the chance of advance for all, the incentive to expand staff may be difficult to resist. Not only is it an indirect means to the attainment of salary [25], but it is a source of security, power, status, prestige, and professional achievement as well.<sup>4</sup>

<sup>4</sup>As has been observed among organization theorists, "the modern organization is a prolific generator of anxiety and insecurity" [30, p. 24]. This insecurity is partly due to uncertainty with respect to the survival of the organization as a whole and, more important (and more immediately relevant to its individual members), of the parts with which the individuals identify. Attempts to reduce this condition can be expected; indeed, the direction these efforts will take can be anticipated. If the surest guarantee of the survival of the individual parts appears to be size, efforts to expand the separate staff functions can safely be predicted.

That staff contributes to power, status, and prestige should be self-evident. This is true within the organization as well as in the manager's business and social relationships outside the firm. The vast influence that executives in large industrial organizations enjoy arises much more from the perceived control over resources that they possess than from the personal wealth which they have attained.

The "professional" inducement to expand staff arises from the typical view that a progressive staff is one that is continuously providing more and better service. An aggressive staff will therefore be looking for ways to expand. Although in choosing directions for expansion the relative contribution to productivity will be considered, the absolute effect on profits may be neglected. As long as the organization is able to satisfy its performance requirements, there is a predisposition to extend programs beyond the point where marginal costs equal marginal benefits. The incentive to increase staff, having both natural and legitimate elements, is exceptionally difficult to resist.

We use the term "emoluments" in a somewhat special sense. They refer to that fraction of managerial salaries and perquisites that are discretionary. That is, emoluments represent rewards which, if removed, would not cause the managers to seek other employment. They are economic rents and have associated with them zero productivities. Thus they are not a return to entrepreneurial capacity but rather result from the strategic advantage that the management possesses in the distribution of the returns to monopoly power. Being a source of material satisfaction and an indirect source of status and prestige, they are desirable as a means for satisfying goals in each of these respects.

The management would normally prefer to take these emoluments as salary rather than as perquisites of office since, taken as salary, there are no restrictions on the way in which they are spent, while, if withdrawn as corporate personal consumption (such as expense accounts, executive services, office suites, etc.), there are specific limitations on the ways these can be enjoyed. However, there are two considerations that make perquisites attractive. First, for tax purposes it may be advantageous to withdraw some part of discretionary funds as perquisites rather than salary. Second, perquisites are much less visible rewards to the management than salary and hence are less likely to provoke stockholder or labor dissatisfaction.<sup>5</sup> Hence a division of emoluments between salary and perquisites is to be expected.

Although it is difficult to specify what fraction of salary and perquisites is discretionary in the sense defined, it is possible, as we show in Part II, to test for the relation of these rewards to competition in the product market and managerial tastes. Thus, they can be identified *ex post* even if not *ex ante*.

The existence of satisfactory profits is necessary to assure the interference-free operation of the firm to the management. Precisely what this level will be involves a complicated interaction of the relative performance of rivals, the historical performance of the firm, and special current conditions that affect the firm's performance. Management, however, will find it desirable to earn profits that exceed the acceptable level. For one thing, managers derive satisfaction from self-fulfillment and organizational achievement, and profits are one measure of this success. In addition, profits are a source of discretion (indeed, we define "discretionary profits" as the difference between actual profits and minimum profits demanded). Discretionary profits

<sup>5</sup> Historically, whenever stockholder discontent has been rampant, management compensation has been a favorite target [12, p. 164]. Likewise in wage negotiations, unions often make a point of executive salary levels. Emoluments, being much less visible, are less readily attacked.

represent a source of funds whose allocation may be importantly determined by managerial, in addition to economic, considerations. As with the expansion of staff, the expansion of physical plant and equipment provides general opportunities for managerial satisfaction and for much the same reasons.

2. *The Model.* Since these notions will be introduced explicitly into a mathematical model, it will be useful to define them more precisely. The relationships that we shall use are:

$R$  = revenue =  $P \cdot X$ ;  $\partial^2 R / \partial X \partial S \geq 0$

$P$  = price =  $P(X, S; \epsilon)$ ;  $\partial P / \partial X < 0$ ;  $\partial P / \partial S \geq 0$ ;  $\partial P / \partial \epsilon > 0$

$X$  = output

$S$  = staff (in money terms) or (approximately) general administrative and selling expense

$\epsilon$  = the condition of the environment (a demand-shift parameter)

$C$  = production cost =  $C(X)$

$M$  = managerial emoluments

$\pi$  = actual profits =  $R - C - S$

$\pi_R$  = reported profits =  $\pi - M$

$\pi_O$  = minimum (after tax) profits demanded

$T$  = taxes where  $t$  = tax rate and  $\bar{T}$  = lump-sum tax

$\pi_R - \pi_O - T$  = discretionary profits

$U$  = the utility function

From our statement of the firm's objectives, the firm is operated so as to

maximize:  $U = U[S, M, \pi_R - \pi_O - T]$

subject to:  $\pi_R \geq \pi_O + T$ .

As formulated, the constraint is of the same form as the last term in the utility function. Hence, assuming that second order conditions are satisfied and disallowing corner solutions, the constraint becomes redundant so that we can treat the problem as one of straightforward maximization.<sup>6</sup> Substituting the functional relationships for profits into the expression we have:

maximize:  $U = U[S, M, (1-t)(R-C-S-M) - \pi^0]$ .

The following first-order results are obtained by setting the partial derivatives of  $U$  with respect to  $X$ ,  $S$ , and  $M$  equal to zero:<sup>7</sup>

$$(1) \quad \frac{\partial R}{\partial X} = \frac{\partial C}{\partial X}$$

<sup>6</sup> Although this is a convenience, it is by no means a necessity. An inequality-constrained maximization could be handled by making use of the Kuhn-Tucker theorem [16].

<sup>7</sup> In these expressions,  $U_1$  is the first partial of the utility function with respect to  $S$ ,  $U_2$  is the first partial with respect to  $M$ , and  $U_3$  is the first partial with respect to  $\pi_R - \pi_O - T$ .

$$(2) \quad \frac{\partial R}{\partial S} = \frac{-U_1 + (1-t)U_3}{(1-t)U_3}$$

$$(3) \quad U_2 = (1-t)U_3.$$

From equation (1) we observe that the firm makes its production decision in the conventional fashion by equating marginal gross revenue to the marginal costs of production. However, equation (2) reveals that the firm will employ staff in the region where the marginal value product of staff is less than its marginal cost. This equation can be rewritten as:

$$\frac{\partial R}{\partial S} = 1 - \frac{1}{(1-t)} \frac{U_1}{U_3}, \text{ where } \frac{U_1}{U_3}$$

is the marginal rate of substitution between profits and staff. In the profit-maximizing organization, staff has no value other than that associated with its productivity, so that this exchange rate is zero, and the equality of marginal costs and value products obtains. Equation (3) discloses that the firm will absorb some amount of actual profits as emoluments—the amount being dependent on the tax rate.

Having established the equilibrium conditions, the comparative statics properties of the model remain to be developed.<sup>8</sup> That is, we want to find how the system adjusts to a change in the condition of the environment (the demand-shift parameter  $\epsilon$ ), a change in the profit tax rate ( $t$ ), and a lump-sum tax ( $\bar{T}$ ).

The results for a displacement by each of the parameters are shown in Table 1. The direction of adjustment of any particular decision variable to a displacement from its equilibrium value by an increase in a particular parameter is found by referring to the row and column entry corresponding to this pair.

TABLE 1—RESPONSES TO DISPLACEMENTS FROM EQUILIBRIUM FOR THE MANAGERIAL MODEL

Variable	Parameter		
	$\epsilon$	$t$	$\bar{T}$
$X^0$	+	+	—
$S^0$	+	+	—
$M^0$	+	+	—

Actually the response to a change in the profits tax rate is not unambiguous. It can be shown that this response is separable into a net substitution effect and the equivalent of an income effect, where the net substitution effect is always positive and the income effect is always negative. The gross substitution effect is the combination of these two

<sup>8</sup> The procedure we use for obtaining the comparative statics responses is described in Paul A. Samuelson [22, pp. 12-14].

separate effects and hence depends on their relative magnitudes. Under reasonable assumptions, the gross substitution effect will be positive as shown in the table.<sup>9</sup>

### B. *Entrepreneurial Models*

The significance of these responses can best be discussed by comparing them to the corresponding results obtained from profit-maximizing models. Consider first the usual or single-period profit-maximizing model. As is well known, the equilibrium relations for this model require that the firm be operated so as to equate marginal gross revenue with the marginal costs of production and the marginal value product of staff with its marginal cost. The comparative statics responses are shown in Table 2.

TABLE 2.—RESPONSES TO DISPLACEMENTS FROM EQUILIBRIUM FOR THE SHORT-RUN PROFITS-MAXIMIZING MODEL

Variable	Parameter		
$X^0$	$\epsilon$	$t$	$\bar{T}$
	+	0	0
$S^0$	+	0	0

The differences between the models are more numerous than their similarities. Indeed, it is only with respect to the demand-shift parameter ( $\epsilon$ ) that the two return the same results, and even here the result is not identical. In addition to the increases in staff and output that the profit-maximization model shows, the managerial model also indicates that spending for emoluments will increase as  $\epsilon$  increases. Moreover, while the qualitative differences with respect to  $\epsilon$  are not great, quantitative differences may produce sharper discriminations. In general, a profits-maximizing firm will adjust to changes in business conditions within narrower bounds than the utility-maximizing firm. The absence of slack in its operations, as contrasted with the calculated accumulation (and decumulation) of slack by the utility-maximizing firm, is responsible for these quantitative differences.

A more general entrepreneurial model can be obtained by devising a multiperiod or discounted version of the profits-maximization hypothesis. The variables are subscripted by time periods by  $i$ , where  $i = 1, 2, \dots, n$ , and  $n$  is the planning horizon. Letting  $r$  be the discount rate, profits in year  $i$  will be discounted by  $1/(1+r)^{i-1}$ . Let this be represented by  $\alpha^{i-1}$ . We make the assumption that production decisions in

<sup>9</sup> Only when the firm is pressed very hard to satisfy its minimum-profits constraint is a reversal apt to occur.



TABLE 3—COMPARATIVE STATICS RESPONSES FOR THE DISCOUNTED PROFITS-MAXIMIZING MODEL

Variable	Parameter			
	$\epsilon$	$t'$	$t''$	$\bar{T}$
$X_1^0$	+	+	0	0
$S_1^0$	+	+	0	0

period  $k$  affect costs in no other period or, if there are effects, that these are offsetting. However, staff expenditures in period  $k$  are assumed to have a positive influence on future-period revenues over the entire planning horizon. Indeed, the length of the "period" can be defined as the interval beyond which current production decisions have no effect and the length of the planning horizon as the number of such periods for which current staff expenditures have a positive effect.

Letting  $\pi$  represent the discounted value of profits, the objective is to maximize:

$$\pi = \sum_{i=1}^n (1 - t)(R_i - C_i - S_i - \bar{T}_i)\alpha^{i-1}.$$

First-order conditions for a maximum are obtained by setting the partial derivatives of  $\pi$  with respect to  $X_1$  and  $S_1$  equal to zero. Thus we have:

$$(4) \quad \frac{\partial R_1}{\partial X_1} = \frac{\partial C_1}{\partial X_1}$$

$$(5) \quad \frac{\partial R_1}{\partial S_1} = 1 - \sum_{i=2}^n \frac{\partial R_i}{\partial S_1} \alpha^{i-1}.$$

Inspection of equation (4) reveals that the firm chooses that value of output for which the marginal gross revenue is equal to the marginal costs of production. Equation (5), however, shows that the current marginal value product of staff is less than its current marginal cost.<sup>10</sup> These equilibrium conditions are thus similar to those obtained from the managerial model.

Since the effects when the tax is levied for a period less than the planning horizon are different from those when the tax covers the entire horizon, the tax-rate effect is split into "temporary" (designated tax rate  $t'$ ) and "permanent" (designated tax rate  $t''$ ) types. The comparative statics responses for this model are displayed in Table 3.

Whereas the qualitative responses to a "temporary" change in the

<sup>10</sup> Over the entire horizon, however, the marginal value product of staff equals its marginal cost.

profits tax rate are identical to those obtained from the managerial model, a change in the "permanent" profits tax or the levy of a lump-sum tax (or bounty) produces no effect in the profits-maximizing organization. A response to both is predicted by the managerial model. Hence a discrimination between the hypotheses on the basis of comparative statics properties is potentially achievable.

## II. *Some Evidence*

Changes in either the profits tax or a lump-sum tax provide the most direct basis for distinguishing between the utility and profits-maximization theories. Testing the effects of a profits tax, however, requires that a rather advanced type of simultaneous-equations model be devised, while lump-sum taxes are hard to come by. The first of these carries us beyond the range of the present analysis, and only preliminary evidence on the effects of the lump-sum tax is available. (See Section B below.)

Fortunately other tests of a less direct but nonetheless meaningful sort can be devised. For one thing, the comparative statics implications are limited to qualitative responses; quantitative differences are neglected. If, therefore, significant quantitative differences between the two theories can be shown to exist, these can be used for making a discrimination where qualitative properties are identical.

Secondly, tests of particular behavior are available. Thus, the utility-maximizing theory is based on the proposition that opportunities for discretion and managerial tastes will have a decided impact on the expenditures of the firm. More precisely, those expenditures that promote managerial satisfactions should show a positive correlation with opportunities for discretion and tastes. The profit-maximizing theory is somewhat ambiguous on this question. Interpreted as a theory which attends entirely to the stockholders' best interests, it clearly implies that expenditures which, under the utility-maximizing hypothesis, will be positively correlated with measures of discretion and tastes, will instead be uncorrelated with these relationships. Interpreted somewhat more loosely, closer agreement with the utility-maximizing hypothesis can be obtained. Thus, it is possible that the management first selects that physical combination of factors that maximizes profits and then absorbs some amount of actual profits as cost. These absorptions may be correlated with the same measures of discretion and taste as would be expected under the utility-maximizing theory. Hence, evidence that managers respond to opportunities for discretion is not inconsistent with the profit-maximizing theory, but neither is evidence to the contrary; the theory is simply silent on this

question. However, the failure of firms to respond to opportunities for discretion constitutes a contradiction of the utility-maximizing hypothesis, while observations that firms do display expense-preference behavior supports it.

The executive compensation and retained-earnings analyses reported in Section A are designed to test for the effects of discretion and taste in management expenditure decisions. The summary of the field studies in Section B is concerned with the question of physical magnitudes of adjustment to adversity and provides some indication of what criteria are involved in making expense adjustments as well as what effects a lump-sum tax has on business behavior.

### A. *Principal-Firm Analysis*

If the firm is operated so as to attend to managerial interests, then the classes of expenditures for which expense preference was indicated should be expanded beyond the levels called for by strictly profit considerations. The amount by which such expansions occur should be positively related to the opportunity for discretion and the tastes of the management. More precisely, if  $X$  is an expenditure for which a positive expense preference exists,  $I_1$  is an index of the absence of competition,  $I_2$  is an index of management taste,  $I_3$  is an index of stockholder diffusion, and  $f(\pi)$  is the level of  $X$  which would be supported solely by profit considerations, then under the utility-maximization hypothesis:

$$X = f(\pi)g(I_1, I_2, I_3)$$

where

$$\frac{\partial X}{\partial I_i} > 0.$$

Under the stockholder version of the profits-maximization hypothesis, the partial derivative of  $X$  with respect to each of the  $I_i$  will be zero.

Since it is in the large corporation that manifestations of discretionary behavior are alleged to be important, and as complete data are most readily available among larger industrial firms than their smaller counterparts, the tests are restricted to those firms that clearly qualified as "principal firms." Among the 26 industries included in the analysis, selection was limited to the two largest firms, ranked according to sales, in each.<sup>11</sup> The tests performed are cross-section tests for the years 1953, 1957, and 1961.

<sup>11</sup> Although the sample is a purposive rather than a random sample, the results probably generalize to a somewhat larger population. Based on the 1962 *Moody's* listing of major industries (pages a-16 and a-17) 24 additional industries would be added to our list of 26 for a total of 50 major industries and, with two "principal firms" in each, 100 principal firms.

1. *Executive Compensation.* George Stigler has observed that the estimation of the effect of monopoly on profit may be complicated by the absorption of some fraction of "true" monopoly profit as cost. In particular, "the magnitude of monopoly elements in wages, executive compensation, royalties, and rents is possibly quite large" [28, p. 35]. Our interest here is limited to testing only a part of this hypothesis. Specifically, we examine the effects of discretion on compensating the top executive.

Focusing on a single representative of management might appear to restrict severely the relevance of our results. If the compensation of the rest of the management group were determined independently of that of the chief executive, this would certainly be the case. However, payments between executive levels are carefully scaled [3, p. 181] [15, p. 320] [25]. Hence, the factors that influence compensation to the top executive can be presumed to affect the level of staff compensation generally.

Under the utility-maximizing hypothesis, a positive expense preference towards emoluments exists. In particular, executive salaries should be correlated with the opportunities for discretion. Letting  $W_a$  be the actual salary of the management and  $W_c$  be the competitive salary, we have:  $W_a = W_c + (W_a - W_c)$ , where  $W_a - W_c$  is a measure of the monopoly returns withdrawn by the management (by virtue of its advantageous position) as economic rent.

As indicated above, the hypothesis that discretion influences expenses takes the form  $X = f(\pi)g(I_1, I_2, I_3)$  where  $f(\pi)$  is the expense incurred strictly on a profit-maximizing basis, and  $I_1$ ,  $I_2$ , and  $I_3$  are indices of the absence of competition, the tastes of the management, and the diffusion of the stockholders respectively. Specifying  $f(\pi)$  for purposes of studying executive compensation is somewhat difficult. A measure of hierarchical activity over which the executive in question has responsibility, together with the special abilities required for the position, probably measures this approximately. For the top executive, the level of hierarchical activity is effectively the entire staff structure. Thus let  $f(\pi) = f'(S, Z)$  where  $S$  is the level of staff (general administrative and selling expenses)<sup>12</sup> and  $Z$  is an index of special ability.

<sup>12</sup> Previous studies of executive compensation have used the total revenue of the firm for this purpose [17] [20]. This has the advantage of minimizing errors of measurement that arise from differences in accounting practice but is probably not as good a proxy for "staff" as is general administrative and selling expense. Sales are defective for two reasons. For one thing, they reflect activity at levels below the management hierarchy whereas the size effect would be expected to act largely within the hierarchy [25]. Secondly, interfirm comparisons are complicated by differences in vertical integration policies. As a matter of curiosity, regressions replacing general administrative and selling expense by sales were run—with uniformly adverse results. The objections to using gen-

We assume that the index of competitive pressure ( $I_1$ ) is reflected by the concentration ratio and the entry barrier in each industry. The concentration ratio reflects the influence of realized interdependencies between rivals. Where concentration ratios are high, interdependencies will generally be intimate, and behavior between rivals will at least be circumspect and may involve explicit agreements. In either case, the influence of competition will be consciously controlled. Hence, an increase in the concentration ratio will tend to widen the opportunities for managerial discretion. Obviously, this measure is defective and there will be exceptions. However we are content merely to account for average rather than exceptional behavior.

The barrier to entry measure, as developed by Joe S. Bain [2], is explicitly designed to estimate the extent to which firms are insulated from the effects of competition. Although concentration and entry conditions are correlated, they are by no means identical. In combination they provide a particularly good measure of the opportunities for discretion. High concentration together with a high barrier to entry will tend to produce substantial discretion, for not only is potential competition limited, but existing rivals are few enough to appreciate their conditions of interdependence. Low values for each of these measures will tend to produce the reverse effect, while mixed values, presumably, give rise to mixed effects.

To allay any suspicion that the concentration ratio and entry barriers are merely another measure of size, it might be noted that the product moment correlations between the logarithm of sales and the logarithms of "staff," concentration, and barriers (for the firms included in the sample) are about .75, —.13, and —.14 respectively. Quite clearly these latter two correlations are small enough that if concentration and barriers have an effect on compensation, it is not primarily due to their relationship to size.

A sharp measure of managerial tastes ( $I_2$ ) is not available. However, the composition of the board may act as a proxy measure of the extent to which management desires to operate the firm free from outside interference. Although low proportional representation of the management on the board of directors need not reflect a "taste" for active outside participation in the affairs of the firm, clearly a high internal representation does reflect the intent of the management to conduct the

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eral administrative and selling expense as a proxy for hierarchical expense are largely related to differences in accounting practice among firms. However, the components of general administrative and selling expense very nearly give us a measure of the level of staff activity in the firm (for a list of the functions usually included see [31, Chs. 17 and 18]). Amounts charged to these accounts are, for the most part, current costs, and hence ambiguities arising from the use of historical costs are reduced.

affairs of the firm free from such outside influence. We hypothesize that, as the management representation on the board increases, there tends to be a subordination of stockholder for managerial interests. In this sense, the composition of the board reflects management's attitude toward discretionary resource allocations and a voluntary change in composition reflects a change in these "tastes."

An estimate of stockholder diffusion ( $I_3$ ) was not obtained. Such a measure would probably be correlated with the composition of the board variable. However the association may not be great. Where substantial concentration of ownership exists, there is frequently a tendency towards nepotism. This in turn may produce high internal representation rather than the high outside representation that would otherwise be predicted. If in fact the correlation were zero (and there were no other neglected variable to consider), our estimate of the composition effect would be unbiased. As it is, some bias may result from the lack of a diffusion measure.<sup>13</sup>

The effects of each of the independent variables on executive compensation should be positive. In addition, they are assumed to be multiplicative. Thus we assume that:

$$(6) \quad X_i = \alpha_0 S_i^{\alpha_1} C_i^{\alpha_2} H_i^{\alpha_3} B_i^{\alpha_4} U_i$$

where

$X_i$  = compensation of the top executive

$S_i$  = administrative, general, and selling expense (i.e., "staff")

$C_i$  = concentration ratio in the industry

$H_i$  = height of the barrier to entry in the industry

$B_i$  = composition of the board

$U_i$  = a random error term<sup>14</sup>

and the subscript  $i$  refers to the  $i^{\text{th}}$  firm in the sample.<sup>15</sup>

<sup>13</sup> Alternatively, the composition of the board variable might be interpreted as reflecting the *joint* effects of management tastes and stockholder diffusion. What is really needed, however, are sharper measures that reflect each of these effects separately.

<sup>14</sup>  $U_i$  includes the effects of special abilities (the  $Z$  variable mentioned above), the omitted stockholder-diffusion variable, numbers of years the top executive has held that position, and other neglected factors.

<sup>15</sup> The number of observations for each of the years was 26 in 1953, 30 in 1957, and 25 in 1961. Inability to use all 52 of the firms studied (as in the second set of tests reported here) was largely due to the lack of estimates on the condition of entry for many of the industries. The sources of the data were as follows:

Executive compensation: as a matter of law, publicly held corporations are required to report executive compensation to the Securities and Exchange Commission. Although these data are a matter of public record, they are not readily available. *Business Week*, however, annually publishes executive compensation figures for a group of principal firms. It was from this source that the data on compensation were obtained.

General administrative and selling expense and composition of the board: both were obtained from *Moody's Industrials* (supplemented occasionally by other sources when the listing of officers in *Moody's* was incomplete).

Taking logarithms of both sides of the equation and using these data to obtain least-squares estimates of the net regression coefficients, we obtain the results shown in Table 4.

The signs for each of the parameters in all three years are as predicted by the expense-preference hypothesis. Moreover, with the exception of the composition of the board coefficient, which is significant at the 10 per cent level only in 1957, all of the regression coefficients are highly significant—two-thirds being significant at the 2.5 per cent level.<sup>16</sup> Whereas the relation of executive compensation to general administrative and selling expense (i.e., "staff") is almost certain to be positive and significant, there is no reason to believe that the measures of taste and discretion that we introduce should have the effects shown (unless one endorses the view that management responds to opportunities for discretion in the ways indicated). Since the compensation of the chief executive generalizes to the entire staff structure, these results have broad significance for the resource-allocation process within the business firm. Furthermore, we would expect that these same measures of discretion would produce similar effects over the entire range of expenditures on emoluments.

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Concentration ratios: data on concentration for 1953 were developed from the 1954 concentration ratios for the four largest firms reported in *Concentration in American Industry* (Washington, D.C., 1957). Concentration data for 1957 and 1961 were developed from the 1958 concentration ratios for the four largest firms reported in *Concentration Ratios in Manufacturing Industry 1958*, Pt. I (Washington, D.C., 1962). A weighted average of several of the SIC industry groups was sometimes used to arrive at a concentration ratio for the industries in question. Although such weighting procedures can produce distortions, this is probably not too serious in reasonably narrowly defined industry groups.

Barrier to entry: Bain's study [2] provided the estimates of the height of the barrier to entry. In addition, I took the liberty of classifying textiles as an industry with a low entry barrier since Bain did not include textiles in his analysis, but there is general agreement that the industry has a low entry barrier. A dummy variable which took on the value 1 ( $\ln 1 = 0$ ) when the barrier to entry was low and  $e$  ( $\ln e = 1$ ) when the barrier was high or substantial was used in the regressions. Two dummy variables to represent the substantial and high entry conditions separately were also tried. Although one might suppose that the parameter for the high-barrier dummy would exceed that of the substantial-barrier dummy, the results were somewhat mixed. As I have suggested elsewhere, however, the principal difference between a substantial and high barrier may be that in the former case the firm expands selling expense beyond its optimal level in order to discourage entry, with the result that the effective condition of entry is the same in substantial- and high-barrier industries [35]. The question requires additional empirical investigation.

A list of the firms and industries included in the executive compensation and retained earnings analyses can be obtained from the author upon request.

<sup>16</sup> The tests are one-tailed tests, which are appropriate since the hypothesis specifies that the signs should be positive (which they are). The standard errors shown are corrected for the finite population correction  $\left(\frac{N-n}{N}\right)^{1/2}$ , where  $N$  is 100 in all years and

$n$  is 26, 30, and 25 for 1953, 1957, and 1961 respectively.

Whether the results apply to a larger group than these 100 principal firms remains a subject for subsequent investigation.

TABLE 4—REGRESSION OF EXECUTIVE COMPENSATION ON "STAFF," CONCENTRATION RATIO, COMPOSITION OF THE BOARD, AND BARRIERS TO ENTRY

	Year		
	1953	1957	1961
<b>"Staff"</b>			
Coeff.	.228 <sup>a</sup>	.240 <sup>a</sup>	.218 <sup>a</sup>
S.E.	.061	.052	.054
Partial	(.564)	(.610)	(.614)
<b>Concentration</b>			
Coeff.	.503 <sup>a</sup>	.513 <sup>a</sup>	.422 <sup>b</sup>
S.E.	.157	.143	.152
Partial	(.517)	(.517)	(.470)
<b>Composition</b>			
Coeff.	.137	.139	.053
S.E.	.118	.101	.120
Partial	(.213)	(.224)	(.084)
<b>Entry Barriers</b>			
Coeff.	.446 <sup>a</sup>	.221 <sup>b</sup>	.200
S.E.	.110	.114	.126
Partial	(.606)	(.307)	(.290)
Coeff. of Correl. (adjusted)	.786	.724	.687

<sup>a</sup> Significant at the 0.1 per cent level

<sup>b</sup> Significant at the 2.5 per cent level

Of course it could be argued that the concentration ratio and entry-barrier variables have positive regression coefficients because they are correlated with the profit rate—that this profitability effect is responsible for the results obtained. But obviously the causality runs from concentration and entry barriers to profits rather than the reverse. Thus, by focusing on the market structure, the model directs attention to the ultimate determinants of discretionary behavior (competition in the product market) rather than the apparent determinant (the profit rate). Although these market variables might not perform as well as the profit rate among the smaller firms in the industry, it does not seem inappropriate to use them for studying the behavior of the two largest firms where the relationship between market structure and behavior is probably reasonably direct. Indeed, it is of interest to note that: (1) if the profit rate on the stockholders equity is substituted for the concentration ratio and entry-barrier variables, the coefficient of determination ( $R^2$ ) falls to two-thirds of the value obtained using these market variables in 1953 and 1961, and yields less than a ten per cent increase in  $R^2$  in 1957; (2) if the profit rate, concentration ratio, and entry-barrier variables are all included, the profit rate is significant only in 1957 and has the wrong sign in 1961, while the concentration



ratio and entry-barrier variables remain significant at the ten per cent level or better in every year.

Although the profit rate might perform better if a weighted average were used instead of current values, the argument offered above that this is an apparent rather than the ultimate determinant of behavior still applies. Moreover, the appropriate estimate of the profit rate is the actual rather than the reported rate. But the actual rate is unknown if, as the evidence above suggests, some fraction of actual profits is absorbed as salary and perquisites.

Some feeling for the responsiveness of salary to the independent variables in the regression equation can be obtained by taking the median of the estimates for each parameter and finding the effect on salary of increasing each individual independent variable by a factor of two. In some gross sense we can expect that executive salaries will possibly increase on the order of 17 per cent if the level of staff activity were to double, on the order of 41 per cent if the concentration ratio in the industry were to double, on the order of 10 per cent if the internal representation on the board were to double, and on the order of 25 per cent if the industry of which the firm was a part had a substantial or high barrier to entry rather than a low one. Thus, not only are the signs as predicted by the theory, but the magnitudes are sufficiently large to render somewhat doubtful the contention that discretionary effects are unimportant.

2. *Earnings Retention.* The composition of the board variable was used in the executive compensation model to reflect the "tastes" of the management for discretion. Internal representation on the board acts as a proxy for the attitude of the management towards outside influence. As the proportional representation of management on the board increases, it is assumed that stockholder interests tend to be subordinated to managerial objectives. This was manifested in the executive compensation regression by the positive regression coefficient associated with the composition of board variable.

A second test for this effect is to examine the relationship between composition of the board and earnings-retention policy. Consistency with our model requires that the earnings-retention ratio be directly related to the composition of the board. This follows since retained earnings are a source of discretion and a high internal representation provides the opportunity for management to shift the dividend policy to its advantage.

Alternative theories of the firm that regard managerial objectives as unimportant implicitly predict that there will be no association between the composition of the board and retention policy. Thus, our hypoth-

esis of a direct association is tested against the null hypothesis of no association.

Earnings retention will, of course, be responsive to a number of considerations other than that of the composition of the board. Most important, investment opportunities will differ between industries and these could easily be overriding. If it can be assumed that the firms in the same industry have identical opportunities, however, these effects can be neutralized.

A paired-comparison technique was used to neutralize the industry effects. That is, between the two principal firms in each of the 26 industries we compare the composition of the board and earnings-retention ratio. The random variable can take on either of two values: 1 if

TABLE 5—BINOMIAL TEST FOR ASSOCIATION BETWEEN COMPOSITION OF BOARD AND EARNINGS-RETENTION POLICY

	1953	1957	1961	All Years
Number of observations	25	26	26	77
Expected number of positive occurrences under the null hypothesis	12.5 ( $p = .50$ )	13 ( $p = .50$ )	13 ( $p = .50$ )	38.5 ( $p = .50$ )
Actual number of positive occurrences	13.5 ( $\hat{p} = .54$ )	16 ( $\hat{p} = .62$ )	18 ( $\hat{p} = .69$ )	47.5 ( $\hat{p} = .62$ )
Probability that a value as high as observed would occur if the null hypothesis were true <sup>a</sup>	.34	.13	.02	.02

<sup>a</sup> Normal approximation to the binomial was used to obtain the probabilities that the null hypothesis would produce the results observed.

the higher internal representation is paired with the higher earnings-retention ratio, and 0 otherwise. Hence it is distributed as a binomial. Under the hypothesis that no association exists, the expected number of times the positive association will occur, divided by the total number of observations, is one-half. Thus the null hypothesis is that the binomial parameter  $p$  is .50. Our model, however, predicts that the positive association will occur more than one-half of the time—i.e., that  $p$  exceeds .50.

The results for each of the three years as well as the pooled results for all three years are shown in Table 5. The proposition that internal representation has no effect on the earnings-retention policy between pairs of firms in the same industry is unsupported by the data. In every year the proportion of positive observations exceeds .50. In 1953 and 1957 the probability that a value as high as that observed if the null hypothesis were true is .34 and .13 respectively, and in 1961 this drops

to .02. Clearly we are inclined to reject the hypothesis in favor of the alternative suggested. That is, due to the discretion associated with the retention of earnings and the opportunity to influence the retention policy which arises from representation on the board, the relation that we suggested (namely, that between pairs of firms in the same industry, the higher the internal representation, the higher the earnings retention rate) is supported by the data. Although it is possible that the composition of the board is acting only as an intervening variable and that the real explanation for this association lies elsewhere, no simple connection suggests itself.

The strongest evidence in favor of our hypothesis is provided by the pooled results for all three years. Here the observed number of positive occurrences would appear by chance under the null hypothesis with a probability of only two times in a hundred. Before the pooling of the observations can be justified, however, it is first necessary to establish that the observations are independent and that the association observed in one period is simply not carried over to the following period. Since the composition of the board and earnings-retention decisions reflect policy considerations that exhibit continuation in consecutive years, lack of independence between consecutive years would be expected. On the other hand, our observations are separated by a period of four years. The association between consecutive years may well be eliminated over this interval. Since the issue can scarcely be resolved on a priori grounds, we submit the hypothesis that the observations are independent to test.

A chi-square test for association was used. A low value of  $\chi^2$  is consistent with the hypothesis that the observations between successive four-year intervals are independent. The value of  $\chi^2$  between 1953 and 1957 is .0065, and between 1957 and 1961 is .62. Sampling randomly from independent populations, values as high or higher than this would occur 95 per cent and 45 per cent of the time respectively. Hence the hypothesis of independence is supported, the pooling of the observations is justified, and the best test for the composition of the board effect is that of all three years combined. Here the possibility that the positive association observed has occurred by chance is only .02. Indeed, among pairs of principal firms we can expect that the firm with the higher internal representation on the board of directors will have a higher earnings-retention ratio about three-fifths of the time.

The above results are limited to directional effects only and say nothing about the magnitudes involved. This is probably all that the data justify. However, a crude estimate of the quantitative effect is available by an application of the general model suggested above for studying discretionary expenditures. Thus let

$R_{ik}$  = the retained-earnings ratio

$\rho_k$  = the rate of return on investment available to principal firms

$C_k$  = the concentration ratio

$H_k$  = the entry barrier

$B_{ik}$  = the composition of the board of directors

$V_{ik}$  = a random-error term<sup>17</sup>

The subscript  $i$  refers to the firm, and the subscript  $k$  refers to the industry of which the firm is a part. Then, assuming the relation is multiplicative, we have:

$$(7) \quad R_{ik} = \beta_0 [f(\rho_k)]^{\beta_1} C_k^{\beta_2} H_k^{\beta_3} B_{ik}^{\beta_4} V_{ik}.$$

Taking the ratio of retained earnings between the  $i$ th and  $j$ th principal firms in the same industry yields:

$$(8) \quad \frac{R_{ik}}{R_{jk}} = \left( \frac{B_{ik}}{B_{jk}} \right)^{\beta_4} V'.$$

Taking logarithms of both sides of the equation, the value of  $\beta_4$  can be estimated by least squares. The resulting estimates for 1953, 1957, and 1961 are .17, .17, and .16 respectively, but only the 1957 estimate is significant at the 10 per cent level.<sup>18</sup> These estimates suggest that the retained-earnings ratio would increase by about 12 per cent if the internal representation on the board of directors were to double.

A tenuous connection between the composition of the board and the investment policy of the firm can be obtained by noting the results obtained by Myron Gordon and M. Fg. Scott in their recent studies of investment financing. Gordon remarks that "The really surprising result is produced by return on investment. . . . In both industries there is a statistically significant tendency for the retention rate to fall as the corporation's rate of return increases. We must conclude that either

<sup>17</sup> Neglected variables that may influence the retained-earnings policy include liquidity measures (such as the current ratio) times interest earned and other financial variables. Among principal firms in the same industry, such measures tend to display substantial stability.

<sup>18</sup> Since the estimates are sensitive to extreme values of retained earnings (values of  $R_{ik}$  greater than .95 or less than .05), and since such extreme values ordinarily represent a transitory condition, these extreme values were removed in making the estimates. Thus the estimated values of  $\beta_4$  apply to the range of retained earnings between 5 and 95 per cent.

Actually, there is little theoretical reason for including the product market variables in the retained-earnings regression. They are included primarily for the purpose of indicating how variables common to both firms can be eliminated by using the ratio device. It is of some interest to note, however, that the estimate of  $\beta_4$  obtained using only those industries with a high concentration ratio ( $> 50$ ), exceeds that obtained from industries with a low concentration ratio ( $\leq 50$ ) in all three years.

[our estimate] is a poor measure of rate of return on investment or that corporations are not primarily influenced by the price of their stock in setting dividend rates" [11, pp. 231-32]. And Scott, in a somewhat more broadly based study of dividend policy, observes that the "negative correlation of  $-.30$  between undistributed profits . . . and the subsequent growth of earnings . . . is somewhat surprising. It suggests that stockholders . . . might benefit from more generous dividend distributions" [24, p. 244]. For a theory that makes the firm's objectives identical with those of the stockholders, such a result is somewhat disquieting. For an approach such as ours, however, which allows for the subordination of stockholder to managerial objectives, a possible explanation for these results based on the composition of the board analysis can be easily provided.

As was suggested above, high internal representation on the board of directors favors attention to managerial objectives, and this is manifested in a high earnings-retention rate. The funds thus provided are available to the management for the pursuit of expansionary objectives, and the resulting investment, being based on a combination of profit and expansionary goals, will exceed the amount dictated by profit considerations alone. As a result, the average rate of return in firms whose management is inclined to subordinate stockholder objectives can be expected to fall below that in firms where management interests are more nearly those of the stockholders.<sup>19</sup> Thus the tastes of the management, as revealed originally in the composition of the board, make their influence felt through the earnings-retention policy and thence on the return on investment. Where these tastes favor expansion, there is an adverse effect on the rate of return on investment. This indirect implication of our theory is precisely the result that Gordon and Scott report. Although conjectural, it suggests the value of including a "taste" variable, of which the composition of the board is a somewhat imperfect proxy, in future studies of the investment decision.

### *B. The Evidence from the Field Studies*

Simon has pointed out that "neither the classical theory of the firm nor any of the amendments to it or substitutes for it . . . have had any substantial amount of empirical testing" [27, p. 8]. To remedy this he offers several proposals, one of which is the intensive interview. This has the advantage of permitting detailed observations that are unavail-

<sup>19</sup> In addition to the quantity of funds invested and diminishing-rate-of-return effect, there may also be political influences to consider [9]. As the amount of available resources increases, the importance of political relative to economic criteria will tend to increase. Any such a shift toward political considerations naturally has an adverse effect on the rate of return on investment.

able in the ordinary survey, and these may provide insights into the ways in which the firm perceives its problems and the processes it employs in responding to them.

Unfortunately, field study observations are difficult to summarize. Their relevance derives largely from their detail, and, since the observations are few in number, statistical tests are often inappropriate. The field studies reported here are precisely of this kind. They nonetheless produce insights that would be difficult to obtain by other means. Of principal interest from our studies of the response of firms to adversity are the following:

1. In the face of a sharp drop in profitability, hierarchical expenses typically undergo extensive curtailment. One firm, after a long period of operating in a seller's market, responded to a sharp fall in profits with the following adjustments [33, pp. 5-11]: (a) salaried employment over the entire organization was reduced by 32 per cent; (b) headquarters employment was reduced by 41 per cent; (c) the research and development staff was reduced from 165 personnel to 52 and much of its work was redirected to commercial R and D organizations; (d) the personnel and public relations staff was streamlined from 57 to 7; (e) a general reduction in emoluments of all kinds was realized. All this occurred with production unchanged. Return on investment over the interval was increased from the 4 per cent level to which it had fallen to 9 per cent. Further cutbacks in some areas are expected; additions are contingent on changes in volume and are tied to a new set of long-range plans.

Both the type and magnitude of these reductions suggest that the managers were operating the firm so as to attend to other than merely profitability goals in the period preceding the earnings decline. Invoking the notions of expense preference and discretionary spending makes it possible to provide an uncomplicated explanation for the adjustments observed.

2. The philosophy of management in instituting cutbacks is of particular interest. The chief budgeting officer in one organization made this observation [33, p. 13]:

In any large organization, certain plants or departments will have found ways to habitually operate more efficiently than others. This may be due to *competitive pressure* which has historically been felt in some products to a greater extent than others. It may be due to differences in *individual management philosophy*. . . . It follows . . . that any approach toward an arbitrary management dictate for an across-the-board slash in all cost areas will inevitably damage necessary functions in some areas, and leave remaining inefficiencies in others.

As a result, cost reductions were tailored to the individual divisions—taking their competitive history and management philosophies into account. Whereas such behavior is consistent with the managerial model, it is less clear that it should occur in a profit-maximizing organization.

Related observations of interest were the way in which headquarters overhead was allocated to achieve the effects of a lump-sum tax [33, pp. 53-58] and the discretion that the division management was permitted in the allocation of any earnings in excess of the assigned profit goal [33, pp. 26-28]. In both respects, the behavior observed is readily accommodated by the managerial model but is not easily explained by the profit-maximizing hypothesis. In addition, the business literature abounds with descriptions of behavior that generally conform to those cited above.<sup>20</sup>

The detail revealed by the field studies, like the relationships found from the principal-firm analyses, suggests that, in order to explain and predict what appears to be a nontrivial range of business behavior, it may be necessary to make managerial objectives an integral part of the analysis. To treat them otherwise is to require *ad hoc* explanations for behavior which, broadly conceived, may be entirely rational and hence subject to systematic analysis and routine explanation.

### *III. Application to Regulated Industries*

Armen Alchian and Ruben Kessel have recently argued that the presence of a regulatory constraint in the form of a maximum allowable rate of return tends to encourage expenditures on emoluments and other items that yield managerial satisfactions [1]. That is, if above-normal profits cannot be long continued and if supernormal profits will almost certainly invite the early attention of the regulatory commissions, the management of a regulated firm has an incentive to hold profits at or below some "safe" level by absorbing profits through expanding satisfaction-producing expenses. Alchian and Kessel argue that the behavior of these firms is best analyzed by substituting a general preference function for profits.

Although they do not formalize their argument, the effects they describe appear to be largely in accord with those obtained from the model that we have proposed. Thus, if the utility-maximization model is augmented to include a maximum-profit constraint, it is easily shown that, when the firm encounters the region bounded by the constraint, the profit component in the utility function becomes fixed at this allowable maximum value, and expenditures on staff and emoluments will be

<sup>20</sup> For recent surveys on such behavior, see [10] [29] [32].

increased to assure that this condition is not violated [34]. This is precisely the behavior they describe. Rather than generalize their argument, however, they restrict the application of their analysis to regulated industries (or others similarly confronted by a maximum-profit constraint—such as firms facing potential antitrust action). In all other circumstances, they claim, competition in the product market or competition in the capital market will remove any opportunities for such nonprofit behavior [1, p. 160].

The position that competition in the product market will render impotent any tendencies to promote nonprofit expenditures is quite unassailable. The mechanism of natural selection enforces conformance to the profit-maximizing norm. However, their belief that, in the absence of competition in the product market, the capital market will assign monopoly powers “to those who can use them most profitably” [1, p. 160] lacks an equally efficacious enforcement mechanism. It requires that effective control of monopoly power reside with the stockholders and that this be transferable through financial (capital market) rather than by political (managerial) processes. It has been widely recognized, however, and it has been the force of our argument and evidence above, that the management, and not the stockholders, is in effective control of the monopoly power in the business firm,<sup>21</sup> and the transference mechanism is one of executive ascension rather than financial exchange. Subject to loose performance constraints imposed by the capital market (both the stockholders and the firm’s creditors), the management is largely free to exercise the monopoly power that the firm possesses at its own discretion. Thus, while we fully agree with the Alchian-Kessel discussion on nonpecuniary motives and their suggestion that profits be replaced by a general preference function, we would suggest that regulated industries are merely a special case of the general case where competition in the product market—for reasons of concentration, conglomerate bigness, or barriers to entry—is weak.

#### IV. *Conclusions*

Based on the twin assumptions of self-interest and rational behavior, a general approach for introducing managerial objectives into a theory of the firm has been suggested. The notion of expense preference constitutes a critical part of the argument. It provides the essential connection for relating managerial objectives to operating behavior.

In addition to the comparative statics properties that were investigated, the managerial model also provides identical qualitative re-

<sup>21</sup> Edward S. Mason, for example, takes the position that “almost everyone now agrees that in the large corporation the owner is, in general, a passive recipient; that typically control is in the hands of management; and the management normally selects its own replacements” [19, p. 4]. See also [12, pp. vi-x] and [21].



sponses to those of the profits-maximizing model with respect to a sales tax (of either the specific or ad valorem variety). Thus the utility-maximization hypothesis preserves the main theorems of the profits-maximization hypothesis with respect to shifts in demand and application of a sales tax. Indeed, since there is little dispute concerning the general validity of these implications of the classical theory, it would be distressing to have the managerial model predict differently. However, when it comes to matters where the qualitative implications of the profits-maximizing model have been somewhat suspect, namely the effects of a profits tax and a lump-sum tax, the managerial model registers responses that contradict the classical theory.

The evidence presented is clearly suggestive rather than definitive. Such as it is, it generally supports the implications of the utility-maximization approach. Although it is not strong enough to provide a discrimination between the utility- and profits-maximizing theories, it does suggest that either firms are operated as indicated by the managerial model or, if "actual" profits are maximized, that reported profits are reduced by absorbing some fraction of actual profits in executive salaries and possibly in perquisites of a variety of sorts. This raises a serious question whether studies of monopoly power based on reported profits provide an accurate estimate of the effects of monopoly. It is possible that a nonnegligible part of true monopoly profits is absorbed internally.<sup>22</sup>

If subsequent results confirm the present findings concerning the effects of internal representation on the board of directors on executive compensation and dividend policy, the case for an independent board becomes much more compelling. Although Gordon has already argued this position persuasively [12, pp. 343-51], the reasoning has lacked empirical support and there is little indication that his views have been heeded.

A continuing investigation of the effects of discretion on managerial behavior would appear to be warranted. Indeed, we could not agree more with Becker's view that the economist *can* provide nonpecuniary motives with economic content and that "progress in this field has been hindered not so much by an intractable concept as by the economists' reluctance to take the concept seriously" [8, p. 179].

<sup>22</sup>The results obtained by Gary S. Becker in his study of the effects of monopoly on discrimination [7] also support this proposition.

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