CONTROL TYPE, PROFITABILITY, AND GROWTH IN LARGE FIRMS : AN EMPIRICAL ANALYSIS

by

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NUMBER 10

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I INTRODUCTION

The managerial theories of the firm[1] emerged from a long period of criticism and controversy over the 'traditional' theory of the firm, the essence of which, derived from neo-classical theory, was profit-maximization. They start from the discretion allowed to management by the divorce of ownership and control and the dispersal of share ownership[2]. To this is added a theory of managerial motivation in which the major goals of management include variables other than profits : given a situation of managerial discretion, this is expected to lead to a pattern of behaviour among modern management-controlled firms different from that suggested by traditional theory. A number of influential writers[3] have gone further than this, suggesting that traditional capitalism has been replaced as an economic system by 'managerial capitalism' or 'managerialism', because of the critical importance in an economic system of the decisions of the controllers of capital.

This paper takes Marris' version[4] of the managerial theory of the firm as its starting point, and examines the differences in long-run performance between large firms under owner- and management-control in the U.K. Marris argues that the motivations of managers lead them to aim for maximum growth rather than maximum profits, but the residual power of the capital market leads to a constraint on their behaviour which amounts to a minimum profits constraint. Thus the key variables to be considered are the long-run average rates of return and of growth.

Figure 1 shows, for a simple Marris model, the possible combinations of growth and profit rates available to the firm[5].

Very briefly, the 'demand growth' curve shows that as the firm attempts to expand demand for its products (by increasing its product range and by proper pricing and marketing policies) it will initially obtain a higher rate of profit, but eventually profit margins, and hence the profit rate, are squeezed by the need to lower prices and/or increase selling expenses still further, and by diminishing returns to the development and introduction of new products. The 'supply of capital' curve shows the maximum growth rate of capacity at each level of the profit rate: assuming that maximum gearing and minimum liquidity are maintained (both being constrained for security reasons), the relation is linear and upward-sloping if the maximum retention ratio (limited by the need to satisfy shareholders' demand for dividends) is adopted. New

issues are here ignored, but they do not change the essentials of the model.

On the assumption that owners' utility is measured by profits, owner-controlled firms can be expected to choose from the feasible set of profit/growth combinations (the shaded area in figure 1) a point somewhere between P and G on the demand-growth curve: it will only be at P if the owners have no interest in capital gains or future profit growth, but only at G in the unlikely case of a perfect stock market (see Appendix A). Management-controlled firms, on the other hand, will aim for the point G, which maximizes the growth rate of the firm's assets.

In a cross-sectional analysis of the performance of firms of the two control types, we would expect to find, therefore, that owner-controlled firms, aiming more for profits and less for growth as compared to management-controlled firms, would, ceteris paribus, show lower growth rates and higher profit rates. Given that there is a well-established positive relation between these two variables[6], we would expect also that the slope of this relation would be different for the two control types; in the profit/growth plane as in figure 1, the relation would be steeper for owner-controlled firms.

II Control and Performance: Some Empirical Findings

The Sample

In choosing the sample of firms, the main problem was how to allow for other factors which might be expected to affect performance. The chief factors cited by most writers as affecting profits concern market structure, and the growth rate of market demand[7]. The usual practice is to incorporate these factors by using such measures as concentration ratios, barriers to entry, and the rate of growth of industry sales, with the firms classified into industries at the level (2-digit or 3-digit) for which such measures are available: this method was used, for example, by Kamerschen[8] in investigating the relation between profit rates and type of control. The main difficulty is that firms, and particularly large firms, frequently do not fit neatly into particular industries. Using a 3-digit classification involves including many firms much of whose activities lie outside those industries to which they are classified, while a 2-digit classification includes a wide variety of market types in terms of both structure and demand growth. There is the additional problem that high concentration ratios or barriers to entry may be the result of high profit rates in the past. An alternative approach is to use industry dummy variables to pick up these inter-industry differences. Because of the unavailability of reliable measures of industrial structure for the U.K., this was adopted here, although it is subject to the same reservations on the meaningfulness of industrial classification and the problem of feedback.

The other requirements for the sample were a reasonable number of observations for each industry, and a reasonable spread of market conditions between the industries. The sample finally chosen, using the Board of Trade's 'Company Assets, Income and Finance in 1963', consisted of all firms with more than £5m. net assets in three 2-digit industries, food, electrical engineering and textiles: the total number of firms in the sample was 89, split fairly evenly between industries. The period covered was 1957-1967, the choice being dictated by the availability of data, coupled with the desire to measure long-run performance.

The Data

In preparing the data, the first step was to classify these firms into owner-controlled and management-controlled. This was done by going through the list of shareholders filed with Companies House for 1957 and 1967, listing all large holdings and noting such things as non-voting ordinary shares, special preference shares, etc. For a number of firms, share registers were not readily available, but in all cases but one it was possible to classify them on the basis of the information on directorial shareholdings which companies are required to divulge under the 1967 Companies Act. It was felt that it was not appropriate to use a precise measurement of the percentage of the voting shares held by the largest interest group in order to separate the two control types, as Berle and Means did;(9) the approach followed was similar to that of Sargant Florence,(10) though less exact. In general, companies in which there was a definable interest group holding more than 15% of the voting shares were classed as owner-controlled, and where the proportion was less than 5%, as management-controlled.(11) Information on the composition of the board of directors and their shareholdings, and the extent to which large owners held executive posts, was used both to confirm the classifications by share concentration and where possible to allocate the firms in which the largest interest lay between 5% and 15%: this information was taken from annual reports filed with the share registers. Although there was a clear decline in vote and share concentration over the period, few firms could be regarded as moving from one type of control to the other; but 14 of the 88 followed a common pattern in which the original family interest was declining, often to a very low level, and these interests were gradually detaching themselves from active management: these firms were all classified as transitional. The results of this classification, together with the proportion of net assets in 1963 represented by the firms in each category, is given in table 1. Comparing the three industries, the food industry has the highest proportion of firms under owner-control, and a slightly higher proportion of assets; the textile industry has the lowest proportion of firms under owner-control, but a tiny proportion of assets, (with all firms of more than £20m. net assets under management control); the electrical engineering industry lies between the two.

Table 1 : Distribution of firms and net assets by type of control and industry

	Food		Electrical Engineering		Textiles		Total	
	No. of firms	% of net assets	No. of firms	% of net assets	No. of firms	% of net assets	No. of firms	% of net assets
Owner-control	12	48.0	8	18.9	8	7.7	28	24.9
Management-control	10	26.4	14	70.0	18	85.8	42	60.7
Transitional	6	22.6	3	9.6	5	6.5	14	12.9
Legal device*	1	3.0	1	1.5	-	-	2	1.5
Total	29	100.0	26	100.0	31	100.0	86	100.0

* The food firm has only a small part of its ordinary stock enfranchised; the engineering firm has control by pyramiding.

The performance data for the firms was taken from files made available by the Company Statistics department of the Board of Trade. These files cover nearly all quoted companies, and contain a very wide range of financial data in standardized form, adapted from the companies annual reports. The key variables extracted for each company were a ten-year average rate of growth of net assets, and a ten-year average rate of return. In measuring growth of net assets, detailed financial data from the Board of Trade files were used to correct for the distortions in reported net assets arising from revaluations and takeovers.(12) The average rate of return was measured by dividing the ten-year total net income (gross profits before tax, less depreciation) by the ten-year sum of annual net assets figures.

Results: the relationship between profit, growth and control

Before considering the regression analysis performed on the data, Table 2 presents mean values of the profit rates and growth rates averaged over ten years for all the firms for which sufficient data were available. In some cases, the period covered is less than 10 years, usually because the firm concerned was taken over between 1963 and 1967. Although this biases these and later results in so far as profit and growth opportunities may have been different for this period compared to 1957-63, to exclude these firms would also cause bias, since with one exception theywere taken over precisely because they performed badly.

Regression analysis was used in order to find out how far differences in profit rates could be explained by differences in growth rates, opening size, control type and industry structure. Of these, growth rates and control type are directly relevant to the hypothesis being tested; opening size is included since previous investigations(13) have found it to be related somewhat to profit rates, and likewise industry structure. In the equations, growth and profit rates are used as calculated from the basic data, opening size is measured by assets in £m. in 1957, control type by a dummy variable taking the values 1 for owner-control and 0 for management-control, and industry structure, as noted above, also by dummy variables, one each for electrical engineering and textiles. Only those firms which were clearly classifiable as owner-controlled or management-controlled are included: the maximum number of observations was 68. The

Table 2 : Average ten-year growth and profit rates, by industry and control type

	Food		Electrical Engineering		Textiles		All Firms	
	Profit Rate	Growth Rate	Profit Rate	Growth Rate	Profit Rate	Growth Rate	Profit Rate	Growth Rate
Owner-control	14.58	9.44	19.68	12.14	16.98	10.05	16.81	10.42
Management-control	16.49	8.44	12.46	8.18	10.31	5.00	12.40	6.84
Transitional	13.22	11.60	16.82	13.79	11.61	3.95	13.41	9.33
All firms	14.93	9.59	15.29	10.12	12.24	6.13	14.02	8.45

equations were estimates by ordinary least squares, with the rate of profit as the dependent variable, and the others, in various combinations, as independent variables.

The results of the regressions are set out in Table 3.

The symbols at the top of each column represent the variables as follows :

C = type of control: 1 for owner-control, 0 for management-control.

I_2 = dummy variable, taking the value 1 for firms in electrical engineering.

I_3 = the same for textiles.

G = average rate of growth of net assets, 1957-67.

S = opening size: net assets in 1957.

$\bar{R}^2$ is the coefficient of multiple correlation, corrected for degrees of freedom, and F is the F statistic; t-values are given in brackets beneath the coefficients. The F-statistic is a better indicator of overall fit than is the level of $\bar{R}^2$; t-values of over 2 show significance of the coefficient at approximately the 5% level.

In interpreting these results, a number of econometric problems must be born in mind. The major one is the near-certainty of simultaneous-equation bias, due to the two-way nature of the relation between profits and growth. Such a relation leads to an estimate of the coefficient of the independent variable that is not only biased, but also inconsistent, i.e. the bias is not reduced by increasing the number of observations.(14) The normal way to avoid this problem is to build a simultaneous-equation model, but this would be far beyond the scope of this paper. Without the development of such a model, we have no way of telling how strong the bias is. Of other common econometric problems, multicollinearity appears to be unimportant here, judging by the coefficient of correlation between the independent variables, and the Durbin-Watson statistic showed evidence of significant autocorrelation only in equation 14.

Taking first equations 1 - 4, which cover all firms, we see that opening size has a negative but insignificant effect on profitability.

Table 3 : Regression results: dependent variable, profit rate.

Equation	Constant	C	I_2	I_3	G	S	$\bar{R}^2$	F
All firms								
1.	11.073 (6.121)	2.733 (1.836)	.053 (.030)	-1.505 (.886)	.348 (2.992)	-.015 (.659)	.1988	4.576 **
2.	12.252 (7.111)		-.428 (.243)	-2.013 (1.179)	.400 (3.480)	-.023 (1.006)	.1687	4.700 **
3.	10.226 (7.602)	2.882 (1.980)			.372 (3.293)	-.014 (.600)	.2095	7.339 ***
4.	11.087 (8.521)				.429 (3.850)	-.022 (.991)	.1740	8.660 ***
Food								
5.	14.212 (5.153)	-1.986 (.933)			.355 (1.612)	-.049 (.768)	.0414	1.621
6.	13.579 (5.099)				.326 (1.501)	-.060 (.961)	.0487	2.012
Electrical Engineering								
7.	11.155 (3.362)	4.715 (1.438)			.361 (1.440)	-.049 (.972)	.1942	3.101
8.	12.515 (3.829)				.458 (1.843)	-.072 (1.448)	.1490	3.426 *
Textiles								
9.	8.301 (5.448)	6.138 (2.769)			.241 (1.675)	.028 (1.096)	.2973	4.999 **
10.	9.769 (6.022)				.368 (2.383)	.009 (.308)	.0935	2.841

* = significant at the 5% level; ** = significant at the 1% level; *** = significant at the 0.1% level
Bracketed figures are t - values.

Table 3, continued : Regression results, dependent variable, profit rate.

Equation	Constant	C	I_2	I_3	G	S	$\bar{R}^2$	F
O/C All:								
11.	13.851 (4.007)		3.873 (1.324)	1.156 (.364)	.229 (1.209)	-.070 (.714)	.0294	1.455
O/C Food								
12.	12.091 (3.176)				.295 (.973)	-.014 (.188)	-.2043	.567
O/C Elec.Eng.								
13.	30.548 (3.044)				-.033 (.076)	-.899 (1.772)	.1143	2.016
O/C Textiles								
14.	9.413 (.805)				.248 (.715)	1.110 (.556)	-.4438	.271
M/C All:								
15.	13.343 (6.311)		-3.947 (1.801)	-4.907 (2.298)	.370 (2.550)	.001 (.048)	.2037	3.872 *
M/C Food								
16.	14.832 (3.478)				.394 (1.116)	-.011 (.923)	-.0204	1.410
M/C Elec.Eng.								
17.	10.402 (2.983)				.408 (1.252)	-.038 (.879)	-.0341	1.269
M/C Textiles								
18.	7.989 (5.116)				.304 (1.731)	.028 (1.132)	.0629	2.104

O/C = owner-controlled; M/C = management-controlled; * = significant at the 5% level;
Bracket figures are t - values.

Growth has a significant positive effect: on average, a 1% increase in the rate of growth is associated with a 0.4% increase in the rate of profit. The industry dummies are insignificant. The nearly significant positive coefficient of the control dummy implies that at any rate of growth, holding the other variables constant, owner-controlled firms had higher rates of profit to the extent of about 2.75 percentage points above those of management-controlled firms; this can be compared with a mean profit rate for the latter of 12.4%. Again holding the other variables constant, the constant term in the regressions is interpreted as the average rate of profit for a non-growing management-controlled firm. On the overall significance of the regressions, the F-values are a better indicator than $\bar{R}^2$, which is lowered by the relatively large number of observations (68), and show significance at the 1% level or better.

Equations 5 - 10 break down the sample by industries. The size variable is consistently insignificant, but is positive for the textiles industry, perhaps because firms with a higher opening size were better able to deal with the financial problems associated with a stagnating industry, which was certainly the state of textiles compared to the other two industries. The coefficient of growth rate loses its significance, probably because of the smaller number of observations. Taking the 'best' result for each industry, it has a low value for textiles, higher for food, and highest for electrical engineering. The control coefficient varies widely in both value and significance; the result for all firms in equations 1 and 3 appears to be largely due to the high and very significant coefficient for the textiles firms. The constant term also varies considerably. The F-statistics show a weaker overall fit, again probably due to the smaller number of observations in each regression.

The remaining equations split the sample, for all firms and by industries, into owner-controlled and management-controlled firms, in order to see whether the relation between profit and the other variables is different between the two types. Because of the small number of observations, ranging from 8 for equations 13 and 14 to 18 for equation 18, the industry regressions must be treated with caution. Comparing equations 11 and 15, the F-statistic suggests a closer fit for management-controlled firms; in the equation for these, the coefficient of growth rate is higher and more significant than in the equation for owner-controlled firms, and the industry dummies also more significant. The industry regressions, equations 12 - 14 and 16 - 18, for what they are worth, show roughly the

same inter-industry patterns as equations 5 - 10, and the same difference between control types as equations 11 and 15.

Interpretation of the results

The negative relation found between size and rate of profit, and the positive relation between growth and profit, fit well with the results of Singh and Whittington.[15] On the growth-profit relation, we cannot compare coefficients directly, since they made growth, rather than profits, the dependent variable, and given a considerable scatter of observations in the growth-profit plane, the two regressions would not be represented by identical lines within that plane. This is demonstrated by the following two results for all 68 firms :

$$\text{Equation 19} : P = \underset{}{9.813} + \underset{(8.532)}{3.055}C + \underset{(2.152)}{.378}G, \quad \bar{R}^2 = .217 \qquad (3.377)$$

$$\text{Equation 20} : G = \underset{}{1.945} + \underset{(1.148)}{1.836}C + \underset{(1.237)}{.394}P, \quad \bar{R}^2 = .181 \qquad (3.377)$$

The coefficient of P in equation 20 is certainly within the range of values found by Singh and Whittington. More important is the fact that once more the significance of this relation has been demonstrated, and likewise the insignificance of the size-profit relation. These would seem to be among the basic facts from which any discussion of the modern firm can begin. Inter-industry differences in the relation between profit and growth are also to be expected, and are again in agreement with previous findings.[16]

What we are most concerned with here, however, is whether control type exerts a systematic effect on profitability, growth and the relation between the two. Since the regression results given in Table 3 concern the determinants of profitability only, the analysis is supplemented by the following table of simple correlation coefficients between control and profit rate, control and growth rate, and growth and profit rates:

Table 4 Simple correlation coefficients

Correlation between :	All industries	Food	Elec. Engineering	Textiles
Profit and control	.347	-.199	.467	.547
Growth and control	.282	.102	.317	.340
Profit and growth				
1) All firms	.445	.384	.429	.441
2) Owner-controlled	.321	.347	.314	.204
3) Management-controlled	.439	.472	.361	.390

We consider first the effect of control type on growth and on profitability. Bearing in mind that control is measured by a dummy variable taking a value of 1 for owner-control and 0 for management-control, the first two rows of table 4, together with the regression coefficients of the control variable (table 3), and the mean values given in table 2, suggest the following: for the whole sample, though owner-controlled firms do have higher rates of profit on average than management-controlled firms,[17] they also have higher growth rates; however, this does not hold true over all three industries, since for the food industry, owner-control is associated with slightly lower profit rates, and only very slightly higher growth rates. Owner-controlled firms are more numerous, and much more important in terms of size, in our food sample than in the other two industries. However, size would appear to be ruled out as an explanation of the discrepancy, since it was persistently insignificant in the regression results; though there is some evidence of multicollinearity from the correlation of size and growth, this correlation is never higher than -.25, which suggests that the significance of the size coefficient could not have been greatly affected. Our inclusion of industry dummies as sufficient to account for inter-industry differences in market structure and environment only dealt with differences between the broad industry groups. What we may be picking up here is a relation between the distribution of firms between control types and the distribution of firms between different sub-industries with varying market environments. The effect of this latter factor could

then be picked up by the control variable when the results for each industry are compared. An impressionistic view of the distribution of companies suggests that in the good industry, the two control types are quite evenly distributed between various subsectors, with owner-controlled firms strong in such established fields as confectionery, biscuits and milling. In the electrical engineering industry, the extreme performance of one owner-controlled firm, plus the predominance of management-controlled firms in the less profitable area of heavy electrical engineering, might explain some of the overall difference between control types; likewise in textiles, only one of the 8 owner-controlled firms is in the traditional and declining cotton spinning and weaving and wollens sector, compared to 10 to 12 of the 18 management-controlled ones.

These differences are only suggestive: they cannot prove or disprove the question of the effect of control on performance without much more careful investigation. If they did turn out to be important, it would lend support to the view that although in general management control is becoming more and more widespread, in certain sectors, particularly those with rapidly-growing demand, a considerable number of firms have managed to reach dominant positions in terms of size without having to spread ownership in order to raise capital. One explanation might be access to high profits because of monopoly conditions, providing large internal sources of funds; another might be simply the high quality of management, again leading to high profits, but management quality is extremely difficult to measure.

A rather more complex problem is the relationship between profit and growth rates. Here the correlation coefficients are particularly useful because of the problem of bias in the regression coefficient of growth. Management-controlled firms show a consistently closer relation between profit and growth rates than do owner-controlled firms, while inter-industry differences are not consistent. The differences between control types are not particularly great, and without significance measures not much trust can be placed in them because of the small number of observations. As a further test, 'Chow tests'[18] were calculated on the regressions given in Table 5, the hypothesis being that the two groups (owner- and management-controlled) came from the same basic population. In no case (for all industries or for each separately) could the hypothesis be rejected at the 5% significance level. Economic interpretation is difficult here because of the complexity of the relation, but if we simply note that owner-controlled firms show a wider scatter in the profit-growth

plane, two possible explanations are suggested. First, this could be simply due to their higher growth and profit rates, either of which, by giving greater fulfillment of its associated goals, allows greater leeway in the other dimension. Alternatively, the difference is specifically due to control because the lack of interest conflicts in owner-controlled firms gives the controllers freedom to pursue whatever goals they like.

III Conclusions

To sum up, differences in performance do appear to exist between the two control types in profitability. But whereas we might have expected the higher profit rates of owner-controlled firms to be associated with lower growth rates than those of management-controlled firms, the former are in fact superior in both respects. In addition, they show greater variability in the relationship between profit and growth rates. Inter-industry differences in the effects of control on performance may be due to different distributions of each control type between different sectors of each industry, a factor which was not allowed for in the regression analysis.

What do these results imply for the managerial theories? Our hypothesis derived from them was not confirmed completely: we cannot conclude that owner-controlled firms show a greater tendency to maximise profits. This could be because they are owner-controlled only in the sense that at the top, on the board of directors, the owners are able to get their way. However, because we set a lower size limit of £5 million in net assets, the owner-controlled firms in our sample are all very large, and for this reason will have a well-developed managerial hierarchy. Even though the controllers at the top might be aiming above all at a high rate of profit, organisational phenomena such as control loss[19] might result in the modification of this goal at a lower level in the hierarchy, where non-propertied managers will be motivated more in the manner described by Marris and Williamson. Turning to the management-controlled firms, the growth in institutional shareholding may be resulting in the re-emergence of shareholders who are, in Williamson's words, 'knowledgeable, powerful and active'.[20] There is evidence that large firms are still quite dependent on the capital market: Henderson showed this for 1949-53,[21] and data collected for the present sample show that about 30% of assets expansion is financed externally, with figures of 45% or more for rapidly-growing firms. The discretion available to managerial controllers may thus have been exaggerated. A third point, suggested by Nichols,[22] is that owners too may have non-profit goals, and that both owners and senior management hold similar values about industry and society, and have similar social backgrounds.

The fact that our owner-controlled firms are all very large also suggests that we have preselected the most efficient ones. To reach such

a size while maintaining owner-control implies that the firm has sacrificed the benefits of full access to the capital market. Either it grew largely from retentions, or it was restricted in its external financing largely to debenture stock, which involves the risk of high gearing. Other things being equal, then, our owner-controlled firms may show better performance because of better management quality.

For the managerial theories, what this all suggests is that they are basically theories of the large modern firm, not theories of the managerial firm, and that they need not be based on the separation of ownership and control. It also casts doubt on the inferences drawn by Berle and others for society at large from the change in ownership pattern. Finally, it implies that if we want to find a pattern of behaviour different from that described by the managerial theories, we should examine the small owner-controlled firm, lacking the complexities of a managerial hierarchy and of external financing.

APPENDIX A:[23] Profit-maximising in the Marris Model.

The 'profit-maximising' shareholder would choose the point of maximum profit rate only if capital gains were totally ignored, i.e. never realised. In general, the shareholder has a trade-off between profit-rate and growth-rate, which is reflected in the market's valuation of the firm. The manager, on the other hand, has a trade-off between the valuation ratio as an indicator of his security from takeover and the growth-rate. Since the Marris model is one of steady growth into the indefinite future, so that key variables such as the retention ratio remain constant, and all allocations from gross revenue expand at the same rate, these trade-offs can be shown as in figs. A.1 and A.2.

Fig. A.1

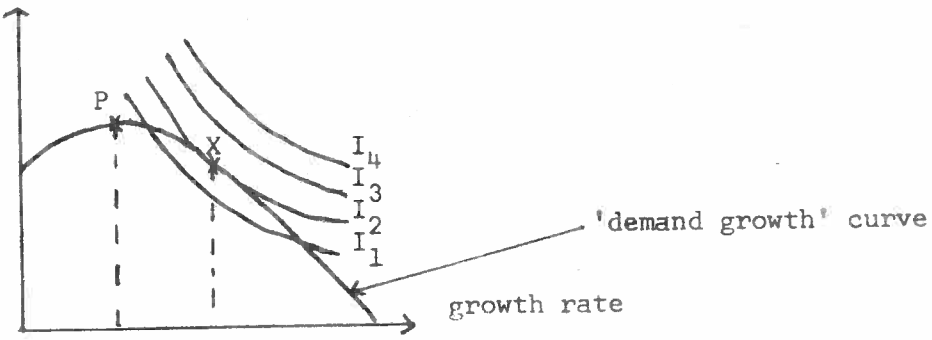
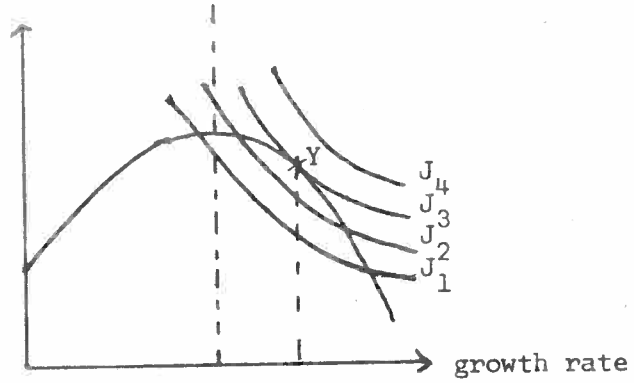


Fig. A.2

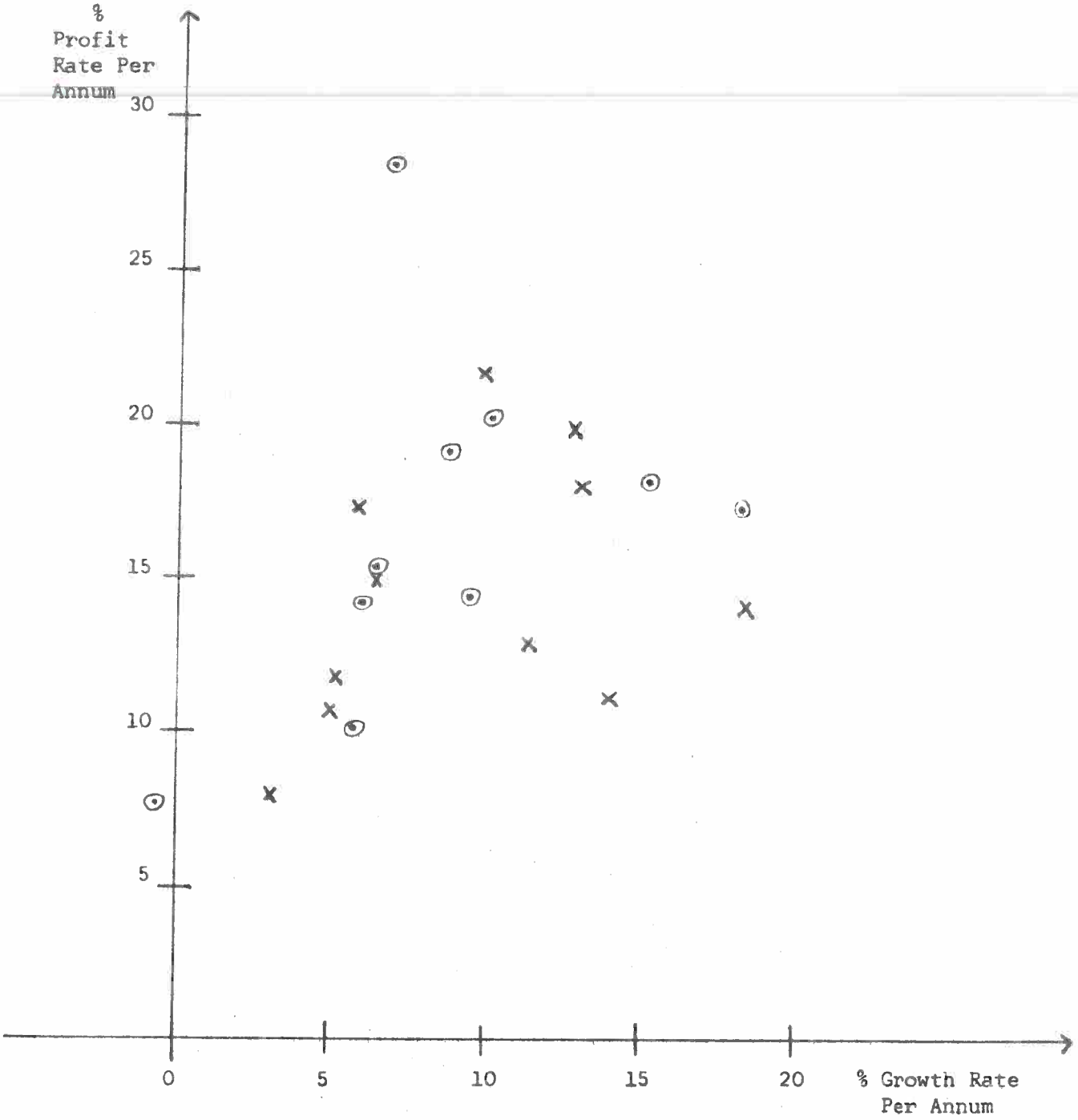


I_1, I_2, etc., are the family of shareholder indifference curves: utility is maximised at the point X, to the right of point P, in fig. A.1. The point X corresponds to the peak of the valuation curve in fig. A.2. J_1, J_2, etc., are the family of manager indifference curves: utility is maximised at the point Y. This will only coincide with the valuation maximum if that is the only secure position for the manager, i.e. the stock-market conforms to strict neo-classical assumptions.

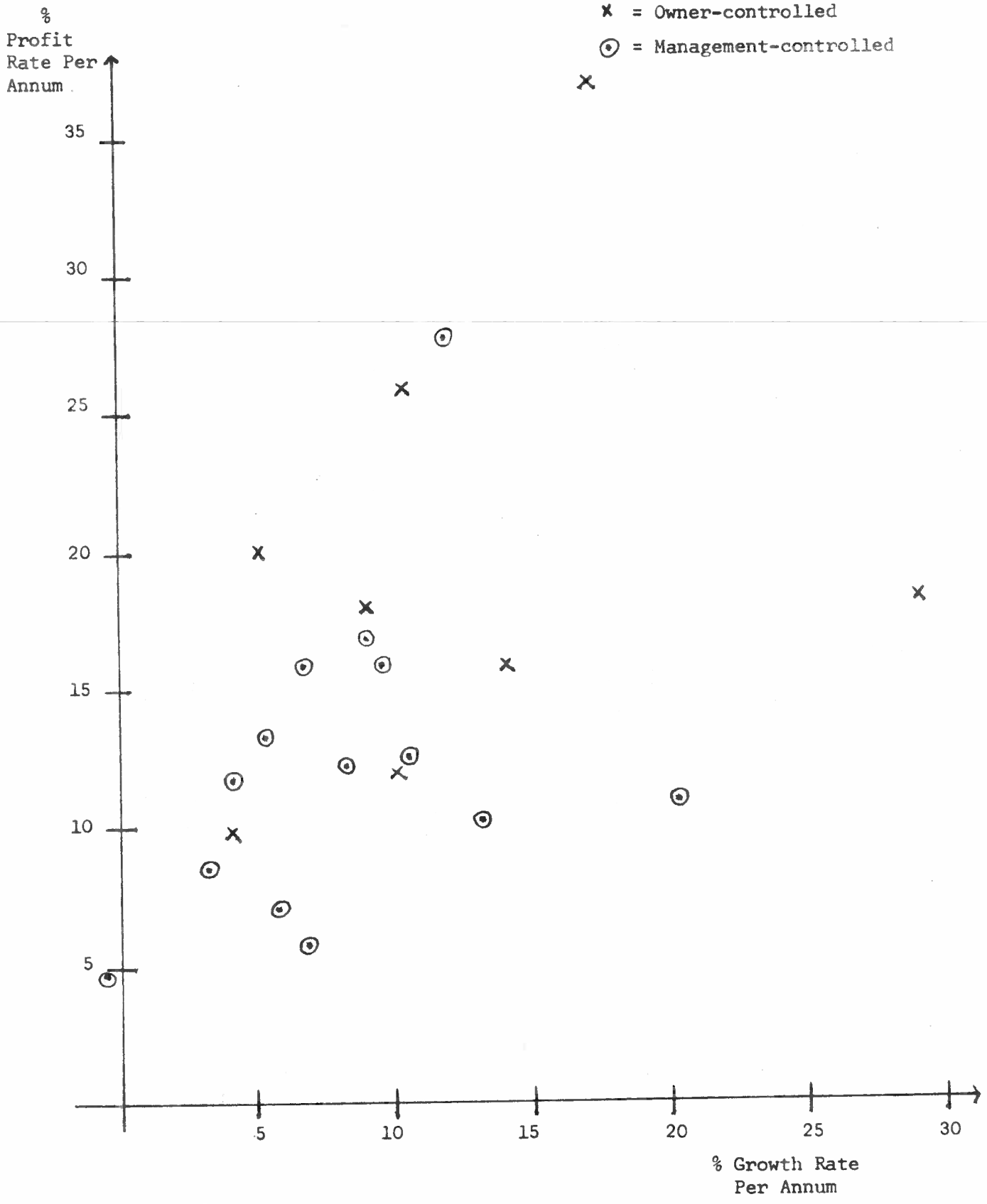
APPENDIX B: Food Industry Scatter Diagram

× = Owner-controlled

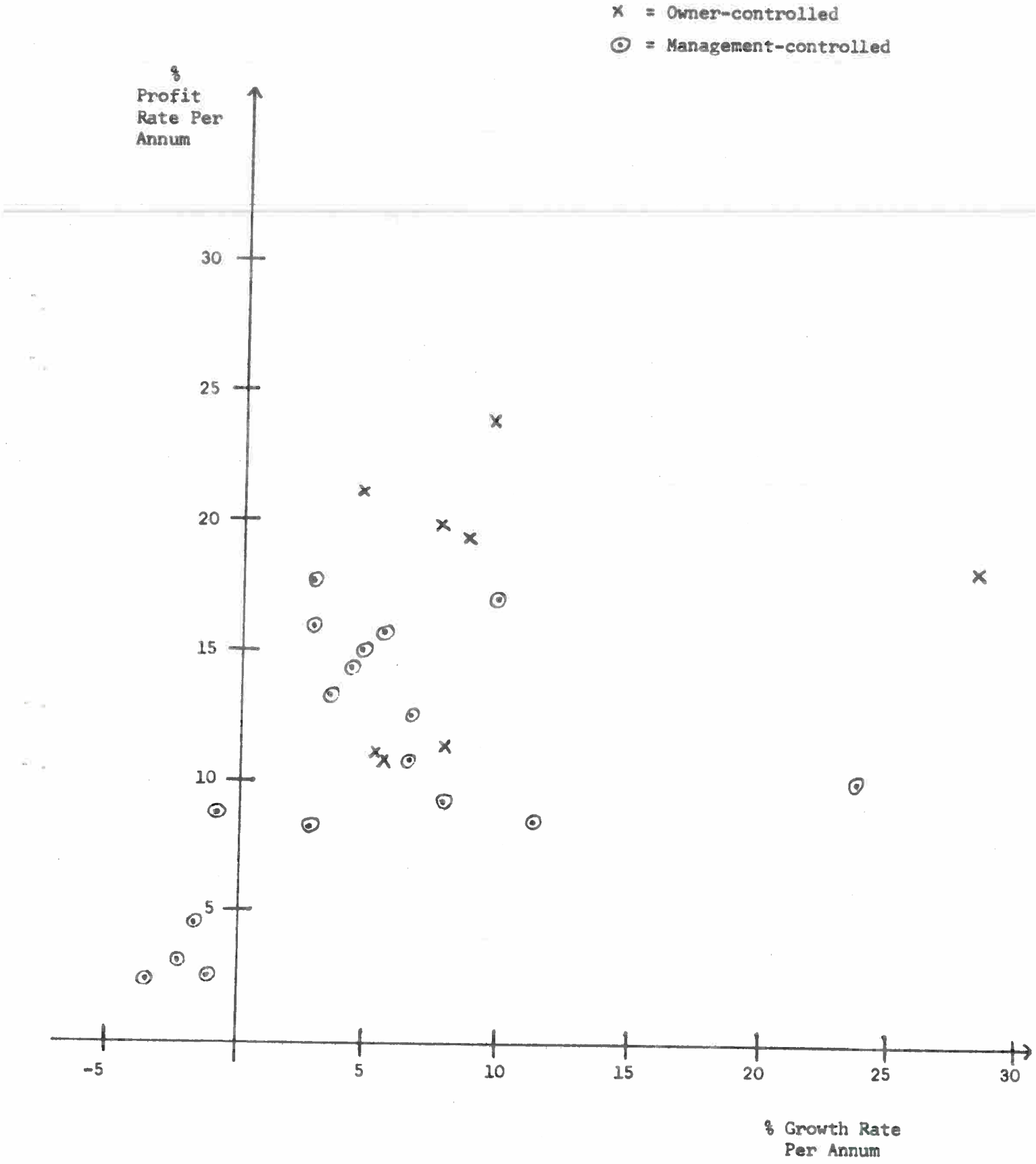
⊙ = Management-controlled



APPENDIX B, CONTINUED: Electrical Engineering Industry



APPENDIX B, CONTINUED: Textiles Industry



Footnotes

(1) This paper is concerned primarily with the version of R.L. Marris, 'The Economic Theory of Managerial Capitalism', (London, 1964). The two other works on which most of the recent literature is based are O.E. Williamson, 'The Economics of Discretionary Behavior: Managerial Objectives in a Theory of the Firm' (New Jersey, 1964) and W.J. Baumol, 'Business Behavior, Value and Growth' (New York, 1959).

(2) As evidenced by A.A. Berle and G.C. Means, 'The Modern Corporation and Private Property' (revised edn., New York 1968), and for the U.K. by P.S. Florence, 'Ownership, Control and Success of Large Companies', (London, 1961).

(3) For example: A.A. Berle, 'The Twentieth Century Capitalist Revolution' (N.Y. 1956); J. Burnham, 'The Managerial Revolution'(N.Y. 1941); R. Dahrendorf, 'Class and Class Conflict in Industrial Society' (London 1957); C. A.R. Crosland, 'The Future of Socialism'(London 1956). For an excellent discussion of the 'managerialism' issue, see T. Nichols, 'Ownership, Control and Ideology' (London, 1969).

(4) R.L. Marris, op.cit.

(5) From Marris, op.cit., p.252.

(6) E.g., A. Singh and G. Whittington, 'Growth Profitability and Valuation', (Cambridge, 1968).

(7) Assuming that this growth is not fully anticipated by capacity expansion.

(8) D.R. Kamerschen, 'The Influence of Ownership and Control on Profit Rates', American Economic Review, June 1968.

(9) Berle and Means, op.cit., Ch.V.

(10) Sargant Florence, op.cit., Ch.V.

(11) Sargant Florence's method was more complex, but comparable figures would have been 20% and 10%. The increase in share dispersal since 1951 would support the reduction of these figures to 15% and 5%; in any case, all those with less than 10% turned out to fall into our 'transitional' category described later.

(12) Revaluations result in an artificial rise in net assets figures. Their effect on profit rates as measured here is doubly dampening, since depreciation figures are also raised. Takeovers (including mergers) are more complex. They cannot be excluded altogether, since they are often alternative rather than additional to internal growth. Their distorting effect arises from the fact that the acquiring company adds on the book value of the other's assets, whereas its real investment is the actual acquisition cost. Acquiring an undervalued company thus inflates net assets and reduces the real rate of return.

(13) M. Hall and L. Weiss, 'Firm Size and Profitability', Review of Economics and Statistics, August 1967. See also Singh and Whittington, op.cit.

(14) See, e.g. J. Johnston, 'Econometric Methods' pp. 231-4.

(15) Singh and Whittington, op.cit. Ch.6.

(16) Singh and Whittington, Ch. 7.

(17) Kamerschen, op.cit., found rather different results for the top 200 U.S. firms. He split his sample into those firms which remained owner-controlled in 1963 as in 1929, those which remained management-controlled, and those which changed from owner- to management control. Of the three groups, the owner-controlled had the lowest profit rates. This contradicts the findings of Monsen et.al., 'The Effect of Separation of Ownership and Control on the Performance of the Large Firm', Quarterly Journal of Economics, 1968.

(18) See, for example, J. Johnston, op.cit., pp. 136-8.

(19) See O.E. Williamson, 'Hierarchical Control and Optimum Firm Size', Journal of Political Economy, April 1967, in which he attempts to operationalize these factors.

(20) Recent cases where institutions have come together to protect their interests include the takeover of A.E.I. by G.E.C., the collapse of the textile firm, Klinger's, and the Pergamon-Leasco affair.

(21) R.F. Henderson, 'Capital Issues', in B. Tew and R.F. Henderson, 'Studies in Company Finance', C.U.P. Cambridge, 1959.

(22) T. Nichols, 'Ownership, Control and Ideology', Allen & Unwin, London 1969.

(23) This is derived from Marris, op.cit., Ch.6.