EXECUTIVE REMUNERATION, EXECUTIVE DISMISSAL AND INSTITUTIONAL SHAREHOLDINGS

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Abstract

This paper examines the links between executive pay, executive dismissals and company characteristics. Specific attention is paid to the role of institutional investors and non-executive directors in influencing pay/performance relationships. The analysis shows that in the UK Electrical Engineering Industry in the period 1989-94 pay was positively related to both shareholder welfare measures (profitability and share returns) and to size but that the latter was the most significant influence. The probability of executive dismissal was higher the smaller was company size and the lower was profitability. The presence or absence of institutions as major shareholders made no appreciable difference to either the level of pay or the likelihood of dismissal, or the sensitivity of either to shareholder performance or size.

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1. Introduction

This paper investigates the relationship between executive remuneration, executive turnover, board structure and the presence of institutional investors in the UK. It focuses on the Electrical Engineering sector and investigates in detail the period 1989-94. The results of this analysis are, however, placed in the context of developments since the 1970s in this sector in terms of pay, share ownership and board structure.

A number of studies for the UK [e.g. Cosh (1975), Meeks and Whittington (1975), Main (1991), Gregg, Machin and Szymanski (1992), Conyon and Leech (1993), Main, Bruce and Buck (1994)] have shown that company size and changes in size are much more significant determinants of executive pay than measures of shareholder performance such as share returns, earnings per share or the accounting rate of return. The latter are less frequently statistically significant on either a cross section or time series basis than are size measures, and when they are significant they have a much smaller economic impact. This remains true even when some allowance is made for the existence of stock options as a component of executive pay Thus Cosh (1975) in a study covering over 1500 companies in the UK in the period 1969-71 showed that chief executive remuneration in a company of £10 million net assets would vary only between £12,230 and £16,740 as the accounting rate of return varied between 0% and 30%. Increasing size from £10m to £100 million of net assets would, however, (with profits constant) raise pay from £14,200 to £25,900. Moreover the profitability variable was statistically significantly linked to executive pay in only 7 out of 17 industry groups analysed. More recently Conyon and Leech (1993) in a cross-section analysis of 470 UK companies in 1985 report an elasticity of the remuneration (excluding stock options) of the highest paid director with respect to sales of 0.20, compared with an elasticity of 0.02 with respect to the accounting return on share capital and 0.11 on the trading margin. Main, Bruce and Buck (1994) include stock options in an analysis of changes in executive remuneration in 59 UK

companies in the period 1984-89, but still report results which evaluated at sample medians imply that for every £1 million of shareholder wealth created the board of directors as a whole gains only £907. These results echo similar findings for the USA [see for example Rosen (1992), Jensen and Murphy (1990)]. These analyses, and growing public concern about the level of remuneration itself, have led to an emphasis in policy discussions on the role that independent non-executive directors and institutions may play in both restraining pay levels and aligning pay more closely with shareholder interests.

In an earlier study of the governance structure of large UK and US corporations at the turn of the 1980's [Cosh and Hughes (1987)] we revealed a picture in which UK boards of directors were dominated by a majority of insiders who had spent the bulk of their career in the same firm. The non-executive directors appeared to be primarily either retired executive directors (often of the same company), or executive directors of other companies in the financial and industrial sectors. Taken together these board were insignificant shareholders in percentage terms. This broad 'managerialist' position was subject to a number of caveats however. First, we found several cases where small absolute percentage shareholdings meant large absolute levels of stock based wealth and income. Second, the pattern of corporate share ownership in the UK meant that in our sample companies a small number of major institutional investors recurred as significant holders of stock. A separate study showed that institutional investors as a group owned 60% of the equity on the UK market in 1985, compared to only 35% in 1969, and that they were numerically the most significant non-board holders of blocks of 5% or more of individual company's shares. There were 72 such holdings in the largest 200 non-financial UK companies in 1982, and 345 such holdings in companies ranked 201-600 [Cosh, Hughes, Lee and Singh (1989)]. These studies suggest that institutions, as major equity holders, are potentially able to play a key role in the determination of corporate incentive structures including the patterns of hiring, firing and remunerating of both executive and non-executive directors. A number of the most influential suggestions for the reform of corporate governance are built around the exploitation of that influence and the role of non-executives [Cadbury (1992), Charkham

(1994)]. There are however reasons for believing that the potential for institutional involvement may not be fulfilled, not least because the private costs of such intervention may yield private benefits which are less than the public good they will produce [Cosh, Hughes, Lee and Singh (1989), Cosh, Hughes and Singh (1990)]. If the role that institutional investors choose to play is indeed however passive, exercising 'exit' rather than 'voice', then notwithstanding their structurally impressive position, executive directors may secure the appointment of compliant non-executives with a transient interest in company affairs, and design remuneration packages which benefit themselves at the expense of shareholders. In those circumstances the weight of 'disciplinary' action against delinquent management will be thrown onto the takeover mechanism and the product market.

Despite their potential role and the weight placed upon it there is however relatively little direct testing of the actual impact of the presence of institutional investor or non-executive directors in the UK [for a recent example see Conyon and Leech (1993)]. Nor have any UK studies specifically examined CEO dismissals and the extent to which they may serve to constrain self-serving CEO behaviour. This paper attempts to fill these gaps in the same way that a companion paper attempts to do in relation to the role of institutional presence in acquiring companies in the takeover process [Cosh, Hughes, Lee and Singh (1989)]

Our analysis proceeds by testing three interrelated hypotheses about the impact on executive remuneration, and executive dismissal, of substantial share ownership by institutional investors and the presence of non-executive directors on company boards.

Hypothesis 1: The presence of substantial institutional ownership and non-executive directors will restrict the discretionary component of executive compensation

Hypothesis 2: The presence of substantial institutional ownership will cause executive compensation to be more closely related to shareholder returns and profitability than to 'managerial' objectives such a size or growth.

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Hypothesis 3: The likelihood of executive dismissals for underperformance will be higher when institutional presence and non-executive presence are higher.

In testing these hypotheses we also allow for the impact of board shareholdings on pay, performance and dismissal, since other things equal agency arguments would lead us to expect that CEO's and directors with significant board holdings would not require as strong pay for performance packages as those with insignificant holdings [see for example Jensen and Murphy (1990) Baker, Jensen and Murphy (1988)].

The next section of this paper discusses long run trends in CEO pay, company ownership and institutional involvement in the electrical engineering industry; succeeding sections focus on the period 1989-94. They provide an outline of patterns of board structure and executive dismissal, and regression analyses of the relationship between CEO pay, CEO dismissal and company characteristics, including institutional involvement and the extent of non-executive representation on the board.

2. Corporate Control, Institutional Shareholdings, Executive Pay and Company Performance in the Electrical Engineering Industry 1970-89

Table 1 shows trends since 1970 in board share ownership, board structure, pay, and non-board shareholdings in listed companies in the UK Electrical Engineering Sector: the samples in each year are classified by 'control' type using a methodology whose distinctive features are: that management-control is positively identified rather than forming the residual group; and that remuneration and stock based motivational influences are considered alongside the control of the voting stock [Cosh and Hughes (1987)][1].

If we look first at the upper half of this table, which shows median values for the owner-control groups, we see a consistent picture over the two decades (after adjusting all nominal values for changes in the retail prices index). The growing number of new listed companies in this sector in the

1980's means that the 1989 sample has a larger number of small young companies. This explains the somewhat lower median size and higher board shareholding amongst the 1989 owner-control sample, than in earlier years. In 1989 the management-control sample's median sales is seven times greater than that for the owner-control sample, whereas it was only twice as large in 1970.

The average board size of management-control companies has grown over the period, but there is some evidence to suggest that owner-control firms have larger boards relative to their size. On the other hand management-control firms have a higher proportion of non-executive directors, even though it fell in this sample between 1979 and 1989.

The changing pattern of board and off-board shareholdings is also shown in Table 1. The increasing number of off-board shareholdings emerges clearly when comparing 1989 with previous years. This increase reflects both the greater presence of institutional investors at the end of the period and the improved ease of their identification as disclosure rules have become tougher. The median holdings in 1989 are similar in both groups.

The real value and proportion of board shareholdings declined amongst the management- control group until the start of the eighties but show a revival to 1989. In that time stock option/share incentive schemes became both widespread and substantial. The impact of these schemes, amongst management control companies, can be clearly seen in Table 1 where their median board shareholding including incentives scheme is over £1.1m but excluding them is only just over £205,000. By contrast their rather modest use amongst owner-control firms suggests that the main use for such schemes lies in tackling incentive problems where board directors and CEOs do not already have strong ownership interests, which is consistent with our discussion of this issue in the previous section. It is also consistent with the view that CEO's have chosen to reward themselves in this way in the bull market of the late 1980s.

Board emoluments and chief executive remuneration have risen substantially in real terms in the management control group. This contrast

with owner-control firms could, however, be the result of the changing samples over the two decades. This question can be explored further by looking at a stable sample of companies - 20 companies which survived throughout the eighties. The comparison is shown in Table 2. It generally supports the findings discussed above. It is worth noting that these survivors are larger than average in both control-type groups. The lack of growth of the owner-control group is particularly marked when considering the median, whilst the mean growth in sales gives a more dynamic result for the owner controlled firms. The management control group has grown faster in terms of both measures. There is no evidence that this growth has been at the expense of profits since the management-control group is also far superior in this area. The findings in Table 1 concerning the board of directors need some qualification for the management-control group in the light of Table 2. For this continuing group of companies board size has decreased somewhat and the proportion of non-executive directors has increased. This may reflect an increasing use of non executives in the generally larger size of company in Table 2.

We further explored the link between ownership, size, and non executive directors in 1989 by regressing the proportion of non-executives (PROPNONEX) on an owner control dummy based on the classification in Table 1 (DUMC), the logarithm of capital employed

(LNCE) and, to check for if institutional shareholdings were linked to the exercise of influence via non-executive directors, added a dummy variable measuring institutional presence (DUMI)[2] The results for the 64 companies in 1989 who survived the period 1989-94 was as follows:

$$PROPNONEX = -0.02 - 0.02 \ DUMC + 0.08 \ DUMI + 0.03**LNCE$$
$$\qquad\qquad\quad (0.12) \quad (0.36) \qquad (1.49) \qquad (2.15)$$

$N = 64, R^2 = 0.17, \overline{R}^2 = 0.13$

** significant at the 5% level

Although the degree of explanation is not high, the suggestion that larger

companies have a higher proportion of non-executive directors is confirmed. The coefficient for ownership control is negative, which is consistent with Tables 1 and 2 and that for the institutional presence dummy is positive. Both are, however, statistically insignificant. This result is consistent with the institutional influence being exerted to some extent through increasing the proportion of non-executives on the boards of companies where their presence is strong. In our analysis of executive pay and dismissals in the next sector we directly allow both for institutional presence and non-executive presence.

The findings for remuneration in Table 2 confirm those of Table 1. In particular the management-control group exhibit much greater increases in the real remuneration of chief executives. The extent to which this is a result of better sales and profits growth is an issue which is explored in the regression analysis for 1989-94 below.

3. The Determinants of CEO Remuneration and Dismissals 1989-94

3.1 The sample, variable definitions, and basic patterns of pay, company characteristics and executive dismissal.

Of the 75 companies listed in the 1989 sample of Electrical Engineering companies 64 survived to 1994 as independent companies. Our analysis focuses on these[3]. We first attempt to explain both the level of and changes in CEOPAY using performance variables. We then question whether significant institutional presence, or control type, have any impact on these relationships. We then turn to an analysis of executive turnover.

Our equations for pay and dismissal incorporate both size and shareholder return measures. We consider both shift and interaction dummies to capture the potential impact of institutional investors and board ownership, as well as a measure of the proportion of non- executives on the board. We include both a share based return measure of shareholder welfare, and an accounts based return on capital employed. The inclusion of an accounts based measure, in addition to a direct measure of shareholder returns, reflects the view that incentive based compensation systems should

include variables that are both observable, and in principle controllable by the actions of the Chief Executive [Holmstrom (1979) Rosen (1992)]. In this context it can be argued that accounts based measures are more stable and less subject to speculative and exogenous shocks than stock market based measures (although a countervailing argument could be that the former are in principle subject to manipulation by directors). In order to control for performance changes beyond the control of CEOs which may affect all firms we provide our performance measures on both an absolute and relative basis, normalizing for industry wide median share returns and return on capital employed.

The inclusion of both size and return measures is in keeping with existing theoretical work on executive pay which hypotheses a positive relation of pay with both. Return measures are included on the basis of agency related contracting issues (aligning pay with shareholder wealth); and size measures on the basis of trickle down marginal productivity arguments [Rosen (1992)], or hierarchical pay models [Simon (1957)] or manageralist interpretations [Marris (1964)] each of which predicts a positive role for size.

In contrast to most previous work we specifically include in our pay equations a dummy variable measuring whether or not the CEO changed in the time period in question. Pay equations which are run on companies using pay data derived from financial databases which do not identify individual CEOs, ignore the fact that the time series they model relate to different individuals. Analyses including a year in which a CEO leaves a company for any reason may provide distorted pay performance relationships. Changes in CEO permit alterations to pay structures which might be easier to effect when outside talent is brought in, or insiders are promoted, on new terms, than when adjustments are sought for incumbents. Gilson and Vetsuypens (1993) note that CEO changes in financially distressed firms can lead to significant upward or downward pay changes depending upon whether or not the new CEO comes from inside or outside the firm. We therefore have no prior expectation as to which way on average the effect of CEO Changes may go. Our final addition to the usual approach in the literature is to specifically allow for

adjustment to "average" pay/performance relations by the inclusion of a disturbance variable (DISTURB). We measure DISTURB as the deviation between CEO pay in a given year and the pay which would be expected given the estimated size pay relationship for that year. It is often argued that companies adjust CEO pay on the basis of comparative pay exercises conducted by outside consultants and executive remuneration committees, and that such comparisons are based predominantly on regressions relating pay to company size rather than performance [see for example the discussion in Baker, Jensen and Murphy (1988)]. One effect of this sort of system of pay determination would be to perpetuate size/pay relationships. It could account for the remarkable stability of size coefficients in cross section pay size regressions over widely different samples, time periods and industries as documented for instance in Rosen (1992). We would expect that significant departures of CEO pay from that predicted by size (given the industries 'normal' size/pay relationship) would lead to appropriate adjustments in subsequent period(s). The inclusion of our DISTURB variable tests for the significance of this effect.

The specific variables used are defined as follows:

CEOPAY   -   Chief executive remuneration (£)

ROCE   -   Pre-tax profit/total assets less current liabilities

RETURN   -   Total shareholders return measured over the period of the respective companies accounting year.

RELRET   -   Total shareholder return for that company less the median total shareholder return for the sample in the relevant period

RELROC   -   ROCE minus median ROCE for the sample in the relevant period

SM   -   Shareholder measure: ROCE, RETURN or RELRET as indicated in the tables of results

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CE	-	Total assets less current liabilities, 1989-91 (£,000)
SALES	-	Turnover, (£,000)
DUM0	-	Dummy variables with the value 1 when the chief executive changes and 0 otherwise
DUMD	-	Dummy variable with the value 1 if the CEO is dismissed and 0 otherwise
DUMC	-	Dummy variable with value 0 for management-control and 1 for owner-control
DUMI[4]	-	Dummy variable with value 0 for no significant institutional presence and 1 otherwise
DISTURB	-	Variable used to explain changes in CEO pay. It measures the extent to which actual CEO Pay differs from that expected for a company of that size in the year from which the change in CEO Pay is measured
D(VARIABLE)	-	Measures the change in a variable over a year (or over the period 1989-94 for the whole period analysis)
LN(VARIABLE)	-	The natural logarithm of the variable
D(VARIABLE)LAG	-	Measures the change in the variable from two years ago to last year
PROPNONEX	-	The proportion of non-executive directors on the board

DIRTURN   -   The number of directors leaving the board in any year as a proportion of the opening year board size.

Table 3 provides summary information on median values of the basic pay, size and performance measures for our sample companies in 1989 and 1994. It shows that CEOPAY increased substantially faster than either capital employed or sales over the period. Moreover whilst median share returns were virtually the same in 1994 as in 1989 and the return on capital lower, executive pay was nearly 50% higher.

As a first step in our analysis of the relationship between pay and performance Table 4 shows the results of a test of association using Kendalls coefficient of rank correlation relating changes in CEO pay to each of the main performance and company characteristic variables in our analysis. The table also allows a comparison of these relationships for companies with and without an institutional investor presence. The results suggests that in the period 1989-90 both growth and return variables were positively associated with CEOPAY changes, but that for later years the relationship with shareholder measures was much weaker. The DISTURB variable is consistently significantly related to pay changes in all but the first year of the period. The results for all years together show that, if anything, shareholder return variables are less strongly correlated with CEOPAY changes in companies with strong institutional presence whilst accounting return measures are more closely aligned. However, the pooled results may reflect time related trends in the values of pay and returns. We allow specifically for this and other time related effects when we carry out our regression analysis using the pooled data by including time dummies.

So far we have described our data without reference to either board structure or directors' turnover. Tables 5 and 6 provide the necessary raw material for this discussion.

Table 5 shows that the median proportion of non executives on the board has risen between 1989 and 1994 with over half of all companies in the sample having non-executive proportions of over 40% by the latter year.

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Companies with a strong institutional presence were, however, no more likely to have a high proportion of non-executives than companies in general which confirms our earlier insignificant regression results for 1989. Owner-control and smaller companies have lower proportions of non-executive and, in the case of the latter, the median holding is significantly lower than for 'large companies'. The question of whether the growing proportions of non-executives and their unequal incidence across companies affects pay performance relationships is pursued below.

Finally we can turn to executive turnover. Table 6 shows that the majority of companies have annual rates of director turnover of 20% with an overall mean of 12.8%. In 70 companies there were years when over 30% of the board left. This of course relates to turnover for all reasons including retirement, and the termination of periods of office of non-executive officers, who typically serve shorter tenures in the UK than executives [Cosh and Hughes (1987)]. We can be more precise about the causes of CEO turnover in our sample. Of the 68 executives in office in 1989 (there were 4 of the 64 companies with joint CEOs) only 26 remained in post in 1994 and 42 left office in the course of the period. In addition a further 21 CEO's both joined and left in the course of those years. Table 7 shows the distribution of the 63 executives leaving office by reasons for departure.

The table is based on an exhaustive search of annual accounts and the financial press. Of the 63 CEOs who left office in the period 1989-94 only 9 could not be positively associated with a reason for leaving[5]. The table shows that of the rest approximately half left for 'natural' reason of retirement with a substantial proportion staying on the board (frequently in non-executive positions). A total of 21 resigned or were sacked because of poor performance. Loss of office following poor performance is clearly sufficiently frequent for it to be a significant feature of the overall incentive structure within which CEO's operate.

3.2 Pay, performance and institutional influence: regression results

In what follows we present an analysis of both levels and changes in CEOPAY. We also employ in each of these analyses, cross section

regressions based on average values over the whole period 1989-94, and regressions based on pooling the annual cross section observations for that period. It has become increasingly common to focus attention on pooled data and to emphasize first difference changes rather than levels. Thus Gregg, Machin and Szymanski (1993) argue that it is the growth in directors pay that has attracted most media attention and, following Murphy (1985), that focusing on changes permits the netting out of those 'fixed' factors influencing the pay performance relationship which remain constant over time and may be unobservable. It is however equally plausible to argue that as much, if not more, media policy attention has been focused on pay levels as on changes. Moreover a problem with the first differencing approach is that whilst removing the fixed effects, it may also obscure the long term information in the data series. Moreover it is vulnerable to variations in lag structures across sample companies or over time, especially those relating to more volatile explanatory variable such as shareholder returns and to shifts in company pay regimes associated with CEO changes[6]. We therefore present results on both bases. Following earlier work in this area [Roberts (1959), Cosh (1975)] the regression model examined employs the logarithm of CEOPAY related to the logarithm of our size measure (LNCE).

The results of the cross-section analysis of levels are presented in Table 8. A number of interesting points emerge from RUN(1) and RUN(2) which employ period averages. The degree of explanation achieved is very high and much greater than that found for a similar sample for the period 1969-71 [see Cosh (1975) p. 83]. The finding that size is the dominant explanatory variable is in keeping with most empirical work in this area but the profitability and shareholder return measures are also statistically significant. In the period 1969-71 the Electrical Engineering industry sample was one of only seven industries (amongst sixteen industry samples) for which this was the case [Cosh (1975)]. The similarity of the 1989-94 findings with those of twenty years earlier is even greater since the size coefficient is very similar in both studies. This confirms the stability in the cross section determination of CEOPAY in terms of size which we remarked upon earlier. The potential impact of institutional investors on the determination of the level of CEO pay is examined by the inclusion of

the DUMI variables. The total insignificance of their coefficients suggest that the presence of institutional investors has no impact on either the level of CEO pay or the strength of its relationship to company size, profitability, or shareholder returns. A further result not reported in the table for reasons of space is that the DUMC variable representing variations in board ownership and control was also insignificant. This is in keeping with findings for the USA reported in Jensen and Murphy (1990) and is inconsistent with agency related arguments, which would lead us to expect a closer pay/performance relationship to be required in management controlled firms. This result however needs further analysis of pay structures including stock options, given our earlier findings of their far greater use in management controlled company's compensation packages than in those of owner controlled firms.

RUNS(3)-(8) report the results of analysing annual data pooled across the years 1989-94. The insignificance of profitability and shareholder return in RUN(3) and RUN(4) may reflect the vulnerability of this approach to lag structures. They reveal company size to be the dominant variable. RUN(5) and RUN(6) introduce the control type and institutional presence dummies as shift variables. Both have a negligible impact. These findings are not consistent with our first hypothesis, that the presence of institutional ownership will restrict the discretionary component of executive pay and differs from the findings of Conyon and Leech (1993) for the single year 1985. Finally, the impact of institutional investor presence is explored further by the introduction of interaction terms. When performance is measured in terms of the return on capital employed (RUN(7)) there is no discernible impact of institutional presence on the responsiveness of pay to performance. However RUN(8) suggests that when performance is measured by the relative shareholder return then CEOPAY is more positively associated with performance in the presence of a strong institutional presence. Finally RUN(9) shows that pay is *higher* the greater is the proportion of non-executives on the board of director which is inconsistent with the view that their presence may help to restrain CEO remuneration.

So far we have relied on cross section results based on levels of pay and performance. Our second set of results shown in Table 9 relate to changes

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in CEOPAY. The table presents results for both whole period changes and annual changes in CEO pay. Both sets of results display a lower overall degree of explanatory power than our cross section findings. This may reflect significant temporary divergences from the longer term cross section relationship and is quite commonly found [see for example Cosh (1978), Meeks and Whittington (1975)]. RUNS(1)-(4) report the results for changes in CEO pay over the six year period. They show the same response of executive pay to changes in company size as implied by our earlier results. On the other hand, with the exception of RUN(1), profitability and shareholder return changes appear to have had little impact on CEO pay. Moreover, the findings for RUN(1) and RUN(3) suggest a perverse effect of institutional presence by restraining the responsiveness of CEO pay to profitability improvement (DUMI as a shift dummy was insignificant in runs which included it and the results are not reported here). In general this set of results suggests an insignificant impact of institutional investors on changes in CEO pay. On the other hand the significance of the DISTURB variable reinforces the importance of company size on CEO pay. It shows that companies which, for whatever reasons, found themselves with CEO pay levels which were inappropriate relative to their size adjusted towards the size related norm of this period. This is consistent with our hypothesis about the influence of remuneration consultancy firms in reinforcing size pay relationships.

RUNS(5)-(9) examine the determinants of annual changes in executive pay and, as we would expect, the degree of explanation achieved is lower. Once again the most consistent finding is the significance of the size and of the DISTURB variables. Beyond this, there is evidence in RUN(6) and RUN(7) to support the view that the change in CEO pay is responsive to current relative shareholder returns and to changes in these returns in the previous year. RUN(7) suggests that institutional investors may have exerted a restraining influence on the process of setting executive pay levels, but in a perverse direction by reducing the sensitivity of pay to relative returns, moreover RUN (6) suggests that the presence of non-executive directors raises the rate of change of CEO pay rather than reducing it.

Taken as a whole our results suggest that size and growth are the most significant determinants of levels and changes in CEOPAY. In contrast to a number of recent studies [e.g. Gregg, Machin and Szymanski (1993)] we do, however, find some evidence of a positive role for relative shareholder returns. We do not find any evidence to support the hypotheses that institutional investors or non executive directors constrain pay levels or that they serve to align pay changes more closely to relative share returns.

3.3 Turnover of the Board of Directors and CEOs and institutional and non-executive director influence

In addition to the role they may play in pay setting institutional investors may affect the incentive structures within which directors operate by instigating changes in boards in response to poor performance. We would therefore expect above average director turnover to be positively related to poor performance and for this relationship to be stronger in companies with a significant institutional presence.

To test this hypothesis we regressed the number of directors leaving each year as a proportion of opening board size (DIRTURN) against relative returns, our ownership dummy (DUMC) and institutional shift and interaction dummies (DUMI) using the pooled data set. The results were as follows:-

$$DIRTURN = 0.12^{**} - 0.003 \, DUMC \quad - 0.02 \, DUMI \quad - 0.06^{**} \, RELRETLAG$$
$$\qquad\qquad (5.38) \quad (0.07) \qquad\quad (1.07) \qquad\quad (2.54)$$

$$\qquad\qquad - 0.00 \, DUMI \, RELRETLAG$$
$$\qquad\qquad (0.07)$$

$$N = 350 \quad R^2 = 0.02 \quad \bar{R}^2 = 0.01$$

** Significant at the 5% level

The significant coefficient on lagged relative returns is consistent with the hypothesis that poor performance raises turnover. There is however no sign

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that this relationship is enhanced by the presence of institutions. Moreover the overall explanatory power of the equation is very low.

Looking at directors turnover without examining the reasons behind departures is of necessity a rough and ready approach. We can be more precise however if we focus on CEOs where we have identified reasons for departure. Table 10 sets out the results of a logistic regression analysis predicting the probability of CEO turnover as a function of company characteristics. RUNs(1)-(7) consider CEO dismissals, RUN(8) focuses on those CEOs leaving office through death, illness and retirement.

RUN1 and RUN3 show that the probability of dismissal increases the lower are relative share returns, and relative returns on capital, in the last full financial year in which a dismissed CEO is in office. These results are consistent with similar work in the USA [Jensen and Murphy (1989) Gilson (1989) Coughlan and Schmidt (1985) Weisbach (1988) Warner *et al* (1988)]. We can evaluate the implications of these findings by contrasting the probability of dismissal for CEO's whose companies are at the upper and lower quartiles of the distributions for these return measures. RUN(1) implies that the probability of dismissal would rise from 4.9% to 7.6% in moving from the upper quartile to the lower quartile for relative return. The equivalent rise in dismissal probability for RUN(3) is from 4.6% to 5.3%.

RUN2 and RUN4 show that adding lagged values of the respective measures adds little to the explanatory power of the equation. In general the relationship is stronger with the return on capital employed than it is with the return on shares, and RUN5 shows that the latter is insignificant in an equation which incorporates both variables. RUN6 adds a size variable to the equation which is significant and shows that the probability of dismissal falls with size given the relative return on capital employed which a company earns. It is of course in larger companies that one might expect the potential power of institutions and non-executives to be most useful, since there is no obvious efficiency reason (except shortage of potential recruits) why size should reduce dismissal probabilities. However as RUN7 shows their impact on the estimated probability of

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dismissal is completely insignificant. (A similar analysis using our owner control dummy yielded similarly insignificant results). These results reveal that size is an important determinant of the probability of dismissal. Companies whose size is around the upper quartile of the size distribution have a probability of dismissing their CEO of only 3.8%, but this rises to 7.9% for companies at the lower size quartile. This impact is more substantial than that to be gained by effecting a similar shift in profitability. Although the interaction terms are not statistically significant the results imply that the relationship between dismissal probability and profitability is greater and that between dismissal probability and size is lower for companies with a strong institutional presence. Indeed such a presence appears to raise the probability of dismissal amongst larger companies and lower it amongst smaller companies. This finding should be treated with caution given the lack of statistical significance of the interaction terms. Finally as a check on our identification of dismissals we estimated a dismissal equation for those chief executives retiring or dying rather than being dismissed. The equation performs very poorly and is reassuring in that it shows that this group of executives were indistinguishable in terms of their company size and relative profitability from chief executives who remained in office in any year.

The general insignificance of institutional shareholders in affecting the dismissal of executives for poor performance may reflect both the difficulties of coordinating effective action by different institutional blockholders, and a tendency to support incumbent management at least in the first instance [see for example Cosh, Hughes and Singh (1990)]. It may also reflect misjudgments about the likelihood of a change of CEO affecting a company's performance and the existence of other means of effecting CEO change. Examples of both institutional intervention and acquiesence were found when individual case studies of our sample company dismissals were carried out. The role of the blockholders such as other industrial companies in effecting changes also emerges from the three illustrative examples chosen here[7]. In one case the institutional pressure produced a change of CEO and the appointment of head hunted "company doctor" who then effected a substantial rationalization programme and turnaround in profits in the short term. In another case

small shareholder dissatisfaction at poor performance at an annual general meeting was initially not supported by the major institutional investor, which stated that it would support incumbent management strategy. A strategy which in the event failed and led to subsequent CEO changes. In a third case changes were effected in the face of financial distress not by institutional investors but by CEO change induced by a large share purchase by another company who then effected senior board changes.

4. Conclusions

Our econometric results may be simply summarized. We find that executive pay levels, and changes, in our companies are much more closely aligned with company size and growth than with either relative share performance or the relative return on capital employed. There is a positive link between poor performance measured in terms of the relative return on capital employed and CEO dismissal, whilst size reduces the probability of being sacked. The responsiveness of either pay or the probability of dismissal to share or profit performance is however relatively slight compared with the responsiveness to size and growth.

Our dismissal results are the first of their kind for the UK but are broadly consistent with US studies. Our pay results are consistent with other recent studies for the UK except to the extent that our period averaged cross sections, and annual data using relative share returns, has enabled us to identify a more significant shareholder performance impact on pay than other recent UK studies.

In addition to analysing dismissals our results extend existing work in this area in a number of ways. First, we find very little evidence to suggest that the presence of either significant institutional holdings or the presence of non-executive directors restrains the discretionary component of executive pay. Indeed in the case of non-executives the opposite appears to be true. Nor do we find, except in the analysis of annual changes of CEOPAY where the effect is perverse, an effect of either institutional investor holdings or non-executive presence on the sensitivity of pay to shareholder performance measures. Finally the presence or absence of institutional

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holdings and non-executives has at best a weak impact on the probability of CEO dismissal. What we did find was evidence consistent with the existence of strong ratchet effects in CEOPAY based on comparability exercises which stress the link between pay and size, rather than with shareholder performance. To the extent that significant institutional investors and non-executive directors are involved (for example, via remuneration committees) in these exercises, and to the extent that non-executives themselves are remunerated in their executive capacity in other companies, according to similar rules, it is perhaps unsurprising that their presence has insignificant or "perverse" effects on CEOPAY patterns compared with those which agency models might predict[8] Proposals for institutional reform in the shareholders interest, which focus on encouraging the exercise of "voice" by institutional investors, or strengthening the role of non-executives and remuneration committees will have little effect unless they also tackle the way in which comparator groups are identified, and comparative compensation determinants are chosen. There is however a more fundamental question at issue. Should the objective of CEO incentive structures be to align their pay to shareholder measures of welfare, in particular to either absolute or relative share returns calculated on an annual basis. It may be comforting that we find a weaker link between annual remuneration and annual share returns, than we do between averages over longer periods. It can be argued that UK company performance is already driven too much by attention to short run stock market returns and the avoidance of takeover. It would seem perverse, if this were true, to seek to align incentive structures, to these same market returns over a period of a year. It is to be hoped than an enhanced role for 'outside' directors and shareholders will, on the contrary, lead to a strengthening of the longer term performance of their companies.

Notes

1   Full details of the classification methods used for 1970 and 1979 can be found in Cosh and Hughes (1987). The 1979 classification method was used for the 1989 sample.

2   This variable takes the value 1 if the sum of institutional shareholdings over 3% is 15% or more. Here and elsewhere in this paper we model institutional presence by using this dummy variable for two reasons. First a dichotomous variable enables us to capture shift and slope effects in our regression analyses. Secondly it is likely that the sum of 'significant' registered holdings captures the potential for influence because only holders of substantial blocks have a sufficient private incentive to incur the costs of corrective intervention [See for example Cosh, Hughes, Lee and Singh (1989), Shleifer and Vishny (1986)].

3   Of the 11 non-survivors, 9 were acquired (one as a result of a hostile takeover) and 2 failed financially. For these companies and the 64 who survived our data set consists of annual data for 1989-94 (adjusted where appropriate for accounting data changes and in the case of share returns for capitalization changes). This data was compiled directly from hard copy annual company accounts supplemented by share price and accounting data from Extel Financial Services and ICC Limited. Information on CEO dismissal characteristics including age were derived from accounts, direct searches at Companies House and extensive on-line searching of the financial press using FT-Profile.

4   For the purposes of the analysis presented in this paper those companies in which the sum of all financial institutional holdings in excess of 3% was greater than 15%, were classified as having a significant institutional presence. This was measured in 1989 and 1992 and applied to the years 1989-91 and 1992-94 respectively.

5   The residual group of 9 executives who resigned rather than retired but with no identifiable reason for departure contained 3 individuals below the median age of the group who were identified as retiring.

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Following recent US work in this area [e.g. Weisbach (1988) Warner Watts and Wruck (1988)] we classified these 3 as resigning due to poor performance in our analysis of dismissals later in this paper. The median age at retirement in our sample was 62. The median age of those identified as dismissed or resigning due to poor performance was 47 at the date they left the company.

6   An alternative approach, requiring a longer time series than 1989-94, would be to estimate separate appropriately lagged time series regressions for each company and consider the means of the estimated coefficients on the performance variables [see for example Pesaran and Smith (1995) Smith and Szymanski (1993) and for a general discussion of the pooled approach Joskow and Rose (1994)]

7   For the cases of performance related dismissal discussed in the following paragraphs see particularly "Bennett and Fountain: Still tottering" *Investors Chronicle* 6 April 1990; "Company News in Brief: 'Bennett and Fountain'" *Financial Times* 18th July 1990; "The Batteries get a recharge - Chloride" *Financial Times* 1 September 1987; "Dissident Voice at Chloride may arouse holders" *Financial Times* 5 June 1990; "A Certain Sourness in the City - Relations between Investors and Companies" *Financial Times* 3 May 1990; "Chloride profile: Britain's Battery Turkey - Is Chloride the worst managed company in Britain?" *Investors Chronicle* 13 July 1990; 'Electronic Side behind Chloride Slide' *Financial Times* 22 November 1991; "Lords rule in Auditors favour ..." *Financial Ties* 9 February 1990; 'Substantial Pay-Off for Ferranti's former chief' *Financial Times* 20 February 1990, "Company doctor tested by Trying Patient" *Financial Times* 3 October 1991.

8   For a sanguine view of the potential watchdog role of non-executives see Davis and Kay (1990) and Kay and Silberston (1995).
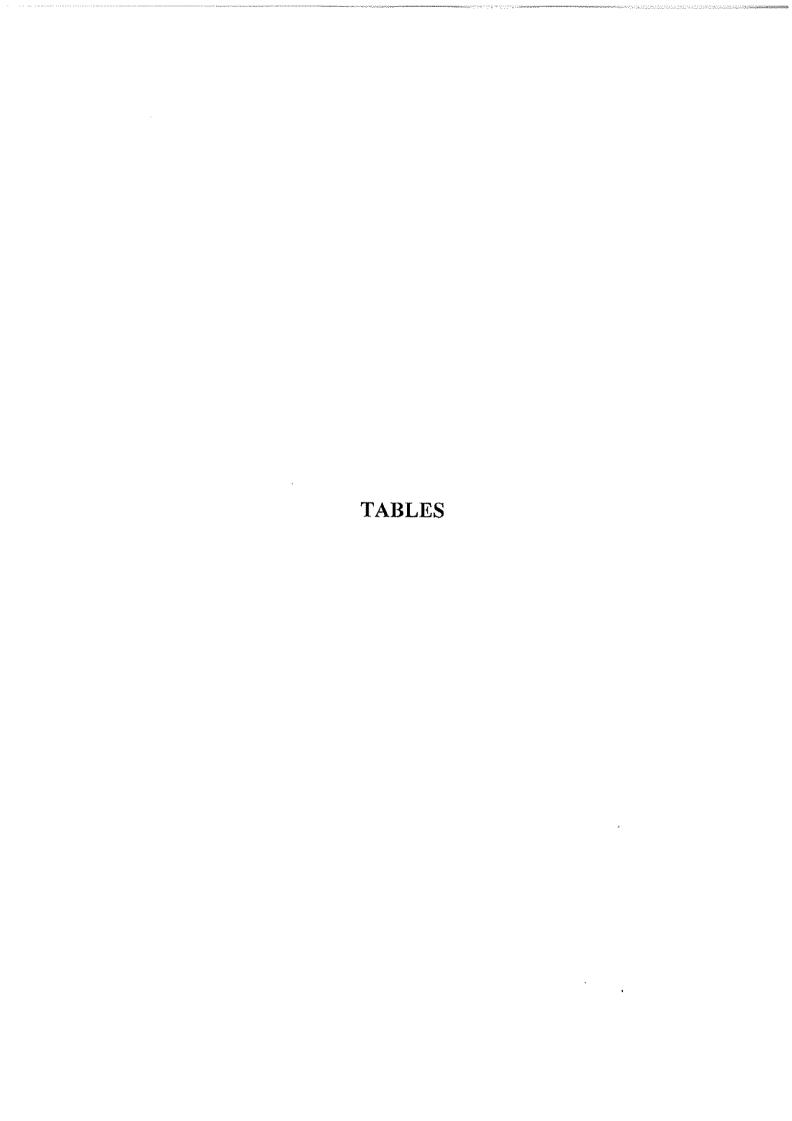
TABLES

Table 1   Median values of board and CEO shareholdings and income - owner-control and management-control samples 1970, 1979, 1989

	1970	1979	1989
OWNER-CONTROLLED			
Number of companies	29	28	53
Sales (£000)	34,807	24,114	20,679
Off-Board Holdings			
Number	0	1	2
Total % identified	0.0%	6.8%	19.9%
Board of Directors			
No. of Directors	7	6	6
No. of Non-ex Directors	1	0	2
Board emoluments (£)	245,822	225,790	288,000
Board Shareholding:			
Excl. Share Incentive (£)	2,487,423	2,017,194	3,398,305
Incl. Share Incentive (£)	0	0	3,694,967
Board Share Control (%)	17.4%	23.1%	34.3%
Chief Executive			
CEO Remuneration (£)	80,904	58,478	69,200
CEO Shareholding:			
Excl. Share Incentive (£)	856,533	747,295	1,515,652
Inc. Share Incentive (£)	0	0	1,595,520
MANAGEMENT-CONTROLLED			
Number of companies	16	14	22
Sales (£000)	76,186	134,518	144,821
Off-Board Holdings			
Number	0	1	3
Total % identified	0.0%	3.0%	22.5%
Board of Directors			
No. of Directors	6	6.5	8
No. of Non-ex Directors	2	3.5	3
Board emoluments (£)	323,860	445,638	520,137
Board Shareholding:			
Excl. Share Incentive (£)	515,153	201,750	205,289
Incl. Share Incentive (£)	0	0	1,152,089
Board Share Control (%)	0.9%	0.1%	1.5%
Chief Executive			
CEO Remuneration (£)	71,659	70,222	106,500
CEO Shareholding:			
Excl. Share Incentive (£)	54,672	42,838	61,306
Inc. Share Incentive (£)	0	0	329,012

Source: Company Reports. Cosh (1975, 1978), Cosh and Hughes (1987, 1989)
All nominal figures have been revalued using the RPI to 1989 prices

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Table 2 Growth in sales, profits, board size and remuneration - 1979-89 for owner-control and management control

	1979		1989		% change 1979-89	
	Mean	Median	Mean	Median	Mean	Median
12 OWNER-CONTROLLED						
Sales (£m)	573.4	51.9	660.5	50.7	49.9	-2.1
Profits (£m)	93.9	6.6	95.2	1.8	5.8	-11.1
No of Directors	6.9	6.0	8.4	7.0	28.5	22.5
No of non-ex. Directors	1.2	0.0	2.6	2.5	-	-
Board Emoluments (£000)	419.0	211.9	670.2	286.5	83.5	82.9
CEO Remuneration (£)	69005	46712	119141	68500	81.5	88.8
8 MANAGEMENT-CONTROLLED						
Sales (£m)	1024.7	439.1	1334.0	346.6	99.6	50.3
Profits (£m)	72.7	31.4	101.3	36.9	136.1	90.7
No of Directors	9.9	12.0	8.8	9.0	0.0	-8.3
No of non-ex. Directors	2.8	3.5	4.1	4.0	-	-
Board Emoluments (£000)	622.0	612.0	969.4	849.3	102.6	64.8
CEO Remuneration (£)	84162	76975	189357	134086	122.4	139.8

All nominal values have been adjusted to 1989 prices

Table 3 Median values of Company Pay and Performance Variables 1989 and 1994

	1989	1994
CEOPAY (£) *	99,370	146,500
ROCE %	21.5	16.8
RETURN %	11.7	11.5
CE (£000) *	15,781	17,105
SALES £000	39,385	49,033
No	64	64

* In 1994 prices

Table 4   Kendall Rank Correlation Coefficients Relating Changes in CEO Pay to Company Characteristics 1989 to 1994

All Companies	RETURN	ROCE	RETURNLAG	ROCELAG	DRETURN	DRETURNLAG	DLNSALES	DLNCE	DISTURB
1989	0.165*	0.162*	0.119	0.118	0.14	n/a	0.138	0.223**	0.101
1990	0.226**	0.146*	0.184**	-0.072	-0.004	0.282**	0.166*	0.048	0.273***
1991	0.057	0.012	0.038	0.146*	0.068	0.103	0.140	0.089	0.176**
1992	0.046	0.190**	0.099	-0.012	-0.016	-0.009	0.128**	0.194**	0.260**
1993	0.021	0.030	0.008	0.028	0.001	0.092	0.143*	0.093	0.292***
1994	0.069	-0.074	0.072	-0.035	-0.008	0.112	-0.110	-0.037	0.147*
1989-1994	0.104**	0.105***	0.060*	0.067**	0.052	0.074*	0.161***	0.129***	0.143***
Companies with Institutional Presence 1989-94	0.063	0.123**	0.034	0.137	0.026	-0.002	0.12	0.162***	0.158***

*   Significant at 10% level

**   Significant at 5% level

*** Significant at 1% level

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Table 5   Proportion of Non-Executive Directors on the Board (PROPNONEX) in 1989 and 1994

	All 64 Companies		37 Companies with Institutional Presence	38 Owner Control Companies	32 'Smaller Companies'
PROPNONEX (%)	1989 (%)	1994 (%)	1994 (%)	1994 (%)	1994 (%)
0<10	12.5	9.4	5.4	13.2	18.8
10<30	23.4	17.2	16.2	21.1	21.9
30<40	15.7	20.3	27.0	18.4	21.9
40<50	20.3	26.6	29.7	28.9	25.0
>50	28.1	26.6	21.6	18.4	12.5
Total	100.0	100.0	100.0	100.0	100.0
Median (%)	33.3	38.8	37.5	33.3	33.3*

* Significantly different from median for larger companies at 10% level using Mann Whitney 'U' test.

Table 6   The Distribution of Annual Rates of Director Turnover (DIRTURN) 1989-94

	1989-94	
DIRTURN	No	%
0<10	189	49.2
10<20	60	15.6
20<30	65	16.9
30<40	33	8.6
40<50	14	3.6
>50	23	6.0
Total	384	100.0
Mean %		12.8

Table 7   The Reasons for Departures of CEOs 1989-94

Reason for Departure	No	%
Died/Illness	3	4.8
Reached retirement age and left board	4	6.3
Reached retirement age and stayed on board	22	34.9
Resigned or dismissed due to poor performance	21	33.3
Resigned to take up a better post	4	6.3
Resigned but no details available	9	14.4
TOTAL	63	100.0

Table 8   Regression Results – Determinants of CEO Pay 1989-94
Cross-sectional results with logarithm of CEO pay as dependent variable (all results corrected for heteroscedasticity)

Sample	Shareholder Measure (SM)	Constant	DUMC	DUMI	SM	SM.DUMI	LNCE	LNCE.DUMI	PROPNONEX	No	R^2	R^2
Period Averages[1]												
RUN (1)	ROCE	9.16** (43.52)	-	0.24 (0.54)	0.48** (3.69)	0.006 (0.01)	0.24** (13.25)	-0.02 (0.54)	-	44	0.73	0.69
RUN (2)	RETURN	8.97** (25.75)	-	-0.16 (0.29)	0.42* (1.93)	0.026 (0.06)	0.22** (7.88)	0.01 (0.36)	-	43	0.71	0.67
Pooled Annual[2]												
RUN (3)	ROCE	9.15** (79.22)	-	-	-0.005 (0.09)	-	0.27** (27.45)	-	-	378	0.72	0.72
RUN (4)	RELRET	9.22** (71.83)	-	-	-0.006 (0.12)	-	0.27** (23.67)	-	-	372	0.70	0.69
RUN (5)	ROCE	9.05** (60.57)**	0.05 (0.17)	-0.00 (0.08)	-0.011 (0.19)	-	0.28** (24.07)	-	-	378	0.72	0.71
RUN (6)	RELRET	9.16** (55.75)	0.04 (0.77)	-0.02 (0.52)	-0.011 (0.22)	-	0.27** (21.01)	-	-	372	0.70	0.69
RUN (7)	ROCE	9.17** (69.89)	-	-0.08 (0.37)	0.052 (0.56)	-0.098 (0.83)	0.27** (23.48)	0.01 (0.35)	-	378	0.72	0.71
RUN (8)	RELRET	9.31** (60.82)	-	-0.27 (1.10)	-0.088 (1.52)	0.198* (1.88)	0.26** (18.71)	0.02 (1.00)	-	372	0.70	0.70
RUN (9)	RELRET	9.21** (53.94)	0.05 (1.26)	-0.32 (-1.31)	-0.093 (-1.61)	0.197* (1.85)	0.26** (17.178)	0.03 (1.23)	0.21** (2.413)	371	0.71	0.70

(t-ratios are shown in parentheses)
** indicates significance at 5% level or better
* indicates significance at 10% level or better

[1]   This sample contains only those companies for which DUMI had the same value throughout the period.
[2]   The regression runs included time dummy variables which are not reported in the table above, and which were significant in each run reported here.

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Table 9   Regression Results - Determinants of Changes in CEO Pay 1989-94. Cross-sectional result with change in CEO Pay, D(LNCEOPAY), as dependent variable (All results corrected for heteroscedasticity)

	Whole Period Changes[1]				Pooled Annual Changes[2]				
	RUN(1)	RUN(2)	RUN(3)	RUN(4)	RUN(5)	RUN(6)	RUN(7)	RUN(8)	RUN(9)
Shareholder measure (SM)	ROCE	RETURN	ROCE	RETURN	ROCE	RELRET	RELRET	RELRET	ROCE
Size Measure	CE	CE	CE	CE	CE	SALES	SALES	CE	CE
Constant	0.44**	0.45**	4.64**	5.40**	2.63**	2.08**	1.87**	2.49**	2.73**
	(9.15)	(9.56)	(3.53)	(3.44)	(4.77)	(4.58)	(3.65)	(4.32)	(4.35)
SM	-	-	-0.00	0.13	-0.02	0.11**	-	0.06	-0.04
			(0.01)	(0.34)	(0.40)	(2.34)		(1.55)	(0.74)
D(SM)	0.37**	-0.10	0.29	-0.05	0.11	0.09**	0.01	-	-
	(3.44)	(0.64)	(1.11)	(0.34)	(0.66)	(2.30)	(0.24)		
DUMI.D(SM)	-0.51**	0.08	-0.37*	0.20	-0.15	0.03	-0.01	-	-
	(2.81)	(0.38)	(1.65)	(1.12)	(0.85)	(0.85)	(0.26)		
D(SM)LAG	-	-	-	-	-	-	0.10**	0.10**	0.09
							(2.11)	(2.13)	(0.61)
DUMI.D(SM)LAG	-	-	-	-	-	-	-0.12*	-0.10*	-0.12
							(1.85)	(1.75)	(0.73)
D(SIZE)	0.28**	0.32**	0.29**	0.30**	0.00	0.33**	0.30*	0.04	-0.12
	(7.18)	(6.43)	(8.09)	(5.02)	(0.03)	(2.25)	(1.72)	(0.22)	(0.85)
DUMI.D(SIZE)	-0.17	-0.24**	-0.08	-0.14	0.18	-0.14	-0.13	0.13	0.26*
	(1.49)	(2.06)	(0.77)	(1.47)	(1.38)	(0.85)	(0.68)	(0.69)	(1.64)
DUM0	-	-	-	-	-0.11**	0.06*	-0.02	-0.06	-0.13**
					(2.65)	(1.40)	(0.52)	(1.35)	(2.31)
DISTURB	-	-	0.48**	0.59**	0.28**	0.23**	0.20**	0.27**	0.29**
			(3.17)	(3.37)	(4.67)	(4.54)	(3.56)	(4.25)	(4.26)
PROPNONEX	-	-	-	-	-	0.14**	-	-	-
						(2.29)			
N	44	43	44	43	369	355	291	284	305
R^2	0.52	0.48	0.60	0.59	0.20	0.18	0.15	0.20	0.18
R^2	0.48	0.43	0.54	0.52	0.18	0.17	0.11	0.16	0.15

1,2 see footnotes for Table 4.

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Table 10   Relationship between CEO Turnover, CEO Dismissal and Company Performance 1989-94. Logistic Regression

	CEO DISMISSALS							OTHER TURNOVER
	RUN(1)	RUN(2)	RUN(3)	RUN(4)	RUN(5)	RUN(6)	RUN(7)	RUN(8)
Constant	-2.71** (156.38)	-2.75** (148.25)	-2.83** (157.31)	-2.83** (156.82)	-2.80** (153.84)	-0.02 (0.00)	0.89 (0.33)	-3.39** (10.74)
RELRET	-0.95* (2.78)	0.67 (1.44)	-	-	-0.52 (0.81)	-	-	
RELROC	-		-0.77** (5.10)	-0.83** (5.42)	-0.68** (3.57)	-0.53* (2.81)	-0.35 (1.64)	-0.34 (0.55)
LNCE	-		-		-	-0.29** (4.85)	-0.41** (5.53)	0.11 (1.17)
RELRETLAG	-	-0.98 (2.52)	-		-	-	-	
RELROCLAG	-	-	-	0.41 (0.78)	-	-	-	
DUMI	-			-	-	-	-3.83 (1.92)	
DUMLNCE	-	-			-	-	0.38 (1.77)	
DUMRELROC	-						-0.94 (2.15)	
PROPNONEX							0.48 (0.16)	
Sample Size	379	372	383	383	379	381	381	352
Number of Dismissals	24	23	24	24	24	24	24	32
Significance of Model	0.0767	0.0740	0.0018	0.0051	0.0043	0.0006	0.0070	0.482

Wald Statistic in brackets. ** Significant at 5% level or better * Significant at 10% level.

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References

Baker, G.P., Jensen, M.C. and Murphy, K.J. (1988) 'Compensation and Incentives: Practice vs. Theory', *Journal of Finance*, Vol. XLIII, No. 3., July, pp. 593-616.

Cadbury (1992) *Committee on the Financial Aspects of Corporate Governance*, Draft Report (Cadbury Committee)

Charkham, J. (1994) 'A Larger Role for Institutional Investors' in Dimsdale N. and Prevezer, M. (eds) *Capital Markets and Corporate Governance*, Clarendon Press, Oxford.

Conyon, M.J. and Leech, D. (1993) 'Top Pay, Company Performance and Corporate Governance'. *Warwick Economic Research Papers No. 410*, Warwick University.

Cosh, A.D. (1975) 'The Remuneration of Chief Executives in the United Kingdom' *Economic Journal*, Vol. 85, March, pp. 75-94.

Cosh, A.D. (1978) *Executive Incomes and Shareholdings, Business Motivation and Company Performance*, PhD Dissertation, University of Cambridge

Cosh, A.D. and Hughes, A. (1987) 'The Anatomy of Corporate Control: Directors Shareholders and Executive Remuneration in Giant US and UK Corporations' *Cambridge Journal of Economics*, Vol. 11, pp. 285-313

Cosh, A.D. and Hughes, A. (1989) 'Institutional Shareownership Management Incentive Structures, Acquisition Intensity and Company Performance' *La Trobe University School of Economics Discussion Paper*, Bundoora, Melbourne.

Cosh, A.D., Hughes, A., Lee, K. and Singh, A. (1989) 'Institutional Investment Mergers and the Market for Corporate Control' *International Journal of Industrial Organisation*, Vol. 7, No. 1, March pp. 73-100.

Cosh, A.D., Hughes, A. and Singh, A. (1990) 'Analytical and Policy Issues in the UK' in Cosh, A., Hughes, A., Singh, A., Carty, J. and Plender, J. *Takeovers and Short Termism in the UK*, IPPR Industrial Policy Paper No. 3, London.

Coughlan, A. and Schmidt, R. (1985) 'Executive Compensation, Management turnover, and Firm Performance: An Empirical Investigation', *Journal of Accounting and Economics*, Vol. 7, pp. 43-66.

Davis, E. and Kay, J.A. (1990) 'Corporate Governance, Takeovers, and the Role of the Non-Executive Director' *Business Strategy Review*, 1/3 Autumn, pp: 17-35.

Furtado, E.P.H. and Rozeff, M.S. (1987) 'The Wealth Effects of Company Initiated Management Changes' *Journal of Financial Economics*, 18, pp. 147-160.

Gilson, S.C. (1985) 'Management Turnover and Financial Distress' *Journal of Financial Economics*, Vol. 25, pp. 241-62.

Gilson, S.C. and Vetsuypens, M.R. (1993) 'CEO Compensation in Financially Distressed Firms: An Empirical Analysis' *Journal of Finance* Vol. XLVIII, No. 2, June pp. 425-458.

Gregg, P., Machin, S. and Szymanski, S. (1993) 'The disappearing relationship between director's pay and corporate performance' *British Journal of Industrial Relations*, Vol. 31:1, March pp. 1-10.

Holström, B. (1979) 'Moral Hazard and Observability' *Bell Journal of Economics*, No. 10, Spring pp. 74-91.

Jensen, M.C. and Murphy, K.J. (1990) 'Performance Pay and Top Management Incentives' *Journal of Political Economy*, Vol.98, pp. 225-264.

Joskow, P.L. and Rose, N.L. (1994) 'CEO Pay and Firm Performance: Dynamics Assymetries and Alternative Performance Measures', *National Bureau of Economic Research Working Paper* 4976

Kay, J.A. and Silberston, A. (1995) 'Corporate Governance', *National Institute Economic Review*, August, pp. 84-96.

Main, B.M.G. (1991) 'Top Executive Pay and Performance' *Managerial and Decision Economics*, Vol. 12, pp. 219-229.

Main, B.M.G., Bruce, A. and Buck, T. (1994) 'Total Board Remuneration and Company Performance' *University of Edinburgh Discussion Paper Series*, 1994:II. p. 27.

Marris, R.L. (1964) *The Economic Theory of Managerial Capitalism*, Macmillan, London

Martin, K.J. and McConnell, J.J. (1991) 'Corporate Performance, Corporate Takeovers and Management Turnover' *Journal of Finance*, Vol. XLVI, No. 2, June pp. 671-687

Meeks, G. and Whittington, G. (1975) 'Directors' Pay, Growth and Profitability', *Journal of Industrial Economics*, Vol. 24, No. 1 (September) pp. 1-14.

Murphy, K.J. (1985) "Corporate Performance and Managerial Remuneration: An Empirical Analysis" *Journal of Accounting and Economics*, 7 April, pp. 11-42.

Pesaran, M.H., and Smith, R.P. (1995) Estimating Long-Run Relationships from Dynamic Heterogeneous Panels, *Journal of*

Econometrics, 1995, Vol. 68, pp. 79-113.

Roberts, D. (1959) *Executive Compensation*, The Free Press, New York.

Rosen, S. (1992) 'Contracts and the Market for Executives' in L. Werin and H. Wijkander (eds) *Contract Economics*, Basil Blackwell, Oxford, pp. 181-211.

Shleifer, A. and Vishny, R.W. (1986) 'Large Shareholders and Corporate Control' *Journal of Political Economy*, Vol. 94, No. 3, pp. 461-488

Simon, H.A. (1957) 'The Compensation of Executives', *Sociometry*, March.

Smith, R.P. and Szymanski, S. (1993) 'Executive Pay and Performance: The empirical importance of Incentive Compatibility' mimeo, London Business School and Birkbeck College.

Warner, J.B, Watts, R.L. and Wruck, K.H. (1988) 'Stock Prices and Top Management Changes' *Journal of Financial Economics*, 20, pp. 461-492.

Weisbach, M.S.D. (1988) 'Outside Directors and CEO Turnover' *Journal of Financial Economics*, 20, pp. 431-460.