CEO Age and Top Executive Pay: A UK Empirical Study

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Abstract. This study examines the implications that CEO age has on executive pay regarding data collected in a UK setting. Where prior research has typically focused on total pay (salary plus bonus), this study offers a more complete conceptual model by splitting pay into salary, annual bonus, and share options. In doing so, we found that the relationship between CEO salaries and age are significantly related with this association weakening over time. Another interesting finding not captured by prior research was that the relationship between CEO age and bonus appears to be non-linear in nature. Figures 2 which depicts this non-linear function suggest at about age 53, the proportion of bonus as a percentage of salary begins to decrease at an increasing rate. As a whole, these findings suggest corporate pay committees should consider family and the financial circumstances of the executive when designing remuneration schemes.

Key words: cash remuneration, CEO age, executive pay

1. Introduction

The remuneration of top executives in the UK continues to be the subject of widespread debate among both academics and the press. Since as far back as 1925 (Taussig and Barker, 1925) there have been several hundred studies which have explored this controversial phenomenon. A primary question to arise from many of these studies is whether the remuneration of top executives is more closely tied to performance or size of the firm. The theoretical reasoning behind this premise is centred on the issue of control. If shareholders are in control then management actions will probably reflect the interests of its shareholders; that is, share price maximisation. In contrast if management retains control then shareholders will conceivably have little influence over the pay setting process. Then a less risky element such as sales (size) maximisation or its equivalent would be a preferred alternative for which management would link pay.

An interesting feature regarding the literature is even after controlling for size, these studies have found relatively slight, although statistically significant, associations between the parameters in question (Jensen and Murphy, 1990). These researchers have not only concluded performance and size play at best a modest role in determining executive pay, but that firms should find ways to tighten the

link. This lack of strong statistical evidence suggests other contingencies may be significant in explaining pays variance. In particular, one such contingency is the age parameter, a personal attribute. Rhodes (1983) asserts the psychosocial effects associated with ageing (i.e. changes in values, needs, and expectations) may have a compelling influence on both the financial and career security needs of an executive. Consequently, this could affect the attitude an individual holds towards specific strategic issues facing the organisation. Alternatives chosen for resolving these issues may therefore reflect the preferences of the executive rather than the shareholder.

Scant academic research exists which explores age as a determinant and what empirical work exists is primarily of US origin (Deckop, 1988; Hogan and McPheters, 1980). Thus, the purpose of this paper is to extend prior research and establish to what extent CEO age influences CEO remuneration. This study differs from prior research concerning age and remuneration in at least two ways. First, it offers a more complete conceptual model regarding executive pay in that it splits remuneration by salary, annual bonus, and share options to ascertain how age may influence a CEO's choice of the pay mix. Second, it represents an initial attempt to utilise data regarding CEOs in a UK setting.

We begin in section two by examining the theoretical importance of CEO age as an explanatory parameter. Section three outlines the methodology, in particular, data and sample, descriptive remuneration statistics regarding UK CEO's, variable measurement, and econometric modelling. Section four presents the findings from the statistical analysis. Section five is reserved for the discussion of these findings and section six presents conclusions reached from the study.

2. The Significance of Age

The significance of age as a contingency is as follows. As a CEO's age increases, the intellectual capabilities of the executive are enhanced due to the knowledge and experience gained from the position as well as the attainment of education. Lazear (1981) suggests the managerial labour markets will quickly adjust wages to reflect these capabilities; that is earnings will grow with experience and education. Through out this process a CEO becomes wealthier and may experience a diminishing marginal utility of income as well as a noticeable decline in risk-aversion. As a result, the accumulation of such wealth induces a change in individual values, needs, and expectations (Rhodes, 1983). In turn, the need for cash will weaken as one gets older because of a decrease in human life-cycle related obligations and dependencies (e.g. domicile and siblings). Assuming wealth increases with age, then we would expect the typical CEO to manifest a willingness to accept additional exposure to risk and especially favour long-term forms of remuneration such as share options (Lewellen, Loderer, and Martin, 1987).

The argument surrounding CEO age as a determinant may be more complex than implied above. Figure 1 shows that CEO age, size and performance may have
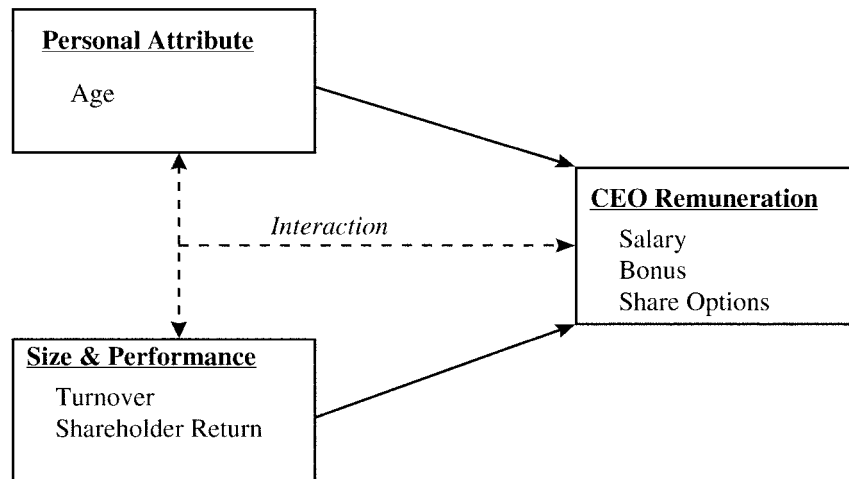
Figure 1.

a direct influence on CEO remuneration, but in this study allowance will also be made for the possibility of explaining executive pay as the outcome of interactive effects between CEO age, and size and performance. For example, whilst age may or may not have direct influence over each component of pay, it has been found to play an important part in an executive's strategic actions; actions which in turn directly effect the size and/or performance of the organisation (Hambrick and Mason, 1984). Thus, the interactive effects between age and size or performance may be stronger than the sum of the possible direct effects.

3. Background and Hypothesis

Prior empirical research that investigates age as a contingency has been generally inconclusive. To illustrate, Deckop (1988) examined the incremental effect of CEO age on cash remuneration, as measured by salary plus bonus, and concluded that age exercises little significance as a pay determinant. In contrast, however, Hogan and McPheters (1980) found this relationship to be both positive and significant. Inconsistencies associated with these findings may be attributed to methodological limitations such as the narrow focus on remuneration; that is, where such studies have employed the aggregate of salary plus bonus as the pay construct. Since remuneration arrangements in practice are multi-dimensional (i.e. salary, bonus, and share options), we believe examining CEO age and its relationship to each individual component could sufficiently explain much of pay's variance.

In light of this argument, the relationship between a firm's size and salary has been maintained throughout much of the literature (Finkelstein and Hambrick, 1996; McKnight, 1996; Laing and Weir, 1999). A logical explanation is an organisation's size is associated with job complexity. As an organisation grows

larger and more complex, the level of knowledge and understanding regarding the position becomes more demanding. Thus, pay should increase for any additional human capital requirement demanded by the position. Accordingly, CEO age is expected to have a positive effect on the absolute level of salary based on the idea that older CEO's over time gain valuable experience. This experience serves as a springboard for CEO's to move on and oversee much larger firms and, in turn, their pay packages. Hence, we expect the association between CEO age and the level of salary to be positive.

> Hypothesis 1: The relationship between CEO age and the level of salary will be positively related.

Given the importance of size, we anticipate this to become less of an aspiration for older CEO's. The rationale is with age comes wealth and as a result both the career and financial security needs of the CEO will take on new meaning. Moreover, as one closes in on retirement, stability becomes an espoused value and the risks associated with changing jobs (i.e. having to prove ones self in this new position) for a larger base salary assumes less importance. Therefore, we expect the relationship between firm size and salary to be positive, however, it will weaken as CEO age increases.

> Hypothesis 2: The relationship between firm size and the level of salary will be positive. This relationship, as measured by the regression coefficient, will weaken as CEO age increases.

As in the case of CEO age, firm size, and salary, focusing on the sensitivity of changes in remuneration to changes in firm performance is important as well. An argument earlier suggested CEOs will generally prefer to link their absolute level of pay to firm size because it is not as volatile (risk) as performance. However, if in fact older, rather than younger CEOs, are wealthier (wealth assumed to be primarily generated by the accumulation of shares over time in their respected company), the potential for divergence of interest to arise between executive and shareholder would be minimised. As a result, because of the CEO's vested financial interest any investment decisions of the executive on behalf of the firm would be less myopic; that is, more long-term oriented and in the best interest of the shareholder. Therefore, we not only foresee a positive relationship between performance and incentive pay (i.e. performance bonus and share options) over time, but because in theory wealth should increase with age, we expect CEO age to strengthen any such relationship. Alternatively, since older executives are expected to attach greater importance to variable (incentive pay) rather fixed components such as salary then we would expect CEO age to weaken the relationship between performance and salary over time. Bearing this in mind, the following hypotheses are set-forth.

> Hypothesis 3: The relationship between performance and changes in CEO salary over time will be positive. This relationship, as measured by the regression coefficient, will weaken as CEO age increases.

Hypothesis 4: The relationship between performance and changes in CEO incentive pay will be positive. This relationship, as measured by the regression coefficient, will strengthen as CEO age increases.

3.1. SUMMARY

Prevailing empirical research has focused on company size and performance in determining CEO remuneration. However, we believe much of the variance in pay may be attributable to the personal attribute, age. Rather than focusing on the aggregate of salary and bonus as the pay construct, a contribution of this study is it splits total remuneration into its primary pecuniary components; salary, annual bonus, and share options. We then examine the direct and interactive effects of CEO age on each of these components. Research on statistical interactions testing for moderating effects of the age parameter is limited within the executive pay literature.

It should be noted that one to the primary objectives of this paper was to examine empirically the possible psychosocial effects associated with the ageing process (i.e. changes in individual values, needs, and expectations) and how such may influence the choice of the pay mix. It was not to investigate tenure's implications on the pay mix primarily because tenure is more associated with the power dimension. Power in this instance being referred to as a political factor where the CEO has the ability over time to develop relationships with key individuals and, in turn, acquire their respect and confidence; enough perhaps to influence their voting rights. One may very well argue, however, that our regression equation should have controlled for CEO tenure merely because CEO age and tenure in all likelihood would be collinear and, in turn, the age coefficient would be capturing much of the tenure effect. This, however, was not the case for a Pearson test (McKnight, 1998) between age and tenure yielded a 0.36 correlation suggesting the relationship is, at best, weak. Since a Pearson test doesn't ensure independence, a single regression was also competed on each CEO age and tenure, and both the level and direction of the coefficients remained unaffected. As a result, we are confident that the results provided herewith are those capturing the age rather than tenure effect.

4. Methodology

4.1. DATA AND SAMPLE

Data was gathered from two principal sources consisting of annual reports and FAME (Financial Analysis Made Easy) analysed through a pooled time-series regression. The period under investigation is from 1992 to 1996 representing three years in total. The sample consists of over 100 firms which were chosen based on the following criteria: 1) the firm must be of UK origin, and 2) the firm must be publicly held. In all, the sample will represent at least eight major activity groups

as measured by the 4-digit SIC code which is comprised of firms operating in over 44 specific business sectors.

4.2. Variable measurements

A limitation with prior research is its narrow definition of executive remuneration: salary plus bonus (Deckop, 1988; Hogan and McPheters, 1980). It has been found that by splitting pay into its primary pecuniary components the sensitivity of pay to performance is more pronounced (McKnight, 1996). Therefore, remuneration for the purpose of this study will be operationalised as three components: salary, performance bonus, and share options.

Salary is a fixed form of remuneration and is normally paid without challenge as opposed to bonuses which are a short-term variable component of pay linked to some element of performance, generally over a one year period. Although salary was clearly detailed in the annual reports, bonuses and share options proved more problematic. A timing problem arose with bonuses primarily because some firms reported them in the year paid (succeeding year) rather than the year earned (current year). This required considerable effort to reconcile if we were to precisely adjust for the time lag.

A share option is basically a call option and dependent on the variation in share price. It is a long-term component of pay and grants the holder a right to purchase a specific number of shares within a definite time period at a prearranged price. The Black-Scholes option formula has been employed by numerous research studies for valuing executive share options and we to adopt the financial model for this study (Merton, 1973; Murphy, 1985). The model has been modified to recognise those options which have been exercised as well. The Black-Scholes is estimated as follows:

$$\text{Options Value} = N_t[Pe^{-dT}\Phi(Z) - Xe^{-r_F^T}\Phi(Z - \sigma\sqrt{T})] + E_t(P' - X),$$

where:
1) Φ is the cumulative standard normal distribution function,
2) N is the number of share options held,
3) E is the number of share options exercised,
4) P is the share price as of the year end,
5) P' is the share price on date of exercise,
6) X is the exercise price,
7) T is the time to expiration,
8) r_F is the risk free rate,
9) d is the expected dividend yield for the remaining life of the option,
10) σ is the expected stock return volatility over remaining life of the option,
11) $Z = [\ln(P/X) + T(r_F - d + \sigma^2/2)]/\sigma\sqrt{T}$, and
12) $E_t(P' - X)$ denotes those options which were exercised during the period.

Explanatory variables are age, size and performance. CEO *Age* is simply the age of the CEO. Annual reports were most informative with respect to these parameters, albeit several elected not to report such data. To obtain this data required examining two sections in the annual report. These sections were frequently titled; Board of Directors and Directors' Emoluments. As one may imagine, this was a troublesome exercise for it first required identifying the highest paid director under the emolument section and then turning to the Board of Directors section and matching the director to their respective title and age.

Size is operationalised as turnover (sales). *Performance* is comprised of two dimensions; changes in turnover and shareholder return.[1] Shareholder return (SR_{it}) is the share price return realised by the shareholders. It is defined as:

$$SR_{it} = [(\ln(Sp_{it} + d_{it})) - \ln Sp_{it} - 1]$$

where ln is the natural logarithm and Sp_{it} is the closing year share price for firm i in period t, d_{it} the dividends paid by firm i in the year t minus $\ln Sp_{it-1}$ the natural logarithm of the closing year share price for firm i in period $t - 1$.[2] All dividends have been calculated on a continuously reinvested basis. Other than bonus, natural logarithm transformations (ln) of all variables were employed to reduce the skewness of our distribution of firms.[3]

4.3. ECONOMETRIC MODELLING

We postulate executive remuneration is not only a function of size and performance but CEO age as well. Bearing this in mind, the following econometric equations are estimated to test our theoretical supposition:

$$REMU_i = \alpha + \beta_1(A)_i + \beta_2(S)_i + \beta_3(SA)_i + e_i \tag{1}$$
$$\Delta REMU_i = \alpha + \beta_1(A)_i + \beta_2(P)_i + \beta_3(PA)_i + e_i \tag{2}$$

Model (1) predicts that the left hand side variable $REMU_i$ will be influenced by CEO age (A_i) and size (S_i). Moreover, model (2) predicts that ($REMU_i$ by CEO age (A_i) and performance (P_i). Where $REMU_i$ is the level, $\Delta REMU_i$ is the change in salary and share options. Bonus is expressed in percentages with its level divided by salary. Furthermore, we also employ the interaction of various control variables regarding size (SA_i) and performance (PA_i) to capture their interaction effects on pay. The interaction term is important for it allows one to measure, in more precise terms, the change in the slope of the relationship. A_i is a vector representing age for CEO i. Moreover, where S_i is the size of the firm represented by turnover for executive i, P_i is performance defined as shareholder return and change in turnover. Finally, SA_i and PA_i are the interaction between size and age and performance and age respectively (Stone and Hollenbeck, 1984).

Explanatory variables will be lag $t - 1$ for regression purposes to dependent variables salary and salary and bonus for obvious reasons. First, in theory,

Table I. Descriptive statistics regarding executive age, and pay
for the year 1996

Explanatory variable	Mean 1996 (£)	Minimum 1996 (£)	Maximum 1996 (£)
Age	55	42	69
Salary	310,090	118,000	1,125,000
Bonus	75,612	0	544,717
Share	637,701	0	5,896,313

salaries are set at the beginning of an accounting period, they would there-
fore be conditional on prior year realisation. Second, since prior research has
generally employed salary plus bonus as the pay construct, we wish to remain
methodologically consistent in comparing findings.

5. Results and Discussion

Table I provides descriptive statistics regarding the median, maximum, and
minimum's for specific variables. The age of top management ranged from 42 to
69 years with the median age consisting of 53 years. A large variance in CEO
salary was found with the minimum of £118,000 and the maximum an opulent
£1,125,000. A more interesting point manifested by Table I was the mean value
of executive share options. According to the Black-Scholes model, one executive
held share options valued at nearly £6 million. This is not at all surprising when
considering the mean executive option valuations exceeded £600,000.

Finally, a Pearson correlation matrix (not shown) suggested there was not a
significant level of collinearity between any of our explanatory variables. We,
therefore, believe the regression coefficients to be reliable with respect to their
explanatory power.

5.1. SIZE AND PERFORMANCE

Before discussing the hypotheses, it is important to acknowledge the more meritor-
ious of the relationships found between size, and performance and pay. As for size,
turnover show an apparently strong relationship to the level of executive salaries
which are consistent with the findings of prior studies. The elasticity of salary to
turnover as measured by the coefficient estimate of 0.25 suggesting, on average, a
10 percent larger firm will pay its executives 2.5 percent greater salaries. The coeffi-
cients t-value proposes this relationship is sharply and significantly different from
zero. As a whole, executives appear to be paid for the size of their organisations.

In respect to performance, the coefficients for turnover and shareholder return were both positive and significantly related to the change in salary and executive share options respectively. A more conspicuous feature of these findings, however, is the relationship between shareholder return and share options. The coefficient regarding the sensitivity of changes in share options to changes in shareholder value was modest (1.6) and significant (t-value 16.1). Applying Murphy's (1985) interpretation of regressions based on natural logarithms, *ceteris paribus*, a 10 percent increase in firm value will translate into a 16 percent increase in the value of an executive's share options. Clearly this is a finding which seems to echo the thoughts of Jensen and Murphy (1990) that:

> the empirical relationship between the pay of top-level executives and firm performance, while positive and statistically significant, is small for an occupation in which incentive pay is expected to play a much more important role.

In summary, this is an initial glance at just how sensitive executive share options are to shareholder returns in a UK context.[4] Prior UK studies have typically focused on the aggregate of salary and annual bonus as the sole pay construct. All told, it doesn't seem to matter which sides of the Atlantic that you reside, executive pay is not as sensitive to performance as shareholders may desire. Corporate entities appear to be troubled by the concept of linking pay to performance; that is, insofar as the Black-Scholes model valuations are concerned.[5]

5.2. Hypotheses

Hypothesis 1 predicts that the relationship between CEO age and salary will be positively related. This postulation coincides with the standard labour economics argument that age should determine pay. As expected, the results provided by Table II support hypothesis 1, suggesting age is an important variable (t-value 3.1) in explaining the level of executive salaries.

The results of hypothesis 2 are found in Table II as well. Hypothesis 2 predicts the association between firm size and the level of salary will be positive with this relationship weakening as CEO age increases. As predicted, the results of size, as measured by ln(Turnover), was certainly an important influence on the level of executive salaries. Even more interesting was the fact our interaction term, size by age, was found significant and negatively related to executive salaries. The findings of hypothesis 1 and 2 suggests over time the average executive gains valuable knowledge and experience which further enhances their marketability with respect to the managerial labour markets. An executive therefore may move to a firm which is larger and more complex with which such talents and skills are more generously rewarded. However, the interaction terms negative coefficient (t-statistic -3.0) suggests to some extent age undermines the relationship between size and salary. This finding seems to square with the notion that over time executives may become

Table II. Regression estimates for age, size by age, level of executive pay for the year

Explanatory variables	Dependent variables (ln[a])					
	Salary	Bonus	Salary	Share[a]	Total pay	Salary/total
Constant	12.57 (594.8)	11.43 (560.5)	12.80 (530.6)	12.47 (114.4)	13.43 (271.1)	0.4692 (27.6)
Age	0.0111 (3.1)***	0.0211 (1.5)	0.0112 (2.9)***	0.0159 (0.78)	0.0095 (1.1)	7.72 (0.23)
ln(Turnover)	0.2501 (12.8)****	0.3660	0.2607 (11.1)****	0.3081 (2.9)**	0.2455	−0.0096 (−0.57)
Turnover by age	−0.0101 (−3.0)***	−0.0190 (−1.6)*	−0.0162 (−3.9)****	−0.0289 (−1.5)	−0.0336	0.0052 (1.7)*
Sample	(n = 209)	(n = 209)	(n = 209)	(n = 195)	(n = 209)	(n = 198)
Adjusted R^2	(0.543)	(0.456)	(0.526)	(0.075)	(0.255)	(0.008)

Remarks

[a] = values are determined by the Black-Scholes model

n = number of observations

Independents predictors are represented first by the coefficients followed by t-statistics (in parenthesis)

**** Significant at 0.001 level

*** Significant at 0.01 level

** Significant at 0.05 level

* Significant at 0.10 level

complacent and content with their present position and not wishing to assume any necessary risks which could jeopardise the firms future stream of earnings, i.e. the risks of changing jobs and having to prove ones self.

Table III reports the results regarding hypothesis 3 and 4 suggest over time age will weaken the relationship between performance and salary and strengthen the association between performance and incentive pay respectively.

Regression estimates in Table III failed to support Hypothesis 3. Although there was, as expected, a significant relationship found between change in turnover and salary, both age and the interaction term, turnover by age, were insignificant.

On the other hand, with respect to hypothesis 4 some interesting results emerged. First, although the coefficient estimates were significant for executive bonuses, they were in the opposite direction of that predicted. Second, we failed to find any relationship between the interaction terms, performance and age, and incentive pay. These findings seemingly cast doubt on previous accepted theories that executives would place higher values on variable rather than fixed components of pay. Perhaps it is not so much the fixed component (i.e. salary) of pay that is not highly valued by the average executive but more so cash remuneration (i.e. salary and bonus). By examining the size by age and turnover by age (negative) coefficients, this assertion takes on greater significance. In short, age may be an important factor on the strategic decisions taken by the executive; that is, they are more long-term oriented and in the best interest of the shareholder.

6. Non-Linearities

Although the age and bonus coefficient, as found in Table III, was positive, the turnover by age and bonus coefficient was negative and contrary to our theoretical forecast. We therefore investigated the possibility of a non-linear association between age and bonus. A regression curve estimation technique was employed to determine the best-fit quadratic. The results indicated an inverted U shaped relationship did exist. Interestingly, this association was much more robust than the fit experienced by the linear regression. As suggested by Figure 2, early on age appears to increase at a decreasing rate then the trend reverses at about the age of 53, at which it begins to decrease at an increasing rate.

We interpret this relationship as follows. At a point in time an executive reaches an age where deferred forms of remuneration are preferred over so-called cash (salary and bonus) components. This may occur because of changes in personal financial circumstances such as the paying off of major obligations (car, domicile, etc.) and sibling expenses (college, etc.). In short, as executives becomes older their attitudes toward risk (more risk-seeking) may change thus favouring long-term forms of pay such as share options over the need for cash. Figure 2 distinctly indicates the point of inflection is 53 years of age beyond which an executives preference towards real cash earnings begins to decrease.

Table III. Regression estimates for age, performance by age, and change in executive pay: 1992 to 1996

Explanatory variables	Dependent variables[a]				
	Salary	Bonus	Salary & bonus	Share[b] options	Total pay
Constant	0.0726 (10.5)	0.2574 (15.8)	0.0646 (4.7)	0.1512 (3.6)	0.1988 (9.5)
Age	−9.70 (−0.74)	0.0064 (2.2)**	3.605 (0.14)	−0.0055 (−0.62)	0.0019 (0.50)
Change in turnover	0.1322 (2.6)***	−0.0608 (−2.4)**	−0.0431 (−0.14)	0.1649 (0.48)	−0.346 (−1.1)
Sharehold return	0.0119 (0.42)	0.1842 (2.9)***	0.0140 (0.25)	1.59 (16.1)****	1.23 (16.4)****
Change in turnover	−0.0052 (−0.47)	−0.0157 (−2.5)**	−0.0236 (−1.1)	0.0896 (1.0)	0.0013 (0.16)
Shareholder by age	0.0013 (0.36)	0.0059 (0.70)	−0.0032 (−0.43)	0.0198 (0.54)	0.0319 (2.9)
Sample	(n = 133)	(n = 202)	(n = 133)	(n = 175)	(n = 201)
Adjusted R^2	(0.016)	(0.067)	(−0.024)	(0.461)	(0.578)

Remarks

[a] = except for bonuses which are a percentage of

[a] = values are determined by the Black-Scholes

n = number of observations

Independents predictors are represented first by the coefficients followed by t-statistics (in parenthesis)

**** Significant at 0.001

*** Significant at 0.01

** Significant at 0.05

* Significant at 0.10

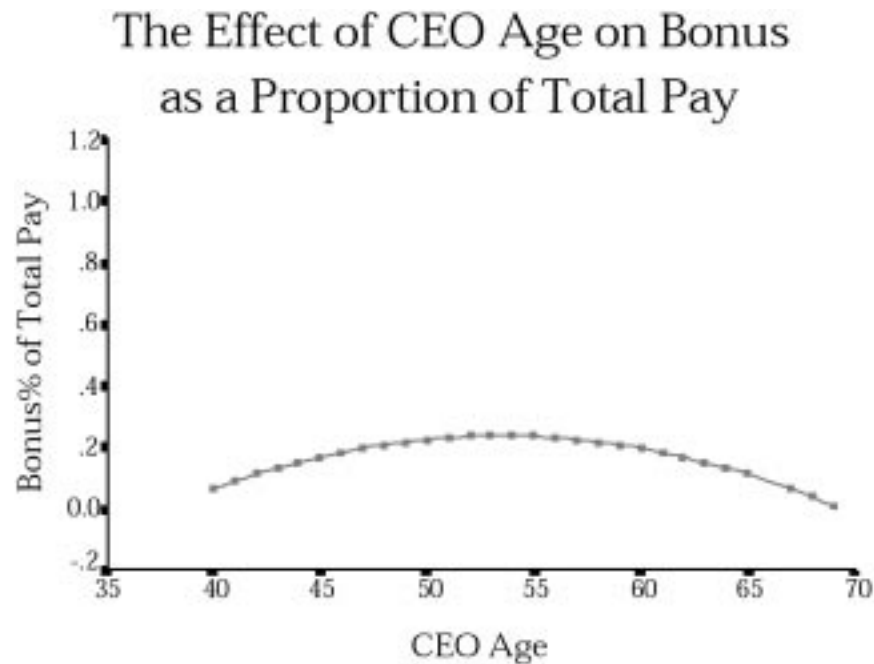## The Effect of CEO Age on Bonus as a Proportion of Total Pay

Figure 2.

A point worth mentioning is we also investigated the possibility of a non-linear association between age and executive share options. Again, a regression curve estimation technique was employed to determine the best-fit quadratic. This technique, unfortunately, failed to produce any significant non-linear relationship.

7. Conclusions

We began this research by empirically examining four hypotheses. Although the regression results failed to support hypothesis 3 and 4, the data did support hypotheses 1 and 2. This pattern is consistent with the notion CEO age is certainly an important contingency on the level of executive pay and less of an influence on performance related pay.

An interesting finding to emerge was that the relationship between CEO age and bonus of whose association appears to be non-linear. Although prior research has typically viewed this relationship as a linear function, the significant coefficients, found as a result of the non-linear technique, imply otherwise. As suggested by Figures 1 and 2, the mix of pay shifts in relation to age from short to more long-term. Figure 1 precisely indicates the point of inflection is about 53 years. This curvilinear association, indeed, opens up a whole new area of debate which questions conventional wisdom in that the pay and performance is a linear relationship-perhaps it is not. Stated differently, future research should be

directed towards determining whether the pay- and performance-association may be non-linear.

These findings are inconsistent with those found by prior research (Deckop, 1980; Finkelstein and Hambrick, 1989). Where Deckop predicted and found no association between age and pay, our study encountered a statistically positive relationship.[6] There are at least two theories as to why these findings may differ. First, prior research regarding CEO age and pay is primarily of U.S. origin. Preliminary work by McKnight and Tomkins has found that the values espoused by British executives in many respects deviate sharply from those of American executives. Second, differences in research methodologies, in particular the splitting of executive pay by salary, annual bonus, and share options, and our modelling the association between CEO age and pay as a non-linear function, may plausibly explain these inconsistent results.

The practical implications of this research are clear from a remuneration committee perspective. At about the age 53, personal preferences of executives towards the mix in pay components change. It is, therefore, important that pay committees take on board family and, especially, financial circumstances of the executive when designing remuneration schemes. Again, preliminary work by McKnight and Tomkins find boards in general do not consider personal circumstances when designing director pay packages. If their opinions regarding the personal circumstances are legitimate, then this certainly opens up another theoretical domain for which to explain patterns in executive pay. In short, future research should assume a more qualitative approach by exploring how and why executives view specific components of pay at particular stages in their life cycle. This could immensely enhance our knowledge and understanding of the executive pay phenomenon.

Notes

[1] Earnings-per-share (EPS) was not used as a performance variable due to the fact a Pearson test found it and turnover to be highly correlated. Given EPS's and turnover's collinearity, it was felt the predictive power of the coefficients would be significantly reduced; that is, the coefficients would become unstable. We, therefore, settled with turnover as an EPS surrogate.

[2] Stated differently, the rate of return is $\ln[(Sp_t + d_t)/Sp_t - 1]$.

[3] Proxies of size and performance were selected for the following reasons: 1) to provide consistency and comparability with prior literature (Hill and Phan, 1991), and 2) annual reports suggested these elements were frequently employed for measuring executive effort.

[4] The only other published UK study to examine the relationship between share options and shareholder return was that by Main et al. (1996). However, this study, again like all others, failed to split pay into its most visible components.

[5] McKnight and Tomkins (1999) have currently undertaken research using alternative option valuation models to determine whether such sensitivities can be improved upon. Generally speaking, they find that such sensitivities can vary enormously depending on the option valuation model employed.

[6] These authors acknowledge several limitations with their research. First, deferred forms of compensation were not examined. Second, data collection was limited to one industry. Third, the data may be regarded as obsolete.

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