

Chief executive compensation and company performance: a weak relationship or measurement weaknesses?

A discussion of the methodological problems encountered in measuring chief executive compensation and the inconsistent approach adopted by the extant literature

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Abstract

Investor unease and significant changes in corporate governance both in the UK and the US has sparked considerable academic debate with regard to the determinants of chief executive compensation, and in particular the pay-performance relationship. In this paper, I discuss the measurement of the dependent chief executive compensation variable used in quantitative studies investigating the relationship between pay and performance. It is suggested that measurement weaknesses and inconsistencies contribute to the inconsistent and at most weak positive relationship between pay and performance reported in the extant literature. This paper proposes a methodological framework for measuring chief executive compensation in quantitative investigations.

Keywords: Executive compensation; Chief executive, Corporate governance; Principal-agent theory; Company performance; Methodology, Quantitative, Measurement, UK, US

1. Background

Chief executive compensation attracts investor, media, public and academic attention. Investors expect that executive pay and incentive arrangements are closely aligned to company performance. Investors and the media seize on any arrangement that appears excessive particularly if recent performance is regarded as poor. The public express outrage at large salary increases compared to national average earnings and at the magnitude of long-term incentive awards. Investor unease and significant changes in corporate governance both in the UK and the US has sparked considerable academic debate with regard to the determinants of chief executive pay, and in particular the pay-performance relationship. A review of the extant literature finds company size to be the most consistent and positive determinant of chief executive pay; whilst regarding the relationship between chief executive pay and company performance research is contradictory and at most suggests that there is only a weak relationship.

“The overall impression one gains from this vast body of work is that a link between executive pay (including stock option payoffs) and corporate performance does exist. However, the link is quite weak, statistically significant, but far from compelling” Stathopoulos *et al.* (2005:91).

This paper explores the measurement of chief executive compensation as developed by the extant literature and used as a dependent variable in a multiple regression model. It suggests that a weakness of the extant literature is the inconsistent measurement of chief executive pay which leads to contradictory pay-performance studies.

1.1 Changes in Corporate Governance

The Cadbury Committee was set up in the UK in 1991 in response to the rapid increase in executive pay and supposed failure of pay to be linked to performance and also in response to “a series of scandals involving Maxwell Communications, Polly Peck and others” (Girma *et al.* 2007:65). The publication of the Cadbury Report (1992), the Greenbury Report (1995), the Hampel Report (1998), the Directors’ Remuneration Report Regulations (2002), the Higgs Report (2003) and the Combined Code (2003) are important milestones in the process of ensuring greater transparency and improved accountability of UK boards of directors to their shareholders. Despite numerous changes in corporate governance, investors remain concerned that executives continue to be rewarded substantially even when company performance is poor. Since the beginning of the 21st century, the global interest in corporate governance has been refuelled following the response of the US administration to some cases of spectacular corporate failure. “The US Sarbanes-Oxley Act of 2002 was an explicit

response to the Enron, Tyco and WorldCom misreporting scandals” (Girma *et al.* 2007:65). The collapse of these high profile corporations has been “allegedly linked to CEO compensation” (Matsumura and Shin, 2005:1). For example, the giant US Corporation Enron, which collapsed on 2nd December 2001, has since been criticised for excessive long-term incentive arrangements that may have contributed to its downfall. Enron’s management were rewarded extensively with share options which may explain the focus of Enron’s management on creating expectations of rapid growth and its efforts to inflate reported earnings. The collapse of Enron further heightened the global issues of executive pay and need for corporate governance reform.

1.2. Literature

The executive compensation literature has grown considerably over the last 50 years and covers many disciplines: accounting, economics, law and organisational strategy (Murphy, 1999). Accountants like Healy (1985) have studied the association between accounting based compensation incentives and earnings manipulation. Baiman and Verrecchia (1995) explore the relative effectiveness of accounting-based versus market-based performance measures. Financial economists, most notably Jensen and Murphy (1990), have studied the relationship between executive compensation and company performance. Financial economists have also investigated the effect of “investment decisions, capital structure, dividend policies, mergers and diversification” (Murphy, 1999:2) on executive compensation. Research employs various theoretical perspectives such as neoclassical theory, principal-agent theory, relative performance evaluation theory, managerial power theory, social comparison theory, human capital theory, information processing theory and tournament theory. While accountants and economists have tended to base research on “tests or applications of agency theory” (Murphy, 1999:2) others such as O’Reilly III, Main and Crystal (1988) have based research on non-agency models such as tournament theory. A large number of studies investigate the relationship between chief executive pay and company performance and consider principal-agent theory as the foundation for the research. Executive compensation is thought to be the most effective means of addressing the well-known agency problem, advanced by Jensen and Meckling (1976), and caused by the separation of ownership and control. According to the agency framework, executive compensation is an efficient means of aligning executive interests more closely with those of shareholders through a compensation contract that rewards superior company performance. It is argued that principal-agent theory predicts a positive association between chief executive pay and company performance.

Research is primarily US centric but there are also a large number of studies on UK executive compensation. In the UK, the vast majority of executive compensation research is empirical and quantitatively based. There are many examples of studies that have explored the relationship between executive pay and company performance. Recent UK research includes Eichholtz *et al.* (2008), Girma *et al.* (2007), Gregg *et al.* (2005) and Stathopoulos *et al.* (2005). However, there is very limited qualitative research investigating UK executive compensation. A survey of the UK literature identifies only two studies. Bender (2007) explores the rationale behind the prolonged growth in executive remuneration, through semi-structured interviews with persons involved in the remuneration process, for a sample of UK companies. Perkins and Hendry (2005) investigate boardroom compensation decisions through in-depth interviews with seven remuneration committee members. The lack of qualitative studies is probably due to the difficulty in gaining access to the relevant 'actors' versus the relative easy access to archival quantitative data. However, there may also be a tendency for micro-economists to become over obsessed with complex mathematical analysis while having no direct contact with firms (Reid, 1988).

1.3. Structure of the Paper

The remainder of this paper is structured as follows. Section two provides an overview of the research philosophy and methodology adopted in the study of the determinants of chief executive pay. Section three introduces the chief executive compensation variable and defines the various components of chief executive pay. Section four critiques the inconsistent approach adopted by the extant literature regarding the definition of the variable and identifies potential problems regarding the measurement of chief executive pay. Section five proposes a methodological framework for measuring chief executive compensation in quantitative investigations.

2. Overview of Research Philosophy and Methodology

This paper specifically explores the measurement problems encountered in the analysis of chief executive compensation. The paper identifies some weaknesses in the extant literature and recommends a methodological approach to measuring chief executive pay. The approach is to be used in a study of the econometric relationship between UK chief executive pay and company performance. An Ordinary Least Squares (OLS) multiple regression model will be used to test the significance of company performance (the independent variable) on executive compensation (the dependent variable). The positivistic nature of the research is

characterised by the research objective; to identify whether there is evidence to support a causal relationship between company performance and chief executive pay. The philosophical approach adopted in the research is in part influenced by practical considerations such as the ready availability of data for an empirical study.

The research strategy to be employed is a longitudinal panel investigation of a sample of 200 companies from 2002 to 2006. Longitudinal design is seldom used in social science research (Bryman and Bell, 2003); however, it is typical within economic investigations that adopt a positivist research philosophy. The method of data collection is archival research. In this research the researcher and reality are one step removed from each other. The researcher is working with real chief executive pay data and company performance data that exist independent of the researcher. Perhaps the most important advantage of archival research is the permanence of the data (Denscombe, 2003). This is particularly relevant as it allows future researchers the ability to replicate the study, an important characteristic of positivistic research. The company financial information is to be obtained from Datastream and the chief executive compensation data is to be hand collected from annual remuneration reports. UK companies are required, by the Directors' Remuneration Report Regulations (2002), to detail all forms of chief executive remuneration and provide this information in an easy to read table in the annual report and accounts. This data has not always been available in the current format which has undoubtedly constrained earlier research and influenced the chosen method of data collection. Archival-based research is very typical for a positivistic investigation of executive compensation data. Using hand collected data from annual reports is a common method adopted by researchers investigating chief executive pay (McKnight and Tomkins, 2004 and Buck *et al.* 2003). Another common source of pay data is to use a financial database such as Datastream for UK research (Girma *et al.* 2007) or ExecuComp for US research (Jiraporn *et al.* 2005). However, a database might limit the analysis of chief executive compensation because the measurement definition is predetermined by the database provider and limited to only one or two calculations.

3. Components of Chief Executive Pay

One of the difficulties researchers encounter in understanding the determinants of chief executive pay is that there are many components that constitute the total remuneration package. The terminology used by academics and industry is not always consistent and can therefore be confusing. There are also differences between countries. For example,

performance share plan is a common term in the UK while the same type of plan is referred to as an LTIP (Long Term Incentive Plan) in the US. Table 3.1 describes the various elements of pay and the terminology used in the literature and in business. A basic pay is provided monthly with no risk of non payment to the executive. A short-term incentive (bonus) is typically offered to reward annual company performance. The amount of bonus due is at risk because it is dependent on performance. A maximum bonus is paid for performance beyond an upper threshold while no bonus is paid for performance below a lower threshold. Bonus is paid at different levels of performance between the lower and upper threshold. In some cases annual earned bonus is deferred to be paid at a later date and may also be subject to further longer term performance conditions; this is called a deferred bonus. Executives are also usually eligible for grants of executive share options and /or grants of restricted shares under the rules of a long-term incentive plan. The value of share options and shares will move in line with the company share price and are therefore at risk of decreasing in value. Further, in the UK, virtually all grants are subject to performance conditions before vesting and may be referred to as performance options or performance shares. Similarly to the short-term incentive, a maximum award vests for performance beyond an upper threshold while no award vests for performance below a lower threshold. The award vests at different levels of performance between the lower and upper threshold. In the US, share options and restricted shares, are usually granted without further performance criteria and will therefore vest in full provided the executive is still employed. The executive may also be eligible for other all employee share save schemes which will generally only form a small proportion of the executives overall remuneration. Executives are also usually entitled to benefits in kind such as gym membership, a chauffeur, housing allowance etc. In most cases benefits in kind will not be a substantial proportion of remuneration with the possible exception of executives who may be entitled to a housing allowance as part of an international relocation package. The company will also typically provide the executive with a retirement plan.

The structure of chief executive compensation is complex and continually changing to reflect best corporate governance practice and market norms. In an analysis of US chief executive compensation data, Towers Perrin show that in 2004 stock options represented 38% of CEO pay. By 2008 the proportion of stock options had fallen to only 23% of pay. While, performance share plans have increased from 8% of the pay mix to 21%. In the UK the nature of stock option plans has changed significantly over the past few years due to

enhanced corporate governance guidelines. For example, it is now regarded as ‘poor’ corporate governance to issue discounted stock options (The Combined Code, 2003). There are also different pay practices between countries. For example, according to the Hay Group's 2006 Top Executive Compensation study, US executive stock options (time-vested options) are normally issued without performance conditions, while in the UK the vesting of executive stock options are virtually always subject to performance criteria (performance options). Although the structure of pay continues to change, the measurement of chief executive pay does not appear to reflect the more recent changes to components of pay or country differences. I argue that more thought and theoretical justification must be given to the measurement of the chief executive compensation variable to be used in a quantitative study. The lack of theoretical justification appears to be a gap in the literature and this paper attempts to provide a methodological framework to address this issue.

Table 3.1
Compensation terminology

Terminology	Alternative name (s)
Basic pay	(1) Annual salary (2) Base pay
Short-term incentive (STI)	(1) Annual performance bonus (2) Bonus
Deferred cash bonus	(1) Deferred bonus
Executive share option (ESO)	(1) Share options (2) Stock options (3) Time-vested options (4) Performance options
Restricted stock	(1) Time-vested restricted stock (2) Performance share plan (PSP) (3) Long-term incentive plan (LTIP)
All employee share plan	(1) Save as you earn (SAYE) (2) Share save scheme
Benefits in kind	(1) Perquisites (2) Benefits
Retirement plan	(1) Pension

Note:

The expression ‘long-term incentive’ is frequently used to describe any form of incentive plan that delivers a payout over a period of greater than one year. This may include deferred cash bonus, executive share options and / or restricted stock.

4. Measurement of Chief Executive Pay (and weaknesses thereof....)

There is conflicting evidence with regards to the relationship between chief executive pay and measures of company performance. It is feasible that the inconsistent evidence is partly a result of the inconsistent approach adopted by the extant literature regarding the definition of the pay variable. At first sight research appears to define compensation in a fairly consistent manner; broadly defined as cash compensation, long-term incentives and/or total compensation. However, apart from precedence, the literature does not provide guidance for a precise measurement specification and consequently studies use a wide variety of definitions that may influence the results. Most studies use one or two calculated 'totals' in the analysis and surprisingly, very few studies attempt to measure more than just total measures of compensation. McKnight and Tomkins (2004), McKnight *et al.* (2000) and McKnight and Tomkins (1999) do separate compensation into various pay elements. However, these studies still do not include all the possible discrete components. For example, none of the above studies include performance share plan data. More typically only total measures of compensation are employed as the dependent pay variable in chief executive pay-performance studies.

4.1. Cash Compensation

A common measure of chief executive pay is cash compensation and is usually the sum of basic pay and short-term incentive. This is the most consistently defined measure in the literature although there are still some differences across studies. Some studies include all cash compensation, including allowances (Gregg *et al.*, 2005 and Conyon *et al.*, 2001). Others only include basic pay and annual bonus (McKnight and Tomkins, 2004; McKnight and Tomkins, 1999 and Henderson and Frederickson, 1996). Cash compensation is a relatively simple measure and does not include the long-term incentive element of the executive's remuneration. A large number of studies only measure cash compensation (Girma *et al.* 2007; Gregg *et al.* 2005; Johnston, 2002 and Benito and Conyon, 1999). A reason for excluding the long-term incentive component is often due to the difficulties in collecting the data and the complexity of attributing a value to executive share options or long-term incentive plans. Early studies are particularly constrained by the availability of share option data. For example, it is only since 2002 that UK listed companies have been required to disclose detailed remuneration data. Excluding incentive compensation, which is linked to measures of company performance, such as growth in earnings per share (EPS) or total shareholder return (TSR) must alter the validity of the compensation measure. It is

proposed that one reason for finding only a small association between chief executive pay and company performance is due to the great number of studies that do not include long-term incentives. Girma *et al.* (2007) justify the exclusion of share options on the basis that before the Cadbury Report (1992) the data was not complete to enable valuation. However, Girma *et al.* (2007) do not explain why share plans are also excluded from the same analysis.

4.2. Long-Term Incentives

Measurement concerns are mainly related to the long-term incentive components of chief executive pay. The measurement of long-term incentive data varies in numerous ways; several studies report the effects of long-term incentives and the effects of total compensation (Carpenter and Saunders, 2004 and McKnight and Tomkins, 2004) while others only report total compensation (Jiraporn *et al.* 2005 and Buck *et al.* 2003). More importantly, many studies only include stock options (McKnight and Tomkins, 2004 and Cordeiro and Veliyath 2003) in the long-term incentive measure with some also considering the value of shareholdings and/or performance share grants. In the seminal pay-performance study, Jensen and Murphy (1990) include shareholdings and the value of option holdings, as do Main and Johnston (1993). In a later study, Main *et al.* (1996:1633) exclude shareholdings from their measure of compensation because it “constitutes a personal investment”.

4.2.1. Executive Share Options

The valuation of options and shares also varies widely and the choice of valuation method is likely to influence the interpretation of the results (Core *et al.*, 1999). Jensen and Murphy (1990) use Black-Scholes pricing methodology to value the options. McKnight and Tomkins (1999) champion the minimum share option (MSO) valuation model. Cordeiro and Veliyath (2003) use a binomial valuation model. Carpenter and Saunders (2004) use the Securities and Exchange Commission (SEC) method and Henderson and Frederickson (1996) simply value options at 25% of the exercise price. Studies also vary in terms of what is included in the share option valuation: (i) new option grants only; (ii) change in value of all outstanding options; and, (iii) gains from stock options. Jensen and Murphy (1990:233) and include:

“...the value of the options awarded during the year plus the change in the value of all outstanding options during the year plus the profits (price minus exercise price) from exercising options during the year”

In contrast, Henderson and Frederickson (1996) are not explicit and therefore it is not clear whether the measure includes previous grants together with current grants.

4.2.2. Performance Shares

The treatment of performance share grants or LTIPs has also varied. Research has attempted to consider the impact of performance conditions on the incentive payout by discounting performance share awards for the probability of vesting. Conyon *et al.* (2001) measure incentive compensation and discount LTIP awards by 20% to reflect the performance conditions. Other research uses the face value of the award at the time of grant (Eichholtz *et al.*, 2008 and Core *et al.* 1999). There is a recent tendency in US research to include the LTIP payout in the long-term incentive measure which suggests there are some precedents to consider the payout when performance conditions are present. For example, Jiraporn *et al.* (2005) include the LTIP payout but do not justify why it is included. Eichholtz *et al.* (2008:413), the most recent UK study, does not include performance share plan payouts and instead includes the “full expected value of options and shares”. Eichholtz *et al.*, (2008:413) acknowledge “the practice of granting options and shares with additional performance requirements has developed” but make the assumption “that firms set performance targets equal to expected performance”.

4.3. Total Compensation

Total compensation is typically cash compensation plus long-term incentives. As discussed the definition of cash compensation does not vary extensively so the main influence on total compensation is the long-term incentive measure. Measures of total compensation are also often dependent on the source of data. If the data is hand collected from annual reports the measure can be customised for the purpose of the research, however, data sourced from a financial database is reliant on the calculated field in the database. Jensen and Murphy (1990) use Forbes total compensation data and note that the measure is less than perfect because it changes from year to year. The measure also does not include stock options. In order to include stock options, Jensen and Murphy (1990) study US proxy statements. Hallock (1997:333) also uses Forbes data and acknowledges that “Because total compensation includes exercised options, it may not reflect current compensation as accurately as the other measures”. This is because exercised options represent a personal investment not current compensation.

5. Methodological Framework for Measuring Chief Executive pay

It is recognised that the range of definitions, calculations and valuation techniques used to measure chief executive compensation enriches the literature which must be beneficial; however, it may also be a reason for the inconsistent results reported in the chief executive pay-performance literature. Greater theoretical direction is required to provide researchers with a foundation to further knowledge in this area. In an expansive review of the executive compensation literature, Devers *et al.* (2007:1042) also suggest that more theoretical guidance is required particularly surrounding the “choice of performance measures, timeframes, samples, methods, and variables”. Furthermore, Devers *et al.* (2007) highlight the use of ambiguous compensation measures.

Firstly, I recommend that future studies separate the chief executive pay variable into its various components. This would enable the research to test whether different factors explain different amounts of variation, relative to performance, depending on whether pay is measured in terms of basic pay, short-term incentive, long-term incentive or total values of compensation. Studies that report on long-term incentives or total compensation versus cash compensation find contrasting results for each measure of pay. Conyon *et al.* (2001) report similar significant positive coefficients for both cash and total compensation. However, the finding for long-term incentives is less significant and reports a much larger positive coefficient. Core *et al.* (1999), also report similar results for cash and total compensation but find the results for basic pay are remarkably different. McKnight *et al.* (2000) find a noteworthy relationship between both short-term and long-term pay and company performance; however, basic pay is predominantly determined by company size. These findings suggest there is evidence that dividing compensation into its various elements is important to understand the determinants of chief executive compensation.

Secondly, I propose that the long-term incentive measure should include performance shares or performance options vesting in the current annual compensation cycle and/or grant values for non-performance related incentives. A review the extant literature indicates that research measures long-term compensation as either the change in chief executive wealth or long-term incentive grant practice. The wealth measure typically includes previously granted awards (that have not vested) and personal shareholdings and therefore does not represent current annual chief executive income. A performance option or performance share grant is essentially a target incentive because it only vests if performance conditions are satisfied: the

award only becomes 'current' upon vesting and not at grant. Therefore, the valuation of performance related long-term incentive grants only reflects the potential gains and does not reflect the actual payout from the incentive. However, it is recognised that if performance conditions are not specified, more typical of US practice, the incentive is earned at grant (time and employment being the only restrictions). This is a very important methodological distinction that has not been addressed for performance options but has been somewhat addressed for performance shares in US research. It is expected that the long-term incentive payout (for performance shares or performance options) expressed as a percentage of the original award should be positively and significantly related to past company performance. In the case of performance shares or options, grant practice only reflects "pay opportunity" (Kay, 2008) which might be determined by factors other than performance such as the complexity and size of the organisation. I suggest that the extant literature has predominantly captured grant practice which is probably why size rather than past performance is the dominant determinant factor.

Further, I propose that future quantitative chief executive pay-performance studies use the following framework to measure the dependent pay variable.

- (i) Data should be hand collected from the annual report and accounts to allow for the required flexibility to measure all components of compensation.
- (ii) Basic pay to be measured as the annual salary/fees as reported in the directors' remuneration report.
- (iii) Short-term incentive to be measured as the annual paid bonus as reported in the directors' remuneration report.
- (iv) Deferred cash compensation to be measured at the time it is deferred if it is already earned and guaranteed. Otherwise at the point of vesting if further performance conditions are attached.
- (v) Performance options to be measured as the value of share options vesting in the current year. Time-vested options to be measured at grant.
- (vi) Performance shares to be measured as the payout in the current year. Non-performance restricted shares to be measured at grant.
- (vii) Cash value of benefits in kind, pension contribution and other cash to be measured as reported in the directors' remuneration report.
- (viii) Exclude saving plans as they constitute a personal investment.

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