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Heads I win, Tails you lose? A career analysis of executive pay and corporate performance

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Abstract

The paper adopts a novel career perspective to examine theories of corporate control in the context of executive pay. Detailed career histories of boardroom executives in all FTSE350 companies between 1996 and 2008 are utilised. The paper highlights the failure of existing arrangements to adjust pay outcomes where career performance is poor. The leading theoretical reasons for this disconnect, namely managerial power and neo-institutionalism, are not consistent with the data. The paper identifies a settling-up process at work, whereby pay is adjusted in the light of both past pay and past performance. From a policy perspective, a case is made for adopting a cumulative or career-oriented approach to rewarding executive performance through the use of truly long term incentives in the form of 'Career Shares'.

1 Introduction

Executive pay has long been used as a lens through which to scrutinise corporate control (Cosh and Hughes, 1987; Jensen and Murphy, 1990). As such, it is providing a discomforting view of decision making at the top of UK companies. Currently there is a disconnect between pay and performance in UK boardrooms. While the public, in general, and business analysts, in particular, express dismay regarding the level of executive remuneration, it is this apparent disconnect between company performance delivered and remuneration received that provokes most concern regarding the effectiveness of boards in securing value for money from executive directors (BIS, 2011; High Pay Commission, 2011; Hutton, 2010) and, by implication, of controlling their respective companies. The paper moves away from the conventional year-on-year analysis of pay and performance to suggest that a richer insight can be obtained by using a cumulative or career-based perspective which allows for a settling-up process (Fama, 1980). The results call into question the validity of alternative explanations such as managerial power and neo-institutionalism but are consistent with the context-specific interpretation of agency theory as suggested by Bruce et al. (2005); Wiseman et al. (2012) and Gomez-Mejia et al. (2005).

Over the past 10 years, there has been a clear and widely expressed disquiet regarding the misalignment of executive pay and company performance. This is typified by the UK Government's discussion of the disconnect between mean total Chief Executive Officer (CEO) pay in the FTSE 100 and the annual variation in the FTSE 100 performance index (BIS, 2011, Fig 3, p11). This disconnect at market level between executive pay and company performance is something of a puzzle as it is observed following a concerted effort to reform corporate governance in the UK, as promulgated in a series of high profile reports on the topic (Cadbury, 1992; Greenbury, 1995; Hampel, 1998; Higgs, 2003; Walker, 2009) and as codified in successive versions of the UK's Corporate Governance Code (FRC, 2012) and by the UK's financial regulatory authority (FSA, 2010). Furthermore, there is ample evidence that executive contracts contain a high proportion of at-risk or performance-dependent pay (BIS, 2011, Fig 2,

p9). Indeed, qualitative studies of the remuneration decision process within boards generally paint a picture of well-intentioned independent directors striving to craft remuneration arrangements that are both competitive in the executive market place and stretching in terms of performance linkages, e.g., Bender and Moir (2006); Clarke and Conyon (1998); Lincoln et al. (2006); Main et al. (2008).

So where does the relationship break down? It could be that there is indeed a strong linkage between performance and remuneration, but that commentators observe and compare the outcomes in a way that masks this relationship. For example, pay may be observed in a particular year but the total remuneration realised pertains to performance over not only that particular year but also (thanks to long-term incentives) to performance over the previous three years. Similarly, total remuneration as awarded is in part contingent on performance over the coming three years. Such considerations push the analysis towards an approach that matches pay and performance over an integrated period of time that better links the executive's pay with the performance delivered. The unit of analysis used here is the period over which the executives hold their position on the board. This is labelled the 'executive career', although this is only a convenient shorthand for the spell working in an executive boardroom position, as the executive's career as such could properly be defined to extend over a multiplicity of jobs both within the company and possibly in several earlier companies (Tams and Arthur, 2010). This career framework approach supports a richer modelling of the situation and one that better accords with the long term and personal nature of employment relations that that distinguishes the labour market from other factor markets (Hicks, 1963; Marshall, 1920; Reynolds, 1951).

It should also be noted that while early academic work examined only CEOs (Cosh, 1975; Guest, 2010; Lewellen, 1968; Roberts, 1956) and popular discussion continues to use the CEO's pay as a short-hand for executive pay in general, the focus of this paper is on all executive directors, including the CEO. The process of remunerating each executive director is the same (i.e., via the remuneration committee) and all executives participate in long-term incentives,

3

albeit the quantum of reward received by a CEO is typically higher. Furthermore, policy discussions and corporate governance codes are directed at the pay of all executive directors, not simply the CEO (Bender and Moir, 2006; BIS, 2011; FRC, 2010). As shown below, the problem of pay without performance (Bebchuk and Fried, 2004) is shared by all executive directors. The object of the analysis in this paper is, therefore, the pay of executive directors - 'executives' as they will be labelled here.

Of the rival explanations of boardroom pay, the most direct is agency theory (Conyon et al., 2011; Core and Larcker, 2002; Fama and Jensen, 1983; Gomez-Mejia et al., 2005; Stathopoulous et al., 2005) where non-executive directors are seen as the representatives of shareholders, ensuring, among other things, that pay arrangements are in the shareholders' interests. By utilising the career perspective as a lens through which to evaluate the pay and performance relationships of executives, it is possible to provide fresh insights into pay determination and, hence, decision making in the boardroom. In particular, we are able to scrutinise the extent to which boards, over the executive's career, manage the agency relationship to settle-up pay for any arrears arising from earlier over- or under-performance (Fama, 1980; Wowak et al., 2011).

Managerial power challenges the agency perspective by highlighting the asymmetry of information and bounded rationality issues that raise the possibility of the process being captured by the incumbent management, who can then extract generous pay awards for themselves (Bebchuk et al., 2002). From this perspective, the presence of non-executive directors emerges as a key consideration in ensuring that shareholders get a reasonable deal. In the analysis below, it is the role of non-executive directors in effecting a strong pay-performance relationship that is used as a test of the managerial power approach.

The situation is further complicated when consideration is given to the institutional context. This weighs heavily when non-executive directors, in seeking legitimacy for their decisions, fall

back on being seen to do the right thing. In terms of executive pay, they do this by following the practice or guidance of others, while placing relatively little weight on designing pay to serve as an incentive in its own right (DiMaggio and Powell, 1983; DiPrete and Eirich, 2010; Eisenhardt, 1988). Data collected on what is widely perceived as the institutionally inspired widespread adoption of certain performance conditions (such as earnings per share targets) are used below to test for the effects of these institutional isomorphisms of practice.

Overall, our results question the importance of managerial power and institutional considerations in explaining board room decisions. However, while the agency-theory based settling-up explanation of Fama (1980) is supported by our analysis of executive pay and company performance, it is clear that in a large proportion of careers the size of these effects falls short of what is needed to avoid perceptions of payment for failure. There is a marked asymmetry in the treatment of successful and less successful executives (Ezzamel and Watson, 2002; Guest, 2010). This echoes the point originally made by Brown and Sisson (1975) who argue that it is not that market forces are unimportant but that they are best understood in a context that allows for the operation of complementary theories of wage determination. In terms of policy implications for the design of long-term incentives, our findings resonate with DiPrete and Eirich (2010) and Wiseman et al. (2012) who suggest that agency theories are best interpreted in the context in which they operate, and with executives that context involves a career perspective.

The following section reviews the literature on executive pay determination. Section 3 discusses the methodology and data sources. Section 4 presents the empirical results, and the paper concludes in Section 5 with a discussion of the policy implications.

2 The determination of executive pay: literature review

Pay is seen as a major control device in providing managers with incentives to take decisions that are in the shareholders' interests (FSA, 2011, para592). The obverse of this being that observed excess pay to executives can be taken as an indication of organisational slack (Wade et al., 2006) and rent extraction by the executives (Bebchuk and Spamann, 2010). In modern form, the identification of the control problem created by the separation of ownership and control, and the accompanying development of a professional managerial class, is generally attributed to Berle and Means (1932), although the issue was highlighted earlier by Smith (1776). The concept of using pay arrangements or pay design to address the problem emerges from the agency analysis of the widely-held corporation as outlined by Jensen and Meckling (1976) and centres around linking pay with performance, thereby aligning the interests of the executives with those of the shareholders (Murphy, 1985). This allows a pay mechanism to substitute for imperfections in the direct supervision of the top management team (Murphy, 1999) - imperfections that arise owing to bounded rationality (Simon, 1947), asymmetric information (Akerlof, 1970) and information impactedness (Williamson et al., 1975). The approach has been characterised by Roberts (2001) as viewing the employment relationship as comprising implicit and explicit contracts, and fits with the Alchian and Demsetz (1972) view of the firm as a nexus of contracts. This is interpreted by some as a world of optimal contracting (Demsetz and Lehn, 1985; Hermalin and Weisbach, 2003) where enterprises 'set optimal equity incentive levels' (Core and Guay, 2002, p.151).

This principal-agent or agency perspective on the management of enterprises with dispersed ownership quickly came to dominate policy discussions in the field of executive remuneration, and is commonly expressed in the much used triplet: 'attract, retain and motivate' (Greenbury, 1995, para. 1.10). In practical terms, it falls to the non-executive or independent directors to represent the interests of the shareholders in shaping this outcome, acting through a board subcommittee usually known as the 'compensation committee' or the 'remuneration committee' (Main and Johnston, 1993; Roberts et al., 2005). Modeling behaviour in this man-

6

ner was found to be highly tractable (Grossman and Hart, 1983), although early empirical testing was less than supportive, with the observed linkage between remuneration and the respective company's performance being found to be empirically so modest as to challenge the notion that it could significantly influence decision making (Jensen and Murphy, 1990). However, as time progressed, more aggressive use of long term share-based incentives in the boardroom (Murphy, 2002) meant that later empirical estimates of the incentive effect rose to levels that were more supportive of this perspective, and hence more able to explain executive remuneration (Guest, 2010; Hall and Liebman, 1998). By this time, the risk aversion of individual executives (Garen, 1994; Haubrich, 1994) had been incorporated into some empirical studies and led to further claims of support for the agency interpretation (Hall and Murphy, 2002; Lambert et al., 1991). Growth in company size and scarce managerial talent have also been used as factors to explain the recent marked rise in executive remuneration (Edmans and Gabaix, 2009; Gabaix and Landier, 2008).

Using pay arrangements to reconcile divergent interests of management and owners has come to be central to discussions of corporate governance: 'Executives and shareholders can have divergent interests, ... Remuneration structures should seek to address this.' (ABI, 2011, para.v(c)). However, the complexity of the contracting arrangements, already alluded to above (Kole, 1997), places a high demand on the board. Setting both short-term and long-term incentives for an executive whose suitability for the post often remains uncertain is a daunting prospect. It was response in to this consideration that Fama (1980) introduced the notion of 'settling-up', whereby ex-post adjustments to pay and the knowledge that they will occur sharpen the incentive effect over the executive's career. For those executives whose performance has justified higher pay than has been realised to date, then pay will be revised upwards. On the other hand, for those executives who have been paid more than their performance to date justifies, then pay will be revised downwards. In the light of such adjustments, it can be expected that viewed over the executive's career the connection between pay and performance will be similar for both those who create value on behalf of the shareholders and for those who end up destroying value. From the earliest work in this area (Cosh, 1975;

Lewellen, 1968; Roberts, 1956) and continuing to more recent times (Bell and van Reenen, 2011; Guest, 2010) questions have been raised as to how effectively this can be done, and whether it is easier for successful executives than unsuccessful executives.

More precisely, pay in a given year will reflect any settling-up process being undertaken (Fama, 1980; Wowak et al., 2011). Thus, at any point in the executive's career, pay delivered in that year will be linked to the extent by which pay to date has exceeded or fallen short of what might be justified by the executive's career-performance to date. Murphy (1986) adds to this the notion adjusting reward in the light of learning, whereby with the passage of time it is possible to better gauge the innate quality of each executive. The cumulative evidence of performance is used to refine the estimated worth of the executive in question and pay is adjusted accordingly, suggesting that as boards learn about the true capabilities of their executives, the effectiveness of the settling-up process will increase.

Although it has come to dominate policy discussions of the topic, the principal agent perspective of executive remuneration as a designed incentive mechanism is not without its critics. Surveys of the large numbers of empirical studies in the area (Dalton et al., 2003; Devers et al., 2007; Tosi et al., 2000) find that estimates of the magnitude of the pay-performance relationship remain empirically modest. These findings, in the face of apparently continuously rising levels of reward (BIS, 2011; Hutton, 2010), lend strength to alternative views of what determines executive remuneration - views that challenge the simple agency theory picture presented above. Two main alternatives arise in the form of managerial power (Bebchuk and Fried, 2004; Pfeffer, 1981; Salancik and Pfeffer, 1977) and neo-institutionalism (Capezio et al., 2011; DiMaggio and Powell, 1983; Scott, 1991).

The potential vulnerability of the process to being undermined by managerial or insider power (Bebchuk et al., 2002) imparts a heightened importance to the role of non-executive directors. As indicated above, the recent wave of reform of corporate governance in the UK is generally

taken to date from the Cadbury Report (Cadbury, 1992). From the outset, the emphasis has been on the inclusion and role of non-executive or independent directors (Cadbury, 1992, para. 4.6). They are taken as the embodiment of shareholder interests. As such, it is on their shoulders that responsibility rests in terms of crafting reward arrangements such as to ensure executives see their own interests as aligned with those of the shareholders (Guest, 2010). Failure in this task, due to abuse of managerial power, is seen as leading to excess in executive remuneration - 'rewards for failure' (BIS, 2011, p.22) being one manifestation.

Managerial power sees the incumbent management (the executive directors) as exploiting their privileged position to extract generous levels of reward for themselves (Bebchuk and Fried, 2004). The efforts of non-executive directors are needed to impose some discipline on this process which is otherwise undermined by the power or influence of the incumbent top management team (Bebchuk et al., 2002; Main et al., 1995). Restraints, if any, arise from a desire to stay 'under the radar' (Bebchuk et al., 2002, p.16) and to avoid provoking 'outrage' (Bebchuk and Fried, 2004, p.64) among shareholders or commentators. In such a situation, the prevalence of non-executive directors is viewed as particularly important (Capezio et al., 2011; Gregory-Smith, 2012). The Bebchuk critique of optimal contacting has been met by a spirited defence from those who hold to an agency based view (Conyon, 2006; Core et al., 2004; Hall and Murphy, 2003).

The neo-institutional perspective (Main et al., 2008; Tarbert et al., 2008), places less faith in the prevalence of non-executive directors. It generally accepts that they are well-intentioned but, finding the design of executive remuneration arrangements to be beset with ambiguity and asymmetry of information (Akerlof, 1970; Williamson et al., 1975), and confronted by their own bounded rationality (Simon, 1947), they are seen as reaching for certain short-hand solutions to the problem. In such situations, they may seek legitimacy for their actions: through a 'mimetic' process of following the lead of what other boards are doing (Devers et al., 2007; DiPrete and Eirich, 2010; Porac et al., 1999; Zajac and Westphal, 1995); through a 'co-ercive' process of conforming to existing regulatory codes (Barreto and Baden-Fuller, 2006); or

through a 'normative' process by drawing on their own experience-based standards as developed through service on other boards (DiMaggio and Powell, 1983; Meyer and Rowan, 1977; O'Reilly et al., 1988; Perkins and Hendry, 2005; Scott, 2001). In each case, what emerges is an isomorphism of practice whereby each board seems to follow what other boards are doing. A driving consideration is legitimacy (Deephouse, 1996; Deephouse and Suchman, 2008).

The notion of legitimacy has been emphasised by Ogden and Watson (2008) in terms of defining comparator groups, by Sanders and Tuschke (2007) regarding the move to stock option pay in Germany, by Crombie et al. (2010) with regard to the explanations offered of executive pay logics, by Connelly et al. (2011) in explaining the internationalisation of executive pay norms, and by Liu et al. (2011) for pay detail disclosure. These institutional influences are a long way from the regular optimisation of the pay-performance relationship as envisioned in agency theory (Core and Guay, 1999; Core et al., 2003; Core and Larcker, 2002). In fact, rather than exerting a restraining effect on the generosity or laxness in pay, a higher presence of non-executives may in itself impart a sense of legitimacy and lead to more generous not less generous pay awards (Eisenhardt, 1988; Main and Johnston, 1993; Westphal and Zajac, 1994). Some empirical studies have found a positive significant relationship between the percentage of non-executives on the board and the level of executive pay (Gregg et al., 2012; Gregory-Smith, 2010; Ozkan, 2007) while others have variously found no significance (Capezio et al., 2011) or do indeed find a restraining effect (Guest, 2010; van Essen et al., 2012).

The field of executive remuneration provides abundant examples that are consistent with institutional isomorphism as an explanation. When the ABI (ABI, 1987) suggested performance conditions be applied to the vesting of executive share options and provided as an example earnings per share (EPS) growth of inflation plus three percentage points, then suddenly the accepted market practice became targeting EPS growth of exactly 'RPI +3%'. Similarly, following Greenbury (1995), the hitherto widespread use of three-year rolling contracts for boardroom executives quickly disappeared to be replaced by a near universal one-year contract. In a similar fashion: the adoption of long term incentive plans in preference to share

options that followed Greenbury (1995); the abandonment of re-testing of performance conditions on long term incentives (ABI, 1999); the move to having no award for less than median performance (ABI, 1999), and so on, are all institutionally led innovations that were quickly adopted as standard practice.

Conformance to the various institutional norms can provide boards with the legitimacy (or 'camouflage', Bebchuk and Fried (2004, p70) for less demanding pay awards. One central research question that, therefore, emerges is whether in the light of these alternatives there is statistical support for the career perspective that sees executive pay as the outcome of an agency-based settling-up process linking executive pay to performance over the executive's career on the board. The following section introduces the data used to investigate this question.

3 Methodology and data

3.1 Data

The source of the executive remuneration data used in this study is a commercial provider, Manifest Information Services Ltd. This company has collected annual boardroom data on all FTSE350 companies since 1996. These data are particularly rich in detail. Not only are the cash payments of salary and annual bonus available, but so too are the details of all realised gains through longer term incentive schemes such as share options, performance share plans and so on. Personal details are available for each member of the board, in addition to their precise start and end dates of service, thereby permitting the board composition to be described at all times. Once a company is included in the sample frame, Manifest continues to collect data on the company, even if it leaves the FTSE350, until it is wound up or taken private. The Manifest data set used here extends through to 2008. For financial and accounting data, DataStream is utilised.

3.2 Measures

The focal measure of pay used is realised remuneration over the executive's career. This includes both cash payments in the form of salary and bonuses and also those gains realised from the equity-linked long-term incentives such as executive share options or performance share plans. The only source of financial reward that is not captured arises from pension benefits, which are too imperfectly measured over the period to allow a consistent or credible treatment, here or in any other previous UK study in the area. The measure of reward used is labelled 'TDC' to represent total direct compensation. This starts with total cash compensation in the form of the executive's salary plus other cash payments such as any annual bonus received during each year. To this is added the realised value of options and other equity based incentives exercised during that year.

By focusing on realised remuneration rather than remuneration as awarded at grant date, it is possible to avoid the difficulty of calculating the expected value of share options or performance share plans, both of which are generally subject to quite complex performance conditions in the UK (Conyon and Murphy, 2000; Main, 2006). Awarded pay, which is also presented in the descriptive statistics discussed below, uses an estimate of the value of the share options and performance shares at the time of issue[1]. Focusing on realised remuneration also goes to the heart of the debate, which concerns the effective link achieved between pay and performance. Adopting a career perspective ensures any relationship between pay and performance is not obscured by issues of timing wherein payments in one year actually refer, at least in part, to performance delivered over an earlier time (Gong, 2010). All remuneration data are expressed in £2008.

The Manifest data base also reports on board membership and from this it is possible to compute the size of board ('Board') as reported in each company's Annual Report and Accounts,

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[1]The actuarial value of executive share options is approximated by one-third of awarded face value and of performance share plans by 70% of awarded share value. The use of 30% for share options reflects the practice of the remuneration consultancies (MM & K Ltd, 2007). Gregory-Smith (2011) demonstrate that the approach is robust. Conyon and Murphy (2000) valued performance share plans at 80% of face value.

and the percentage of these members who are non-executive ('% NEDs'). For each executive the date of birth permits age in years ('Age') to be computed. The start and end dates of boardroom service are also recorded by Manifest and this is used to compute each executive's length of service in years as of the end of each financial year ('Tenure'). Those executives holding the CEO position are designated by a dummy variable ('CEO').

In terms of measures of conformance with institutional norms, the design features of each company's long term incentives are scrutinised each year to determine whether it operated a long-term incentive scheme ('Scheme') and whether it was a performance share plan ('LTIP'). Schemes are then classified as to whether: they barred re-testing ('no-retest') to the effect that in the face of failure to satisfy performance conditions on a first attempt then the award lapsed; used an earnings per share relative performance metric ('eps-hurdle'); used a total shareholder return relative performance metric ('tsr-hurdle'); or used some other relative performance metric ('other-hurdle'). Each of these last three measures of performance hurdles on long-term incentives capture aspects of pay design that were strongly encouraged by institutional pressure (Main, 2006).

Additional company descriptive data are obtained from DataStream. As a control for company size, the logarithm of total sales is used ('Sales'). Firm performance is primarily captured by total shareholder return ('TSR') over the period in question (capturing the return to holding the share that arises both from dividend payments and changes in the price of the share). This is available through the 'RI' index available in DataStream, where the start and end value of the index is defined by the start and end of the relevant financial year or the start or end of the executive's career, when this occurs part way through a financial year. The index assumes the automatic re-investment of dividends. In order to express the shareholder return as the total change in shareholder wealth ('ΔSW'), it is possible to use the average total market capitalisation as reported in the 'MV' measure in DataStream. All financial data are expressed in £2008. Summary statistics are presented in Tables 1 and 2.

Insert Table 1: Career Summary Statistics

Insert Table 2: Annual Summary Statistics

Table 1 presents the descriptive statistics for the 3,157 FTSE350 executive careers observed starting between 1996 and 2008. To be able to sensibly analyse career pay, those executive careers already running before 1996 are ignored. The career controls are reported in terms of their average value over the respective career. These 3,157 careers constitute 16,356 annual observations and descriptive statistics on those annual observations are provided in Table 2. In the lower part of Table 1, the career data is utilised to provide an insight into the extent of the disconnect between pay and performance by separating out 'value-creators' (those executives where the shareholder of the respective company is better off at the end of the career than at the start) from 'value destroyers' (those whose shareholders are worse off at the end of the career than at the start). It is noteworthy that the median wealth-creating executive realises a career reward of £2.1m a figure that is lower than the £2.4m received by the upper quartile value destroyer. In effect, 25% of the value-destroying executives earn more than the median of the value-creating executives. Furthermore, 1% of the value-destroying executives in our sample (21 executives) left the shareholders of their companies in a worse state than when they started, and yet took home in excess of £18.4m each.

The histogram in Figure 1 makes use of these data on FTSE350 executive careers to contrast the distribution of total remuneration enjoyed over each of these careers (in 2008£m) with the performance of each executive's respective company over the same period (measured as total shareholder return). While the executive who is highest paid director in the sample ('HPD') can be seen to both be richly rewarded and to deliver a high level of return to shareholders, the same cannot be said for the other two illustrative examples in Figure 1 (labelled 'Banker 1' and 'Banker 2'). There is an unambiguous "heads-I-win and tails-you-lose" aspect (Sanders, 2001) about these results. Pay is right skewed - at worst, the career only moderately rewarding, but at best it can be extremely rewarding. On the other hand, shareholder returns over these same careers are markedly more symmetric - while shareholders can gain much, they

14

also stand to lose it all.

Insert Figure 1: Distribution of Career Pay and Performance

Hitherto, most research in this area has been structured around the connection between the expected value of the observed annual award of executive pay and the performance of the company in that year or in the previous year. While expected value has the advantage of being forward looking, hence relevant for decision making, its calculation on an annual basis can obscure the career pay-performance sensitivity (or lack thereof) - so-called long term incentives notwithstanding. Just one terrible year can destroy the pay-performance sensitivity link on a career basis, as the "Banker 1" and "Banker 2" examples in Figure 1 illustrate. But even absent cataclysmic career endings, our data reveal that keeping an eye on cumulative pay and performance at each point in an executive's career allows the divergence between pay and performance to become clear. Figure 2 plots for each career the cumulative position of the shareholders and the cumulative position of the executives - at the end of their first, second, third and so on year in office, for as long as they serve. While value-destroyers render quite a distinct time path of value in shareholders' hands (lower frame), they enjoy a lower, but not radically different, path of personal prosperity over their career (upper frame). In the context of this paper, the challenge presented in Figure 2 is whether the outcomes presented there can be explained by the type of agency relationship portrayed in Fama's description of settling-up (Fama, 1980). Or, whether such outcomes are more revealing of the deployment of managerial power or of institutional isomorphisms in pay determination.

Insert Figure 2: Value Creators versus Value Destroyers

3.3   Estimation

The career outcomes of executive pay and company performance over the corresponding period are examined in ordinary least squares regressions with year and industry sector dummy

variables included with other controls (Table 3). In order to establish the amount of 'overpayment' or 'underpayment' at any point in time, it is necessary to regress cumulative pay against cumulative performance to date for each year in each executive's career (Table 4). Following (Wowak et al., 2011), the estimation in Table 4 is by Generalised Estimating Equations (GEE) which allows for the repeated observations of the same set of executives. These regressions control for year dummies.

The actual testing of the settling-up effect is conducted in a dynamic panel data (DPD) setting using generalised methods of moments (GMM). The lagged residual from the cumulative realised pay regression appears in the right hand side to capture the extent by which the executive can be regarded as having been overpaid or underpaid to date (Table 5). Given the inclusion of lagged pay as an explanatory variable, estimation is by GMM (xtabond2 in STATA 12.1), in order to mitigate bias arising from this potentially endogenous variable (Arellano and Bond, 1991; Arellano and Bover, 1995; Blundell and Bond, 1998). This exploits lagged values as instruments for the potentially endogenous variables, thereby purging the contemporary association between pay and performance. As Guy (2000) demonstrates in the context of executive pay, it is possible to extract both short-run and long-run coefficients from panel data by focusing respectively on the within and between-firm variation. We focus simply on the within firm variation using the dynamic structure to get at the longer-term career settling-up. Table 6 repeats this approach but extends the range of independent variables to included descriptors of the adoption of institutionally prescribed performance hurdles.

4   Empirical results

In terms of explaining the level of reward, Table 3 reports on regressions of the logarithm of realised reward on a set of company and person specific descriptors (averaged over each career). The initial estimate of the pay-performance sensitivity seems quite modest (at 0.062, $p<0.001$). Statistical testing confirms a significant difference in elasticity between value creators and value destroyers. Separate estimation results in an elasticity of 0.170 ($p<0.001$) for value creators and 0.064 ($p<0.001$) for value destroyers. These estimates are similar to those

of 0.17 and 0.15 obtained by Bell and van Reenen (2011) and 0.32 obtained by Conyon et al. (2011) using alternative UK data sources. Focusing on a narrower measure of cash pay, Guest (2010) estimates the post-Cadbury elasticity at around 0.14 and Gregg et al. (2012) estimate a pay-performance elasticity of 0.29 for 2006. Earlier analysis by Conyon and Murphy (2000) produced an estimate of 0.12 (as opposed to 0.27 for the USA).

Insert Table 3: Career Pay Elasticities

Separating the data into value-creators and value-destroyers, demonstrates that there is an asymmetry in that the pay-performance sensitivity is significantly greater for value-creators, with the connection for value destroyers being empirically more modest. This asymmetry of treatment has been noted by Ezzamel and Watson (1998) and by Guest (2010). For value creators, the career estimate of 0.170 indicates that by achieving a doubling of the increase in shareholder wealth over their career the executives will be 17% better off. At the median, producing an extra £304m in shareholder wealth results in an extra £368k on top of £2.1m career earnings. On the other hand, for value destroyers the downside is less bleak. If instead of merely destroying half of shareholder value (median return of value destroyers is -50.8%) a full three quarters of value destroyed, the executives see their career reward fall from £1.31m to £1.22m. This suggests that there is only a weak incentive alignment for value destroyers and that agency theory provides an inadequate description of the experience of these less successful executives.

In order to investigate the settling-up process, it is necessary to generate estimates of the extent to which an executive's pay to date is above or below what might be justified on the basis of performance in the career thus far. This is made possible through Table 4 which presents the results of GEE regressions of cumulative pay.

Insert Table 4: Cumulative Pay-performance Elasticities

The residuals from these regressions are entered in Table 5 in lagged form as 'CumPayResid' and captures the amount by which cumulative pay to date is above or below what might be expected, given cumulative performance and other circumstances. Cumulative performance allows for the extent to which the company has sustained and improved its performance. The estimated coefficient (-0.041, $p < 0.001$) on this variable in the whole sample regression in column (1) of Table 5 indicates that settling-up does take place. But as columns (3) and (5) reveal, this is only occurring in a statistically significant sense in the case of the value creators (-0.058, $p < 0.001$), and is statistically insignificant for value destroyers. These results, then, are supportive of the settling-up perspective, albeit one that displays an asymmetry in its treatment of successful versus unsuccessful executives.

To investigate the impact of increased time on the job, the executive's current tenure is interacted with the estimate of lagged cumulative over- and under-payment ('CumPayResid.Ten') in columns (2), (4) and (6) of Table 5. In all cases, the resultant coefficient is significant ($p < 0.05$), which supports the learning perspective of Murphy (1986). But while it is possible that the board adjusts pay as it better discerns the quality of the executive ('learning'), it may simply be adjusting more effectively for the performance delivered to date ('settling up'). The current data do not allow us to distinguish. The significant positive coefficient on the percentage of non-executive directors ('%NEDs', $p < 0.001$) supports the notion that a higher proportion of non-executives on a board brings legitimacy that emboldens the board to make relatively generous pay awards. Far from exercising a restraining influence on pay as suggested by earlier empirical investigation (Guest, 2010), the presence of non-executive directors is seen here to actually enhance the level of pay. It is worth noting that the rise of '%NEDs' occurs over a period that has been noted for an increase in the financialisation of UK companies (Froud et al., 2008; Mayer, 2013; Skott and Guy, 2013) with its increased emphasis on shareholder value. This phenomenon could be playing a role in the rise in executive reward and may explain the different effect of '%NEDs' from that found by Guest (2010) who utilised a narrower measure of pay (essentially salary plus annual bonus) over the earlier period of 1983-2002.

It can also be noted in Table 5, that the insignificant coefficients on the interaction of the percentage of non-executive directors and total shareholder return ('%NEDs.TSR') suggests that a higher proportion of non-executives does not lead to an increased pay-performance connection in realised pay. However, a closer inspection[2] of how pay varies over the range of TSR values for companies with different levels of non-executives does indicate that the top performers are better rewarded when the proportion of non-executive directors exceeds 50%, which has been best practice since the Combined Code of 2003. This is shown in Figure 3.

Insert Table 5: Settling Up in the light of Realised Pay

Table 6 is a repeat of Table 5 save that it extends the analysis by incorporating variables that capture conformance to the institutional environment. These describe whether the executive is subject to certain performance conditions in the long term incentive component of pay (specifically the scheme design characteristics 'no-retest', 'eps-hurdle' and 'tsr-hurdle'). Those conclusions drawn in the context of Table 5, remain unchanged. The estimates of interest here pertain to the interaction between performance (TSR) and the incorporation of the various scheme design characteristics. Table 6 column (2) indicates that each of these significantly increases the pay-performance sensitivity ($p < 0.05$). This is contrary to institutional theory and supports the agency perspective whereby such pay arrangements are introduced to sharpen the pay-performance relationship. Analysed separately, however, column (6) indicates that this conclusion remains valid ($p < 0.05$), but for value creators no significant conclusion can be drawn. Thus, once again, the results are mixed, with the institutional perspective being rejected for value destroyers in favour of a more traditional agency theory view. But for value creators the picture is less clear.

Insert Table 6: Settling Up in the light of Realised Pay with Institutional Variables

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[2]We are grateful to one of the anonymous referees for this suggestion.

5 Discussion and conclusion

Using a large sample of executive careers that are observed between 1996 and 2008, it has been shown that in a substantial proportion of cases there is a disconnect between pay and performance. The evidence that boards avail themselves of the entire boardroom career in post of an executive to settle-up or fine tune the pay-performance relationship through a settling-up process is mixed. By adopting a career perspective, it is shown that the pay to performance elasticity is significantly higher for value-creating executives than for value destroying executives. Nevertheless, there is evidence that on a year-to-year basis boards do make an effort to learn from past outcomes and balance pay with performance. For value creators (but not for value destroyers), pay in any year in the career is related to the balance of cumulative pay and performance delivered to that point; consistent with the Murphy (1986) learning hypothesis, as careers develop the strength of this settling-up process becomes stronger as the true capacity and ability of the executive is revealed. These results are obtained using a wide measure of pay that includes the effects of long term incentives such as executive share options and performance shares.

As with any study that utilises panel data, there is always a sense that more could have been gained with a longer time series of data. The time series here ran out in 2008 and an obvious pointer for further research is to ask what happens in the subsequent recession. In terms of further investigation, there is also scope for work focusing on the role of individual components of pay such as annual bonus, long term incentives etc. There is also an important role to be played by qualitative work in this field. The institutional perspective portrayed above relies, perforce, on the interpretation of certain key variables - essentially the size of the board, the proportion that are non-executive, and certain key design characteristics of long-term incentives. Qualitative studies centred around the workings of the board, and of the remuneration committee in particular, promise a fruitful way of deepening our understanding. As indicated above, there is an existing kernel of work in this area, e.g., (Bender, 2003; Lincoln et al., 2006; Main et al., 2011, 2008; Ogden and Watson, 2008), but more remains to be done.

The results presented above illustrating an asymmetry of treatment between executive careers marked by value creation and those marked by value destruction suggests that designing an optimal contract to establish incentives which align the interests of the executives and the shareholders is clearly a challenge when confronted by the conditions of bounded rationality and asymmetric information that characterise the boardrooms of large companies. But the settling-up version of agency theory (Fama, 1980; Wowak et al., 2011) suggests that advantage could be taken of the continuing employment relationship over the career of an executive while in post, to effect a closer linkage between pay and performance. The fact that the observed settling-up process is statistically insignificant and empirically more modest in the case of value destroyers opens the possibility of rival explanations of boardroom decision making that rest on managerial power and neo-institutionalism as both of these approaches accommodate the empirical reality of a major disconnect between pay and performance of the top executives in a company. Equally, it can remain consistent with a principal-agent perspective if the payment for failure is regarded in the context of an insurance payment, whereby the risk-averse agent (executive) is compensated for a disappointing career as an executive by the diversified risk-neutral principal (shareholder). This is the logic that underpins implicit contract theory (Rosen, 1985).

The results presented above make clear the extent of the 'heads I win, tails you lose' (Cuomo, 2009; Sanders, 2001) type of outcome that has arisen in the area of executive pay. By adopting a career perspective we demonstrate that the achieved pay-performance elasticity is relatively modest for value destroyers and that the settling-up process does not seem capable of adjusting pay in the light of their poor record of performance. The presence of non-executive directors seems to add a sense of legitimacy to higher levels of pay across all of the performance distribution, albeit with greater rewards for the top performers. This observation may be confounded by an increased financialisation (Froud et al., 2008; Mayer, 2013; Skott and Guy, 2013) which may have accompanied the increased presence of non-executive directors over the period. On the other hand, the conformance to institutional guidelines regarding

the adoption of certain styles of performance arrangements does much as agency theory predicts (sharpening the pay-performance elasticity) rather than resulting in more permissive pay awards (Bebchuk and Fried, 2004) due to the legitimacy afforded by such conformance. It appears that these performance conditions are not being used merely to camouflage high levels of pay and are seen to sharpen pay-performance elasticity, as predicted by agency theory. These findings also undermine the picture of the board being trapped by the mimetic behaviour of neo-institutional theory, i.e., 'what matters is how rewards appear, not whether performance is being objectively overvalued' (Perkins and Hendry, 2005, p.1464).

While not flowing directly from the above research investigation, one approach to reducing the potential for a disconnect between pay and performance of the type documented above, would be to prevent executives from cashing-out long-term incentives and thereby enjoying the rewards of early success before shareholders can be assured that any improvement in performance is not transient. To this end, it can be argued that all vested long-term incentive pay should be held in company shares ('Career Shares', see Bebchuk and Fried (2010); Bhagat and Romano (2009); Hill (1994); Main (2011) and Main et al. (2011)) until the executive leaves the board - and possibly for a year or so longer, so ensuring the succession process is successful. This would engineer an automatic cumulative perspective to pay. Those achieving high performance early in their career would have their feet held to the fire throughout the remainder of their time in office as the later share price impacts on the value of their career pay. Those who underperform in that later period would experience an automatic settling-up or claw-back as a faltering share price reduces their career pay. On the other hand, initially hesitant or slow beginnings are quickly forgiven as a later high performing share price lifts the value of career pay. All of this occurs automatically.

The findings described above do not imply any rejection of agency theory. As Wiseman et al. (2012) make clear, one can accept the basic premise of this approach (individuals with an interest in an enterprise may have divergent aspirations) while allowing for the particular social setting in which the action is taking place. In discussing institutional influences on executive

pay, DiPrete and Eirich (2010) invoke the Coleman (1986) macro-to-micro and micro-to-macro distinction to argue that good governance can produce higher not lower levels of executive pay. In the present context, we have presented evidence that demonstrates the disconnect that occurs in many companies between executive pay and performance. This disconnect is seem to occur alongside clear evidence of efforts being made to settle-up executive pay in the light of cumulative performance. While the rival explanations to agency theory, namely managerial power and neo-institutionalism, are shown to be inconsistent with the observed outcomes, it is clear that any settling-up process is not occurring in a vacuum and that there is scope for such theories along with others such as financialisation to play a part.

Table 1: Summary Statistics Career

	N	p1	p25	p50	p75	p99	Mean	St. Dev	skew
Career Pay and Performance									
TDC Realised (£M)	3157	.1335	.8704	1.72	3.325	21.76	2.983	4.384	5.676
TDC Awarded	3157	.1515	1.016	1.992	3.837	25.88	3.46	5.422	7.451
TSR	3157	-4.194	-.4348	.2165	.7052	2.238	.004589	1.208	-1.396
Δ SW (£M)	3157	-7848	-84.41	50.18	438.2	27358	869.5	7181	2.967
Career Controls									
Sales (£M)	3157	2.347	102.7	349.2	1407	34961	2552	9733	11.06
Board	3157	5.143	8.5	10.29	12.5	20.3	10.74	3.149	.8205
% NEDs	3157	.2388	.4255	.5104	.5889	.7744	.5069	.1186	-.07026
Age	3157	33.83	43.5	48.14	53.49	64	48.42	6.843	.1553
Tenure	3157	2.034	3.001	4.381	6.434	11.74	5.009	2.425	.9075
Value Creators									
TDC Realised (£M)	1915	.1581	1.026	2.104	3.984	22.6	3.55	4.914	5.311
TSR	1915	.003667	.2917	.5845	.9974	2.354	.7112	.5479	1.218
Δ SW (£M)	1915	.4545	81.5	304	1061	40670	2243	7504	7.382
Value Destroyers									
TDC Realised (£M)	1242	.1118	.731	1.31	2.377	18.43	2.11	3.221	6.243
TSR	1242	-5.272	-1.523	-.7084	-.263	-.007749	-1.085	1.136	-1.763
Δ SW (£M)	1242	-25150	-454.8	-144.7	-52.49	-1.235	-1248	6073	-9.532

1. The sample comprises FTSE350 executive directors serving between 1996 and 2008. *N* is an 'executive career', which is the length of time serving as an executive director on the board. The sample excludes careers less than 2 years and those careers commencing prior to 1st January 1996.

2. *Value Creators* are executives who's total shareholder return (*TSR*) is positive over their career. *Career TSR* is measured as the difference in the log of the company's return index taken at the start of their career and at the end of their career. *TSR* is multiplied by the average Market Capitalisation over the executive's career to give Δ *Shareholder Wealth* (*SW*).

3. *TDC realised* is total compensation realised over the whole career, in Dec 2008 £M. This includes salary, bonuses, perks and the *realised* values from share options, deferred bonuses and vested equity incentives. This is our preferred measure of pay when analysing the efficiency of the remuneration contract over the executive's career. *TDC Awarded* is an alternative measure of total compensation that measures the expected value of options and equity incentives at their grant date.

4. The controls comprise *Sales*(turnover in Dec 2008 £M), *Board* (no. of directors at the year end), *%NEDs* (the percentage of the board comprising non-executive directors at the year end), *Age* (the age of the executive at the year end) and *Tenure* (the executive's tenure to date measured in years). For the career panel, the average value over the executive's tenure was taken.

Table 2: Summary Statistics Annual

	N	p1	p25	p50	p75	p99	Mean	St. Dev	skew
Annual Pay and Performance									
TDC Realised (£M)	16,356	.01785	.1938	.3342	.6129	4.294	.5776	.9636	9.791
TDC Awarded	16,356	.02152	.216	.3928	.7429	4.163	.6677	1.35	35.66
TSR	16,356	-1.87	-.1732	.06154	.2802	1.247	.01121	.537	-1.199
Δ SW (£M)	16,356	-5259	-43.36	11.83	116.9	6109	131.8	2034	1.719
Annual Controls									
Sales (£M)	16,356	1.551	93.54	340.1	1418	35974	2624	10168	10.88
Board	16,356	5	8	10	13	21	10.77	3.563	.7917
% NEDs	16,356	.2222	.4167	.5	.6	.8182	.5113	.1355	-.07248
Age	16,356	33.33	43.33	48.24	53.44	64.58	48.46	7.002	.1245
Tenure	16,356	.06023	1.506	2.857	4.789	10.25	3.358	2.438	.8006

Dummy Variables	N	0	1	Per. == 1
Scheme	16,356	3,767	12,589	76.97%
LTIP	16,356	9,368	6.988	42.72%
Vesting Conditions				
none	16,356	15,154	1,202	7.35%
eps-hurdle	16,356	8,795	7,561	46.23%
tsr-hurdle	16,356	10,626	5,730	35.03%
other	16,356	11,912	4,444	27.17%
no-retest	16,356	3,031	13,325	81.47%

1. The table reports the data as structured in a panel, with repeated annual observations on the same executive for each year for their executive career. *N* here is pooled executive-years.

2. The dummy variables capture information on the long-term incentive arrangements for each executive-year in our sample. *Scheme* indicates whether or not a *live* long-term incentive scheme of any kind (options or equity) operated in that executive-year. *LTIP* indicates a live equity scheme that is not a share option scheme. The *Vesting Conditions* identify an EPS target, a TSR target or another type of target in place. *no-retest* identifies schemes under which awards lapse immediately upon failing to meet the performance targets. If *no-retest* equals zero, awards do not lapse immediately and may vest in subsequent years.

	Full Sample	Value Creators	Value Destroyers
	(1)	(2)	(3)
TSR_c	0.062***	0.17***	0.064***
	(6.27)	(6.02)	(4.09)
$\overline{Size}$	0.21***	0.22***	0.19***
	(24.3)	(18.8)	(14.6)
$\overline{Board}$	0.034***	0.032***	0.034***
	(6.58)	(5.06)	(4.02)
$\overline{\%NEDs}$	1.08***	1.23***	0.89***
	(9.61)	(8.49)	(5.21)
$\overline{Age}$	-0.00047	0.0014	-0.0039
	(-0.25)	(0.59)	(-1.31)
$Tenure$	0.049***	0.038**	0.070***
	(3.92)	(2.31)	(3.97)
$\overline{CEO}$	0.58***	0.58***	0.59***
	(18.4)	(13.6)	(12.2)
Observations	3,298	1,988	1,310
R-squared	0.650	0.666	0.597
F	198	137	64.7

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

1. The table estimates the pay-performance elasticity over the executive-career. The dependent variable is the logged value of career TDC realised and TSR_c is measured as the difference in the executive's company's logged return index taken at the start of their career and at the end of their career.

2. The coefficients on TSR_c for value creators and value destroyers are significantly different from each other ($p < 0.001$). An alternative test of an asymmetric pay-performance relationship was performed on the full sample by including an additional variable, TSR_+, that equals TSR if $TSR > 0$ and equals zero otherwise. With TSR_+ included in the full sample, the coefficient on TSR_c is not statistically significant ($p > 0.01$) whether as the coefficient of TSR_+ is 0.12 and significant ($p < 0.001$). Taken together, these results strongly support the contention that executive pay has a stronger association with TSR when TSR is in the positive range.

3. The control variables are taken at their mean values over the executive's career, other than $Tenure$, which is the number of years over which the executive's career is measured.

Table 4: Cumulative Pay and Cumulative Performance.

	Full Sample	Value Creators	Value Destroyers
	(1)	(2)	(3)
TSR_{cum}	0.047***	0.19***	-0.0054
	(4.38)	(9.50)	(-0.35)
$\%NEDs$	1.53***	1.71***	1.19***
	(14.4)	(12.9)	(6.77)
$Size$	0.24***	0.26***	0.22***
	(28.0)	(23.8)	(16.9)
$Board$	-0.014***	-0.012**	-0.022***
	(-2.82)	(-2.04)	(-2.90)
Age	0.0045**	0.0042*	0.0023
	(2.47)	(1.83)	(0.82)
$Tenure$	0.13***	0.12***	0.16***
	(11.0)	(7.21)	(9.31)
CEO	0.47***	0.46***	0.49***
	(13.4)	(10.4)	(9.00)
Year Dummies	YES	YES	YES
Observations	16,356	10,532	5,824
Executives	3,298	1,988	1,310

Robust z-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

1. The above table reports GEE estimates using the company-specific realised pay accumulated to date by the executive as the dependent variable. TSR_{cum} is cumulative TSR, which measures the log difference in the return index starting at the executive's appointment date and ending at each year end until their exit. By using the option "family(gaussian) link(identity) corr(exchangeable)" in STATA 12.1, we specified a linear structure, but accommodating the likely within-group correlation arising from repeated observations on the same executive.

2. The pay residuals $\hat{\mu}_{ijt}$ used later in this paper were calculated from the GEE estimates above. Specifically we estimated:

$$y_{ijt} = \boldsymbol{X'_{ijt}}\hat{\boldsymbol{\beta}} + \mu_{ijt}$$
$$\hat{\mu}_{ijt} = y_{ijt} - \boldsymbol{X'_{ijt}}\hat{\boldsymbol{\beta}}$$

where y_{ijt} represents realised cumulative pay transformed by its natural log at firm i, for individual j, at time t; and $\boldsymbol{X'_{ijt}}\hat{\boldsymbol{\beta}}$ is the vector of independent variables with their associated estimated coefficients.

Table 5: Settling Up in the light of Realised Pay

	Full Sample		Value Creators		Value Destroyers	
	(1)	(2)	(3)	(4)	(5)	(6)
$CumPayResid_{t-1}$	-0.041***	-0.096***	-0.058***	-0.14***	-0.014	-0.052
	(-3.13)	(-3.68)	(-3.43)	(-4.16)	(-0.74)	(-1.48)
$CumPayResid.Ten_{t-1}$		-0.023***		-0.023***		-0.026**
		(-3.18)		(-2.91)		(-2.30)
$TSRcum_{t-1}$	0.067***	0.061***	0.079***	0.068***	0.074***	0.063***
	(5.79)	(5.41)	(3.55)	(3.07)	(4.42)	(3.81)
TSR	0.060	0.052	0.14**	0.15**	0.049	0.024
	(1.58)	(1.30)	(2.41)	(2.33)	(0.96)	(0.44)
$\%NEDs$	0.94***	0.94***	1.02***	1.02***	0.79***	0.86***
	(14.4)	(14.9)	(12.8)	(12.5)	(7.74)	(8.13)
$\%NEDs.TSR$	0.093	0.12	-0.060	-0.086	0.14	0.19*
	(1.28)	(1.60)	(-0.53)	(-0.72)	(1.47)	(1.76)
$Size$	0.23***	0.23***	0.26***	0.25***	0.20***	0.20***
	(35.5)	(36.1)	(29.2)	(29.8)	(17.1)	(18.2)
$Board$	0.011***	0.012***	0.0067**	0.0057*	0.011**	0.011**
	(3.99)	(4.33)	(1.96)	(1.66)	(2.40)	(2.44)
$Tenure$	0.0047	0.014***	0.0063	0.018***	-0.00040	0.0012
	(1.03)	(2.60)	(1.03)	(2.63)	(-0.050)	(0.12)
CEO	0.48***	0.48***	0.50***	0.47***	0.46***	0.47***
	(21.3)	(21.2)	(17.5)	(16.1)	(12.6)	(13.1)
Year Dummies	YES	YES	YES	YES	YES	YES
Executive FE	YES	YES	YES	YES	YES	YES
Observations	13,058	13,058	8,544	8,544	4,514	4,514

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

1. The table above estimates logged annual TDC awarded for each executive using GMM (xtabond2 in STATA 12.1). The two-step version of the estimator is used with Windmeijer adjusted standard errors.

2. The residuals calculated from table 4 identify the settling up mechanism. $CumPayResid_{t-1}$ captures additional payment, conditional on observables in table 4. As such, prior overpayment in realised pay is associated with current underpayment in awarded pay and vice-versa. This process is more clearly defined as the executive progresses through their career, as captured by $CumPayResid.Ten_{t-1}$ which interacts the residuals with executive tenure.

Table 6: Settling Up in the light of Realised Pay and Institutional Variables

	Full Sample		Value Creators		Value Destroyers	
	(1)	(2)	(3)	(4)	(5)	(6)
$CumPayResid_{t-1}$	-0.043***	-0.025	-0.047***	-0.029	-0.033*	-0.043
	(-3.39)	(-1.18)	(-2.84)	(-1.06)	(-1.79)	(-1.29)
$CumPayResid.Ten_{t-1}$		-0.035***		-0.036***		-0.025**
		(-5.67)		(-5.32)		(-2.29)
$TSRcum_{t-1}$	0.14***	0.14***	0.23***	0.23***	0.086***	0.077***
	(12.0)	(12.8)	(10.8)	(11.3)	(5.13)	(4.89)
TSR	0.052	0.041	0.15***	0.17***	0.0072	-0.025
	(1.44)	(1.11)	(2.81)	(3.00)	(0.16)	(-0.53)
$\%NEDs$	0.65***	0.67***	0.82***	0.81***	0.44***	0.48***
	(11.0)	(11.8)	(11.1)	(11.1)	(5.03)	(5.47)
$\%NEDs.TSR$	0.073	0.086	-0.038	-0.078	0.14	0.19**
	(1.04)	(1.20)	(-0.34)	(-0.69)	(1.55)	(2.02)
$Size$	0.18***	0.18***	0.21***	0.21***	0.15***	0.15***
	(30.2)	(32.3)	(27.4)	(29.1)	(14.3)	(15.5)
$Board$	0.014***	0.013***	0.0094***	0.0099***	0.012***	0.010***
	(5.42)	(5.24)	(3.09)	(3.27)	(2.93)	(2.59)
$Tenure$	0.028***	0.042***	0.019***	0.035***	0.016**	0.021**
	(6.74)	(9.07)	(3.64)	(6.44)	(2.19)	(2.55)
CEO	0.44***	0.44***	0.43***	0.41***	0.43***	0.45***
	(21.7)	(23.0)	(17.1)	(17.2)	(14.1)	(15.5)
Institutional Variables						
Scheme	0.18***	0.15***	0.22***	0.18***	0.13***	0.10**
	(6.73)	(5.62)	(6.84)	(5.57)	(2.91)	(2.41)
LTIP	0.064***	0.054***	0.048**	0.043*	0.073**	0.050
	(3.45)	(3.01)	(2.14)	(1.92)	(2.34)	(1.61)
no-retest	-0.039**	-0.040**	-0.029	-0.031	-0.027	-0.018
	(-2.45)	(-2.54)	(-1.42)	(-1.54)	(-1.00)	(-0.66)
no-retest.TSR	0.032	0.048**	-0.026	-0.023	0.074**	0.075***
	(1.27)	(2.08)	(-0.72)	(-0.59)	(2.58)	(2.62)
eps-hurdle	-0.0081	-0.0078	-0.026	-0.021	0.017	0.033
	(-0.47)	(-0.47)	(-1.22)	(-0.97)	(0.56)	(1.11)
eps-hurdle.TSR	0.051***	0.060***	0.049	0.048	0.059**	0.059**
	(2.60)	(3.15)	(1.63)	(1.51)	(2.55)	(2.45)
tsr-hurdle	0.070***	0.073***	0.052**	0.053**	0.12***	0.13***
	(3.66)	(3.97)	(2.17)	(2.24)	(3.61)	(4.15)
tsr-hurdle.TSR	0.091***	0.092***	0.084**	0.088**	0.069***	0.073***
	(3.81)	(3.97)	(2.17)	(2.14)	(2.78)	(2.88)
other	0.095***	0.089***	0.12***	0.11***	0.031	0.035
	(5.71)	(5.37)	(5.69)	(4.96)	(1.06)	(1.26)
other.TSR	0.043**	0.052**	0.046	0.047	0.032	0.034
	(2.01)	(2.39)	(1.13)	(1.08)	(1.29)	(1.27)
Year Dummies	YES	YES	YES	YES	YES	YES
Executive FE	YES	YES	YES	YES	YES	YES
Observations	13,058	13,058	8,544	8,544	4,514	4,514

t-statistics in parentheses
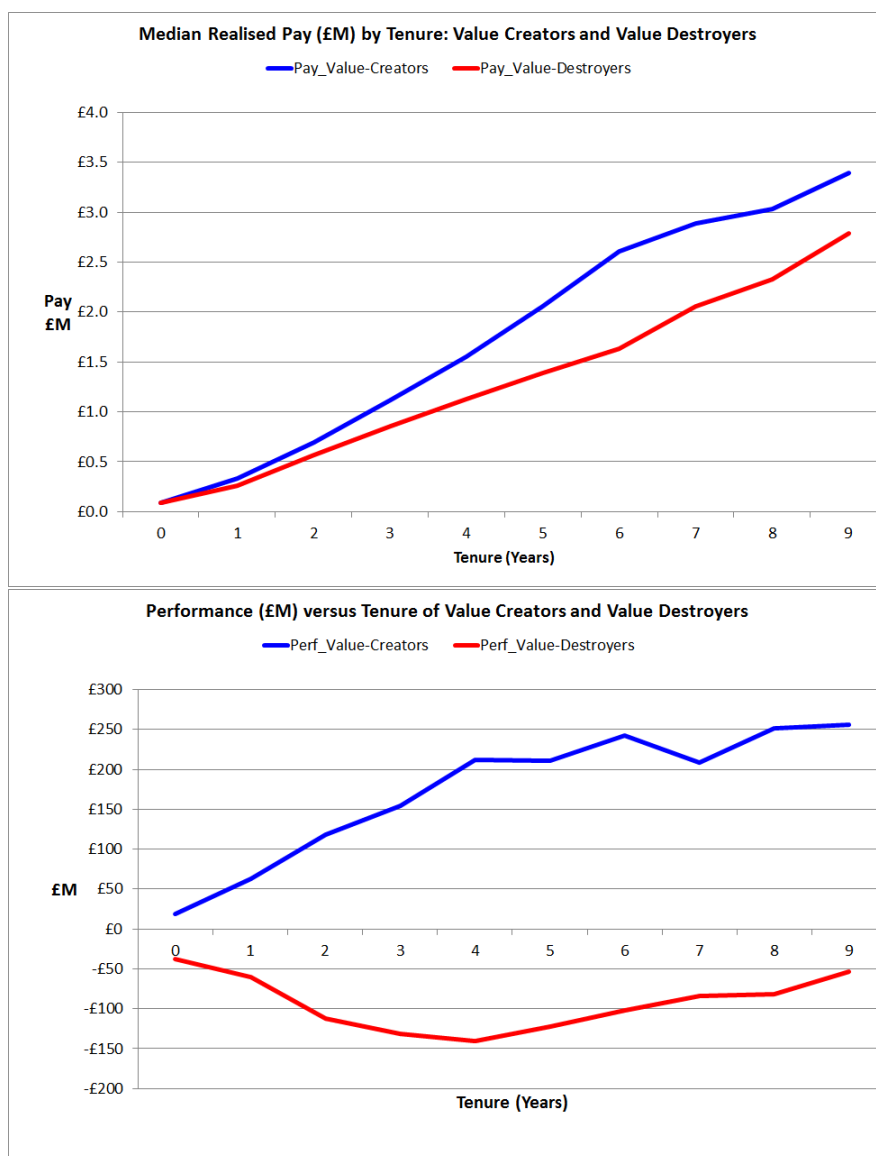*** p<0.01, ** p<0.05, * p<0.1

1. The table estimates the same equations as Table 5 but also include institutional variables. The institutional variables are shown to both increase pay but also to sharpen the pay-performance relation. This is inconsistent with a neo-institutional mnemonic process. Instead, it is more consistent with the trade-off associated between incentives and the participation constraint as predicted by agency theory.

Figure 1: Distribution of Career Pay and Performance
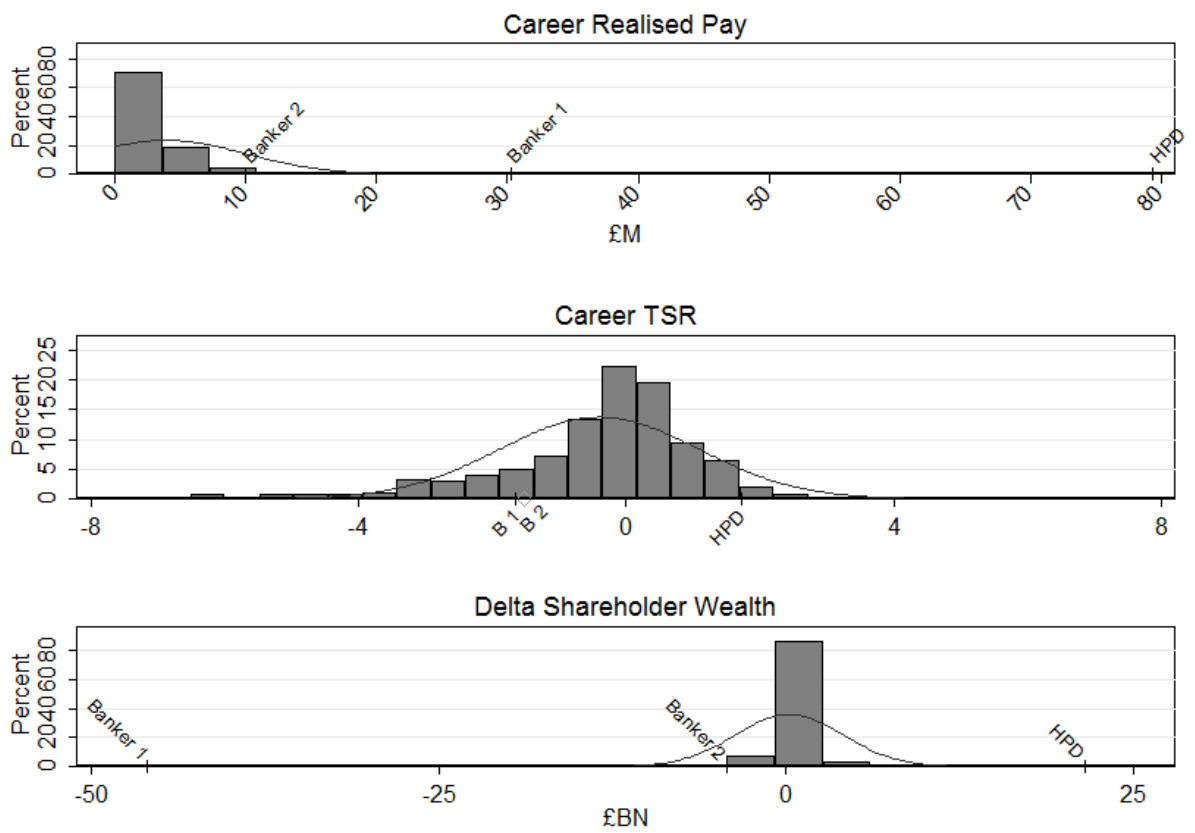
1. Distribution of CEO pay and shareholder returns from a career based perspective.
2. Excludes careers commencing prior to 1st January 1996
3. Careers less than 2 years dropped
4. HPD signifies the executive who is the Highest Paid Director observed in our sample

Figure 2: Heads I win, tails you lose Value creators vs Value Destroyers

Median Realised Pay (£M) by Tenure: Value Creators and Value Destroyers

Pay_Value-Creators · Pay_Value-Destroyers

Performance (£M) versus Tenure of Value Creators and Value Destroyers

Perf_Value-Creators · Perf_Value-Destroyers

1. Performance is TSR is multiplied by the average Market Capitalisation over the executive's career
2. Excludes careers commencing prior to 1st January 1996
3. Careers less than 2 years dropped

Figure 3: Impact of performance on pay by above and below 50% NEDs

Predictive margins of TSR on Career Pay by NEDs
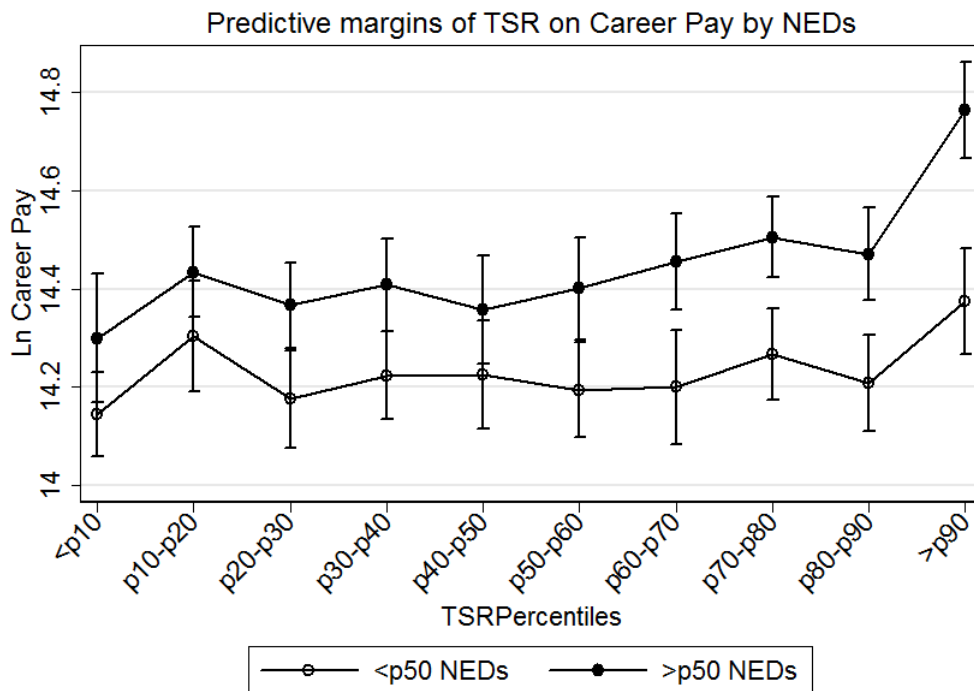
1. The two series plot the predictive margins for TSR on pay after creating a categorical variable (in deciles) for TSR, interacting this with a binary variable for %NEDs (>50% & <50%) and regressing these variables on Career pay along with the control variables shown in table 3. The graph was created with margins and marginsplot in STATA 13.1.
2. Companies with greater than 50% non-executive directors pay their directors more. This effect is shown by the vertical distance between the two series.
3. The lines diverge at the top end of the TSR distribution which indicates that companies with more than %50 NEDs pay their directors more for performance. However, the divergence only occurs after the 50th percentile of TSR. Alternative splits in the NEDs distribution e.g. at 25% and 75% produced a similar pattern (available on request).

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