Executive pay and performance: The moderating effect of CEO power and governance structure

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Abstract

This paper examines the crucial question of whether chief executive officer (CEO) power and corporate governance (CG) structure can moderate the pay-for-performance sensitivity (PPS) using a large up-to-date South African dataset. Our findings are three-fold. First, when direct links between executive pay and performance are examined, we find a positive, but relatively small PPS. Second, our results show that in a context of concentrated ownership and weak board structures; the second-tier agency conflict (director monitoring power and opportunism) is stronger than the first-tier agency problem (CEO power and self-interest). Third, additional analysis suggests that CEO power and CG structure have a moderating effect on the PPS. Specifically, we find that the PPS is higher in firms with more reputable, founding and shareholding CEOs, higher ownership by directors and institutions, and independent nomination and remuneration committees, but lower in firms with larger boards, more powerful, and long-tenured CEOs. Overall, our evidence sheds new important theoretical and empirical insights on explaining the PPS with specific focus on the predictions of the optimal contracting and managerial power hypotheses. The findings are generally robust across a raft of econometric models that control for different types of endogeneities, pay, and performance proxies.

Keywords*:* executive pay; corporate performance; corporate governance; CEO power, endogeneity, South Africa.

JEL classification: G32, G34, G38.

Introduction

Agency theory has suggested a number of different mechanisms, including incentive alignment (pay) and monitoring (CG) for resolving agency problems in modern corporations, whereby ownership is separate from control (Jensen & Meckling, 1976; Lee et al., 1995; Sanchez-Marin & Baixauli-Soler, 2014). However, while the overall aim for designing executive pay contracts is to align the interests of owners and managers, such incentive contracts could themselves result in additional agency conflicts (Bonache & Fernandez, 1997; McKnight & Tomkins, 1999; Ding et al., 2006; Balafas & Florackis, 2014). Not surprisingly, the pay-for-performance sensitivity (PPS) literature is underpinned by two sharply contrasting incentive alignment theories: optimal contracting theory (OCT) and managerial power hypothesis (MPH) (Murphy, 1985, 1999; Gomez-Mejia et al., 1987; Bebchuk et al., 2002; van Essen et al., 2015). The OCT posits that when properly designed, executive pay and incentive contracts can serve as powerful tools through which performance can be improved by reducing agency conflicts and closely aligning the interests of owners and managers (Jensen & Murphy, 1990; Romero & Cabrera, 2001; Cho et al., 2014); hence predicting a strong positive PPS. By contrast, the MPH suggests that managers typically have great power to set their own pay, and that they use that power to expropriate shareholders' wealth (Bebchuk & Fried, 2003, 2004; Bloom et al., 2003; Tien & Chen, 2012); thus expecting the PPS to be relatively small.

The results of a considerable number of studies that have examined the link between director pay and performance suggest a positive, but relatively small PPS (Frydman & Saks, 2010; Goergen & Renneboog, 2011; Pepper et al., 2013), with some suggesting that performance (firm size) can explain as low (high) as less than 5% (over 40%) of the differences in executive pay (Tosi et al., 2000; Reddy et al., 2015). However, whilst these appear to provide support for the MPH (Bebchuk & Weisbach, 2010; Frydman & Jenter, 2010; Blanco & Golik, 2015), it is quite apparent from the analyses of previous studies that a number of other reasons may also explain their evidence of relatively small PPS (Conyon, 1997; Gomez-Mejia & Wiseman, 1997; Berrone et al., 2008; DeVaro & Fung, 2014; Sanchez et al., 2010).

First, within the MPH, two distinct agency problems arise when setting executive pay arrangements: primary and secondary (Ding et al., 2014, 2015; Guo et al., 2015). The primary (first-tier) agency problem relates to the power that CEOs may have in setting their own pay, and in rigging the director selection process so that the independence of the board is compromised (Morse et al., 2011). The secondary (second-tier) agency problem concerns the apparent conflict of interests faced by directors in deciding both their

own pay and that of the CEO. With compromised boards, the CEO will have extra power to influence the re-appointment, as well as the incentive contracts, of the current directors (Bebchuk & Weisbach, 2010). This can engender a culture of mutual-favour or reciprocity, whereby an overly generous CEO pay arrangement is approved by the board in return for favourable pay packages for the directors, and thereby equally leading to excessive rent extraction. However, and whilst the first-tier agency problem has been widely investigated, the effect of the second-tier agency conflict on the PPS has seldom been investigated (Core et al., 1999, 2003).

Second, and of close relevance to our study, existing studies that have investigated the PPS by employing changes in pay and performance have also often done so by examining direct links between pay and performance without accounting for the effect of both incentive alignment (pay) and monitoring (CG) mechanisms (Main et al., 1996; Tosi et al., 2000). Further and whilst a limited number of prior studies have taken into account the role of CG when estimating the PPS (Chahine & Goergen, 2011; Conyon & He, 2011, 2012), they have mostly done so by examining direct effect of CG on the PPS without considering any potential interactions that may exist between monitoring and incentive alignment mechanisms (Lin, 2005; Chen et al., 2011). By contrast, studies assessing the extent to which CEO power and CG features may affect the PPS are rare (Cornett et al., 2009; Finkelstein et al., 2009; Li & Srinivasan, 2011; Wowak et al., 2011). A major methodological implication is that failing to a sufficiently complex model of the PPS, that simultaneously examines the effects of both incentive alignment and monitoring mechanisms, can result in endogenous associations (Larcker & Rusticus, 2010; Gil-Alana et al., 2011). Existing studies, however, have mainly explored direct links between pay and performance, and thereby crucially ignored endogeneity problems that may be posed by the possible joint use of incentive alignment and monitoring mechanisms when estimating the PPS, and we argue that this may also explain the small PPS.

Finally, similar to most developing countries, SA firms face unique governance challenges in comparison with their developed counterparts. Concentrated ownership (La Porta et al., 1999), weak investor protection (La Porta et al., 2000), ineffective board structures (Dharwadkar et al., 2000; Peng et al., 2008), inactive external governance mechanisms (Young et al., 2008; Claessens & Yurtoglu, 2013), and consequently, lower market valuation of public corporations (La Porta et al., 2002), are easily observable. In fact, Conyon and Murphy (2000) and Firth et al. (2006, 2007) show that executive pay differs substantially across countries due to variations in legal, institutional, cultural and CG practices. However,

past studies are concentrated in the UK and US, which present comparatively similar institutional contexts (Mehran, 1995; Zheng, 2010). In developing countries with different institutional settings, with particular regard to CG reforms, ownership structures and executive pay incentives, the PPS can be expected to differ from that identified in industrialised countries. As such, studying the PPS in developing countries, where empirical evidence is scarce, arguably contributes to a more complete understanding of the link.

Consequently, the current study seeks to extend, as well as make a number of new contributions to the extant literature by addressing some of the articulated limitations of prior studies. First, we investigate the extent to which the PPS can be moderated by CEO power and CG qualities over a ten-year period. Our results contribute to the literature by showing that the PPS differs depending on CEO power and CG structures. Second, given the separate agency conflicts that can arise from incentive contracts, we distinctively and explicitly examine both the effects of the primary (CEO pay) and secondary (all executive directors' pay) agency problems on the PPS. Our findings contribute to the literature by indicating that in a context of concentrated ownership and weak board structures; the second-tier (monitoring power and opportunism of other directors) agency conflict is stronger than the first-tier (CEO power and opportunism) agency problem. Finally, our results contribute to the literature by indicating that the PPS for both the CEO and all executive directors is generally small, but relatively strong in better-governed firms.

The remainder of the paper is organised as follows. The following sections review the literature, outline research design, report empirical analyses and provide a conclusion.

Theory, prior empirical literature and hypotheses development

In modern corporations, ownership tends to be diverse, whilst control is often in the hands of a few professional managers (Berrone et al., 2008; Ntim et al., 2015a, b). This generates a classic agency conflict, where opportunistic managers may not always work in the best interests of owners. Different mechanisms, including incentive alignment (pay) and monitoring (CG) have, therefore, been suggested to motivate managers to work in the best interests of owners (Jensen & Meckling, 1976; Al-Bassam et al., 2016; Al-Bassam & Ntim, 2016). A major way of aligning the interests of owners and managers is to design appropriate pay incentives (Morse et al., 2011; Pepper et al., 2013), and this is the central rationale underlying a number of executive pay and CG reforms that have been pursued around the world (Cadbury, 1992; King, 2002). Discernibly, the crucial question, as to whether such executive pay incentives are

effective in improving performance has equally generated a considerable theoretical and empirical literature (See Murphy, 1999; Gomez-Mejia & Wiseman, 1997; Tosi et al., 2000; Core et al., 2003; Finkelstein et al., 2009; Frydman & Jenter, 2010; Chen et al., 2011; van Essen et al., 2015 for comprehensive reviews). Theoretically, there are two major contrasting views: OCT and MPH (Murphy, 1985; Bebchuk & Fried, 2003). The OCT considers executive pay packages as a result of arm's length dealing between independent corporate boards and executives that leads to the creation of efficient managerial incentive contracts that can align the interests of owners and managers (Jensen & Murphy, 1990; He et al., 2014). Therefore, OCT predicts a strong positive PPS, due to the assumption that executives have less control in setting their own pay (Dong et al., 2010; Upneja & Ozdemir, 2014).

In contrast, the MPH considers executive pay arrangements as a product of close negotiations between powerful executives and weak boards, which leads to the creation of inefficient managerial contracts that exacerbate agency problems (Bebchuk et al., 2002; Sapp, 2008). It should be noted that excessive managerial power can create two distinct agency conflicts. A first-tier agency conflict relates to the ability of the CEO to manipulate director appointment in order to gain control over board decisions that can facilitate excessive rent extraction (Gomez-Mejia eta al., 1987). A second-tier agency problem arises because directors may reward a CEO with an excessively high pay in return for a similar and reciprocal support from the CEO (Core et al., 2003; Morse et al., 2011). As executives are assumed to set their own pay (Bebchuk & Fried, 2003, 2004), the MPH expects a small, but not necessarily negative PPS, as it is possible for managers to be paid for 'luck' (i.e., for improved performance outside executive control) (Bertrand & Mullainathan, 2001).

The extant empirical literature on executive pay is not only inconclusive, but also disproportionately concentrated in the UK and US (Gomez-Mejia eta al., 1987; Hubbard & Palia, 1995; Main et al., 1996; Zheng, 2010 Balafas & Florackis, 2014; Kale et al., 2014; Kuo et al., 2014). These studies generally report a positive, but small PPS; although US studies document a relatively stronger PPS than their UK counterparts (Conyon & Murphy, 2000; Tosi et al., 2000). Using a sample of 1,049 US firms from 1974 to 1976, Jensen and Murphy (1990) reported positive PPS. Main et al. (1996) reported a similar, but smaller finding for a sample of 60 UK companies from 1981 to 1989. Whilst this appears to provide support for the MPH, early UK and US studies generally display a major limitation in that they include only a small number of control variables, especially CG mechanisms that can potentially affect the PPS.

In response to the latter problem, subsequent UK (Benito & Conyon, 1999; Dong & Ozkan, 2008; Balafas & Florackis, 2014) and US (Mehran, 1995; Core et al., 1999; Dong, 2014; Upneja & Ozdemir, 2014) studies have mostly examined the PPS by controlling for a raft of CG variables. These studies generally report similar small PPS. A limitation of these studies is that they typically do not explicitly address the potential endogeneity problems that may arise from the possible joint use of executive pay and CG by firms to minimise agency problems. These studies have also mostly examined the PPS for CEOs rather than other executive directors. These may explain the noticeably small PPS that has been reported by past studies (Dong, 2014; van Essen et al., 2015).

A small number of non UK and US studies have generally reported positive and, in contrast, comparatively stronger PPS (Cho et al., 2014; Ding et al., 2015). This indicates that the PPS may differ according to country-level institutional features, as well as company-specific characteristics. In particular, contextual differences in the effectiveness of board and ownership structures, legal, regulatory and enforcement environment, and markets (e.g., capital, control, labour, product and services) can explain the differences in the level of PPS that is observed across different countries (Li & Srinivasan, 2011; Wowak et al., 2011; Sanchez et al., 2010; Sanchez-Marin & Baixauli-Soler, 2014). In the UK and US, for example, ownership is often widely held within a fairly strong internal governance structures, and cultural, legal, regulatory and enforcement environment. This renders the external (governance) market for capital, corporate control, and labour highly active, and thereby serving as additional effective check on managerial capacity to expropriate corporate resources through excessive pay. By contrast, in most developing countries, such as SA ownership is usually held by a few block holders who usually dominate decisions (e.g., board appointments), and thereby weakening the ability of the board to effectively monitor managers. Concentrated ownership also renders external governance mechanisms, such as corporate control inactive, and thereby placing minority shareholders' interest at risk of expropriation by majority shareholders. In fact, and as an example of the case of research context potentially accounting for differences in the level of PPS that is observed, Sapp (2008) reports positive and higher PPS for 416 Canadian firms from 2000 to 2005 compared with similar UK and US firms. Studies by Kaplan (1994), Kang and Shivdasani (1995), Angel and Fumas (1997), Cheng and Firth (2005) and Merhebi et al. (2006), using German, Japanese, Spanish, Hong Kong and Australia companies, respectively, find similar positive and relatively strong PPS.

Further, and of direct relevance, the results of a limited number of studies conducted in a number of developing countries are largely consistent with the non UK and US evidence. For instance, using a sample of 2,104 Chinese firms from 2000 to 2010, Conyon and He (2012) report positive and higher PPS than those reported for UK and US companies. Their results are also generally consistent with those of previous and recent Chinese studies by Firth et al. (2006, 2007), Kato et al. (2006), Buck et al. (2008), Conyon and He (2011) and Ding et al. (2015), as well as those conducted in the emerging markets of Bulgaria, India, and Taiwan by Jones and Kato (1996), Kumar and Kaura (2002), and Cho et al. (2014), respectively. Therefore, given that the international evidence is broadly consistent with the predictions of the MPH, our first hypothesis is that:

H1a: The PPS is positive.

As previously explained and within the MPH, two distinct agency problems arise when setting executive pay arrangements: primary and secondary (Bebchuk et al., 2002). A first-tier agency conflict relates to the ability of the CEO to manipulate director appointment in order to gain control over board decisions that can facilitate excessive rent extraction (Gomez-Mejia eta al., 1987). A second-tier agency problem arises because directors may reward a CEO with an excessively high pay in return for a similar and reciprocal support from the CEO (Morse et al., 2011). Whilst the first-tier agency problem has been widely acknowledged and investigated (Frydman & Jenter, 2010), the effect of the second-tier agency conflict on the PPS has seldom been investigated (Core et al., 2003). Thus, and given the separate agency conflicts that can arise from incentive contracts, we distinctively and explicitly examine both the effects of the primary (CEO pay) and secondary (all executive directors' pay) agency problems on the PPS. We expect that in firms with powerful CEOs and weak monitoring (board and ownership structures) mechanisms, incentive contracts will be generously favourable to their CEOs, and therefore a weak PPS, as predicted by the MPH. However, in firms with strong governance, we expect that greater and closer managerial monitoring will help improve the PPS even in the face of suboptimal CEO incentive contracts, as predicted by OCT. We make similar predictions for the pay of all executive directors, but given the strategic and influential role of the CEO, the PPS for the CEO is expected to be larger than that of all executive directors.

We seek to test this proposition in SA where recent CG and executive pay reforms that have been pursued arguably render it interesting context to do so. Indeed, attempts at improving CG practices in SA

companies started with the publication of the first King Report in 1994 (King I) (Armstrong et al., 2006). In particular, King I emphasised the importance of properly functioning corporate boards (Ntim et al., 2012a, b). With specific regard to directors' pay, King I suggested that it should be proposed by a Remuneration Committee (RCOM) (see Table 1). However, the report failed to address the composition and independence of the committee, and crucially, the form, extent and medium of disclosing information relating to director pay (see Table 1; Ntim et al., 2015b, b). Although King I recognised the importance of board sub-committees, it failed to recommend the establishment of a nomination committee (see Table 1) that would nominate new independent directors for appointment to the board (Ntim et al., 2013). Arguably, this weakened the power of the RCOM and board to effectively monitor executive incentive contracts under King I.

Insert Table 1 about here

During the late 1990s, SA experienced a number of high profile corporate failures, such as the collapse of the Macmed, Leisurenet and Nedbank companies, which were attributed mainly to poor CG practices, including excessive director pay (Sarra, 2004). These domestic problems in combination with increased global attention on CG, resulted in a review of King I and the subsequent publication of a second King Report (King II) in 2002. Generally, King II built on and expanded many of the best CG practices of King I, including a detailed section that deals with director pay issues (Section 2.5, King II).

First and most noticeably, King II recommends that all the members of the RCOM, including the chairperson, should be independent non-executive directors (see Table 1; Armstrong et al., 2006). Second, to improve the independence of the director selection process, King II explicitly suggested the formation of an independent nomination committee consisting of a majority of independent directors, including the chairperson. Third, and unlike King I, King II explicitly specifies how executive pay should generally be structured, consisting of a fair mix of cash and equity-based incentives that is sufficient to attract, retain and motivate executives of the quality required by the board to deliver excellent performance (see Table 1). Additionally, it suggests that the views of the CEO may be taken into account by the committee in determining the remuneration of other executive directors, but that a CEO should not play any part in decisions relating to her/his own pay. Fourth, in addition to the RCOM and board, King II expects shareholders, especially institutional ones, to play an active part in setting director pay. An important improvement on King I is the requirement that director pay be approved by shareholders at an AGM, in

which the chairperson of the RCOM is expected not only to consult the views of the major institutional shareholders when setting director pay, but to also be available to answer questions at the AGM (see Table 1). King II suggests that encouraging greater shareholder activism (i.e., having "say-on-pay"), including potential outrage from institutional owners and the general public can help in restraining executive pay.

Fifth, and different from King I, King II explicitly indicates the exact items, frequency and medium of disclosing information relating to director pay (see Table 1; Malherbe & Segal, 2003). Specifically, it suggests that companies should engage in full disclosure of individual executive, non-executive and independent director's remuneration packages, giving details of fees, salaries, bonuses, pension contributions, share options, restraint payments or long-term incentive plans (LTIPs) and all other benefits in the annual report. Overall, and in comparison with King I, King II is comprehensive in terms of focus and scope, and strengthens the independence and monitoring power of the RCOM, board and shareholders. However, it should also be noted that some of the proposals, such as the suggestion for the RCOM to seek the views of the CEO when setting the pay packages of other executive directors, could themselves potentially give rise to extra agency conflicts (second-tier agency conflict). Additional to the pursuance of recent CG reforms is the feature that, unlike the UK and US, ownership of firms is highly concentrated (La Porta et al., 1999). The combination of ownership concentration and the historically poor record of implementing and enforcing corporate regulations (Malherbe & Segal, 2003), has greatly weakened the market for corporate control in SA; giving rise to a number of agency problems, including excessive executive pay, often to the detriment of employees and minority shareholders (Sarra, 2004). In this setting, it is arguable to expect that the first-tier agency problem to be weaker than the second-tier agency problem in the form of smaller PPS relating to the executive directors compared with that of CEOs, and therefore, our next hypothesis is that.

H1b: The second-tier agency conflict is expected to be stronger than the first-tier agency problem.

The moderating effect of CEO Power and CG structure on the PPS

As previously explained, although a limited number of studies have examined the direct effect of CG on the PPS (Core et al., 1999; Cornett et al., 2009; Sanchez et al., 2010; Conyon & He, 2011, 2012; Reddy et al., 2015; van Essen et al., 2015), studies examining the moderating (joint) effect of CG and especially CEO power on the PPS even within a developed corporate setting are rare (Li & Srinivasan, 2011; Wowak

et al., 2011). Thus, in this section, we seek to contribute to extant literature by briefly ascertaining whether CEO power and CG structure have a moderating effect on the PPS within a developing corporate context.

The effect of CEO Power on the PPS

Prior studies have identified a number of CEO power attributes, including CEO age, duality, founding status, ownership, power, reputation and tenure, which can have important implications for CG, performance and the PPS (Conyon, 1997; Lippert and Porter, 1997; Benito & Conyon 1999; Lin, 2005; Sapp, 2008). We, therefore, focus on the effect of these seven (CEO age, duality, founding status, ownership, power, reputation and tenure) CEO power attributes on the PPS in the current study. From an MPH perspective, powerful CEOs, as represented by role duality and long-tenure, for example, may have greater control over the board and the pay-setting process, which can impact negatively on the PPS (Cornett et al., 2009). Theoretically, CEO role duality is considered detrimental because it vests more power and control in the CEO, which can generate extra agency problems, including granting CEOs greater freedom to engage in suboptimal pay practices (Conyon & He, 2011, 2012; Ntim, 2012b). In contrast, separating the two roles can improve monitoring by reducing the concentration of power in CEOs, which can facilitate an objective assessment of a CEO's performance (Conyon, 1997), and thereby improving the PPS. With respect to CEO reputation, Sanchez-Marin and Baixauli-Soler (2014) suggest that one of the results of increased public recognition and reputation (e.g., positions in peer rankings and wining of awards/prizes) of CEOs is that it facilitates non-performance induced increases in their pay packages, which can impact negatively on the PPS. Moreover, long-tenured and older CEOs are perceived to have greater experience and skill that can guarantee firm competitiveness and success (Sanchez et al., 2010), and are therefore, often offered higher pay packages that are not necessarily linked to their performance than their younger and less experienced colleagues, which can also impact negatively on the PPS. By contrast, increased commitment (OCT view) that is often displayed by founding, reputable and high shareholding CEOs can have a positive effect on the PPS (Wowak et al., 2011). Further, founding and shareholding CEOs, for instance, often offer a number of advantages, including possessing expert, in-depth and specific knowledge about corporate strategy and operations that reduces information asymmetry between boards and managers, holding concentrated and long-term ownership, and having large non-financial attachments and social interests to protect (e.g., emotional, psychological and reputational capital). Thus, the greater pecuniary and

non-pecuniary interests that founding CEOs often have in their corporations can provide them with greater incentive and ability to engage in closer monitoring of managers, and thereby leading to improved PPS.

The empirical literature is broadly consistent with the view that ensuring a balanced distribution of power at the top reduces the influence that CEOs may have over the pay setting processes and institutions, which can impact positively on the PPS (Lippert & Porter, 1997; Benito & Conyon 1999). For example, using 865 US listed firms from 2000 to 2005, Chhaochharia and Grinstein (2009) report that the level of CEO pay is higher in firms with CEO role duality than those with separate chairman and CEO positions. Similar results have been reported by Conyon (1997), Core et al. (1999), Lin (2005) and Sapp (2008), for samples of UK, Taiwanese and Canadian listed firms, respectively. With reference to founding status, Li and Srinivasan (2011) report a higher PPS for firms with serving founder CEOs than those that are not. Similarly, Sanchez-Marin and Baixauli-Soler (2013) report higher PPS for firms with CEOs with high reputation for performance than those that are not. In contrast, other studies report a lower PPS for firms with more powerful (e.g., having higher peer rankings), older and long-tenured CEOs (Bertrand & Mullainathan, 2001; Cornett et al., 2009; Wowak et al., 2011). With respect to SA, King II states explicitly that there should checks and balances such that too much power is not concentrated in one person, including the recommendation that the posts of chairman and CEO should not be held by the same individual in order to permit a clear division of responsibilities at the head of the company. This suggests that King II recognises balance of power within top management as a good CG practice and, therefore our second hypothesis is that:

H2: CEO power has a moderating effect on the PPS.

The effect of ownership structure on the PPS

An important CG mechanism that can moderate the PPS is ownership structure of the firm (van Essen et al., 2015). The extent to which the board is able to effectively monitor executives will depend on the level of ownership concentration/distribution (e.g., block, director and institutional shareholdings) and the type of influence that may be exerted by these owners, especially major shareholders (Wowak et al., 2011; Sanchez-Marin & Baixauli-Soler, 2014). Consequently and in this study, we examine the extent to which these three ownership structures (block, director and institutional shareholdings) can have a moderating effect on the PPS. For example, greater monitoring that is often associated with block ownership can serve

as a substitute for a good incentive alignment mechanism that is able to effectively restrain executive pay and improve the PPS (Cheng & Firth, 2005; Ding et al., 2015; Ntim, 2013b), although concentrated ownership can also have costs implications for minority shareholders, including entrenchment and extraction of private benefits. Block shareholders can, for instance, connive with executives to engage in fraudulent activities, such as 'tunnelling', or expropriate firm assets in the form of high pay at the expense of minority shareholders (Conyon & He, 2011, 2012), which can impact negatively on the PPS. This is more likely to be a problem in SA where corporate ownership has historically been dominated by a small set of very large companies often built around highly complicated cross-holdings and tall pyramid (Ntim et al., 2012a, b). Similarly and due to their larger shareholdings, institutional shareholders can exert greater influence on corporate decisions, including executive pay (Sapp, 2008). Institutional shareholders also enjoy knowledge and information advantages over individual or less-informed investors, which can facilitate greater activism and managerial monitoring that can impact positively on the PPS (Hartzell and Starks, 2003; Ding et al., 2015). Also, the alignment of interest that is often associated with director ownership can have a positive effect on the PPS (Morck et al., 1988; Li & Srinivasan, 2011; Ntim, 2012a).

Empirically, the evidence is largely in line with the prediction that the presence of a large shareholder enhances managerial monitoring, reduces executive pay and improves the PPS (Kang & Shivdasani, 1995; Lin, 2005; Mehran, 1995; Ozkan, 2011). For example, Core et al. (1999) report that block ownership reduces the likelihood of CEO entrenchment, which impacts positively on the PPS for a sample of 205 US listed firms. Similarly, Bertrand and Mullainathan (2001), Sapp (2008), and Conyon and He (2011), respectively, report that US, Canadian and Chinese firms with greater block ownership pay their CEOs significantly less, compared to those with smaller block ownership. With respect to institutional ownership, Hartzell and Starks (2003), Sapp (2008), and Ozkan (2011), respectively, report that US, Canadian and UK companies with greater institutional ownership paid their CEOs significantly less than those with smaller institutional ownership. In contrast, the results of Zheng (2010) suggest that institutional ownership has no impact on CEO pay in a sample of US firms. However, and as previously discussed, King II urges institutional shareholders to play an active role in setting executive pay in SA firms, including being directly consulted for their views. A major implication of this is that institutional shareholders in SA can exert their influence on executive pay not only through voting, but also with a direct voice (i.e., have "say-on-pay") on the *RCOM*/board. Further, Li and Srinivasan (2011) and Sanchez-Marin and Baixauli-

Soler (2013) report that director ownership impacts positively on the PPS. Thus, and given the inherent pervasiveness of block, institutional and director shareholdings in SA (Ntim et al., 2012a, b), our third hypothesis is that:

H3: Ownership structure has a moderating effect on the PPS.

The effect of board structure (effectiveness) on the PPS

Corporate boards perform important functions, including monitoring, disciplining and compensating management to align their interests with those of shareholders (Beiner et al., 2006; Finkelstein et al., 2009), but their effectiveness is usually influenced by the way they are structured (e.g., size, composition, committees and meetings) (Cornett et al., 2009; Sanchez et al., 2010; Ntim, 2013a). Hence and in this study, we assess the moderating effect of these five board structures (board size, board meetings, proportion of NEDs, independent nomination committee, and independent remuneration committee) on the PPS. For instance, increased communication and coordination problems associated with larger boards limits their monitoring effectiveness, and this may be manifested in the form of excessive executive pay (Core et al., 1999; Ozkan, 2011). By contrast, increased communication and coordination problems associated with larger boards limits their monitoring effectiveness, and this may be manifested in the form of excessive executive pay (Core et al., 1999; Ozkan, 2011). Further, as boards become smaller, their ability to hold frank discussions and engage in more effective managerial monitoring improves and, therefore, smaller boards can be expected to enhance the PPS. Similarly, non-executive directors (NEDs) have more incentives to effectively monitor CEO pay, not only because they are less subject to CEO influence, but also have reputations to protect in the labour market (Core et al., 1999; Conyon and He, 2011). Others suggest that executive pay decisions should be delegated to *NEDs* because they are better able to make unbiased judgments about the performance of the CEO and, in turn, decisions regarding firing, hiring and pay (Ozkan, 2011). Also, Cornett et al. (2009), and Ntim and Osei (2011) suggest that increased managerial monitoring associated with regular board meetings can impact positively on the PPS. Further, in most listed firms, the independent remuneration and nomination committees are the primary mechanism for monitoring and setting executive pay (Conyon, 1997; Bebchuk et al., 2002). Thus, their absence can exacerbate agency conflicts by giving CEOs more power to award themselves pay rises, which are not congruent with shareholder interests (Benito and Conyon, 1999; DeVaro & Fung, 2014). Thus, and in theory, establishing

these committees can improve the PPS by reducing the influence that CEOs have in setting their own pay. However, and to the extent that powerful CEOs can handpick members of the board and *RCOM*, their monitoring effectiveness will depend on the independence of the *RCOM's* members from the CEO (Chhaochharia & Grinstein, 2009). As director independence depends heavily on the nominating authority (Vefeas, 1999), in companies that do not have independent nomination committee (*NCOM*), whereby director selection is dominated by their CEOs, the effectiveness of the *RCOM* in setting optimal CEO pay may be seriously undermined (Bebchuk & Fried, 2003; Conyon & He, 2011, 2012). Therefore, the presence of an independent *RCOM* largely depends on the presence of an independent *NCOM*, and consequently, the ability of the *RCOM* to effectively monitor CEO pay.

The empirical evidence largely suggests that effective board structures can have positive effect on the PPS (Cornett et al., 2009; Li & Srinivasan, 2011; Wowak et al., 2011; Sanchez et al., 2010). For example, Core et al. (1999), Sapp (2008), Ozkan (2011), and Conyon and He (2011), respectively, report that larger US, UK, Canadian and Chinese boards pay their CEOs higher than their smaller counterparts, and thus larger boards tend to have a negative effect on the PPS. The empirical evidence relating to NEDs is, however, mixed. Core et al. (1999), Li and Srinivasan (2011), Ozkan (2011), and Conyon and He (2011), respectively, report that US, UK and Chinese companies with more NEDs paid their CEOs more than those with smaller NEDs; leading to a lower PPS, while the findings of Cheng and Firth (2005), Lin (2005), and Chhaochharia and Grinstein (2009) indicate that larger outside board representation leads to a reduction in the pay of Hong Kong, Taiwanese and US CEOs; resulting in a higher PPS, respectively. Other studies (Mehran, 1995; Fernandes, 2008; Sapp, 2008) report that the presence of *NEDs* has no impact on CEO pay and the PPS. Also, Cornett et al. (2009) report that the number of board meetings has a positive effect on the PSS. Finally, the empirical evidence is generally consistent with these theoretical predictions relating to the effect of nomination and remuneration committees on the PPS (Benito & Conyon 1999; Sun & Cahan, 2009). For example, and consistent with Vefeas (1999), Chhaochharia and Grinstein (2009) document a positive link between nomination committees and the quality of new director appointments in the US. Similarly, Conyon (1997), Sapp (2008) and Conyon and He (2011, 2012) find that the level of CEO pay is significantly lower and the PPS significantly higher in companies with independent remuneration committees. In the SA case, King II encourages boards to have a majority of *NEDs*, suggesting that increasing the number of *NEDs* is viewed as a positive CG development. Similarly, King II does not

specify the exact number of directors that should form a board, but sets out a general principle that every board must consider whether its size makes it effective, indicating that it considers board size as an important CG mechanism. Further, King II requires the *RCOM* and *NCOM* to be established, consisting of independent *NEDs*, and including the chairpersons. This suggests that King II considers the two committees as good governance mechanisms. Moreover, King II suggests that regular board meetings is a mark of conscientious board, and as such recommends that boards should meet as frequently as possible, at least four times in a year. Put together, it can be argued that King II expects these board structures (board size, meetings, NEDs, *NCOM* and *RCOM*) to impact on the PPS, and therefore our final hypothesis is that:

H4: Board structure has a moderating effect on the PSS.

Research design

Data considerations

As summarised in Table 2, due to capital structure and regulatory reasons, we excluded 111 financials and utilities from the total sample of 407, and thus our sample is drawn from all 291 non-financial firms listed on the JSE Ltd as at 31/12/2012. The data used in this study are derived from two separate sources. The first is the total executive pay and CG data extracted from company annual reports downloaded from the *Perfect Information Database*. Unlike most prior studies that have focused purely on CEO pay (Jensen & Murphy, 1990; Kale et al., 2014), we collect data on the total pay of both the CEO and all other executive directors, thereby permitting us to explicitly test both the primary and secondary agency problems. The second source of the financial data is *DataStream*. Firms included in our final sample met two criteria: availability of a firm's executive pay data for all years from 2003 to 2012 and the accessibility to a company's financial and CG data from 2002 to 2011, and thereby permitting us to estimate ex-ante PPS. These criteria were set for a number of reasons. First, the labour intensive nature of the manual collection of the executive pay and CG data introduced sample size limitations and, as such, we limited the sample to firms where consecutive year data were available. Second, and following previous studies (Core et al., 1999; Jimenez-Angueira & Stuart, 2015; Elghuweel et al., 2016; Elmagrhi et al., 2016; Ntim et al., 2016), our criteria ensured that the conditions for a balanced panel analysis were satisfied with its well documented advantages. Third, as suggested by Wowak et al. (2011) and Ntim (2016), examination of a 10-year data with both cross-sectional and time series properties may be useful in ascertaining whether the

observed cross-sectional link between executive pay and performance is robust over time. Finally, the sample begins in 2002 because there is limited data coverage in the *Perfect Information Database/DataStream* on SA companies prior to that year, and crucially because King II came into effect in 2002. The sample ends in 2012 because it is the most recent year for which data is available. As Table 2 shows (after excluding 122 firms with no or some years data missing), the final sample consists of a total of 169 firms over 10 firm-years (i.e., 1,690 observations) from eight industries that met the data criteria for our analysis.

Insert Table 2 about here

Variables: Pay, performance, CEO/CG characteristics, interaction and control variables

We classify our variables into seven main types and full definitions of all the variables used are presented in Table 3. First, and following a well-established line of research (Murphy, 1985; Jensen & Murphy, 1990; Conyon & He, 2011), total pay of all executives (*TPAY*) and the CEO (*CPAY*) are our main dependent variables. Second, our main performance proxy is the widely used total share return (*TSR*), but as a robustness check, we also employ return on assets (*ROA*) and Tobin's Q (*Q*) as alternative accounting and market-based performance measures, respectively. The third group consists of CEO power proxies, including CEO age (*CEOA*), CEO duality (*CEOD*), CEO ownership (*CEOO*), CEO power (*CEOP*), CEO reputation (*CEOR*), CEO tenure (*CEOT*) and founding CEO (*FCEO*). The fourth group consists of board structure variables, including board size (*BSIZ*), percentage of independent non-executive directors (*NEDs*), number of board meetings (*NBM*) and the presence of independent remuneration (*RCOM*) and nomination (*NCOM*) committees, whilst the fifth group is made up ownership structure variables, including block ownership (*BOWN*), director ownership (*DOWN*) and institutional ownership (*IOWN*). Sixth, and to test for the moderating effect of CEO power/CG features on the PPS, we create an interaction variable between each of our monitoring CEO power/CG structure and performance (e.g., *P*CEOA*, *P*BOWN*, and *P*BSIZ*). Finally, and to attenuate potential omitted variables bias (Petersen, 2009), we include an extensive number of control variables (see Table 3).

Insert Table 3 about here

Empirical analyses and discussion

Descriptive statistics

Table 4 contains descriptive statistics relating to the executive pay, performance, CEO, CG and control variables, and are reported in Groups A, B, C, D and E, respectively. The table suggests wide variation in the distribution of *TPAY* and *CPAY* values. *CPAY*, for example, ranges from a minimum of R0.06 million to a maximum of R16.86 million with a mean of R2.89 million. Noticeably, and despite King II's suggestion that equity-based pay should form a larger part of executives' pay in order to align their interests with those of shareholders, cash pay continue to form a substantial portion of total executive pay in SA. For instance, the average total equity-based pay of all executives (*TPAY EQUITY*) of R1.66 million is only about 13% of the average total pay (*TPAY*) of R12.92 million.

Insert Table 4 about here

Similarly the values of the performance, CEO, CG and control variables generally indicate a wide spread. For example, and similar to the findings of Mehran (1995), *TSR* ranges from -48% to 236% with an average of 28%, indicating that most of the sampled firms are profitable. The median *CEOA* is 53, ranging from 34 to 81 years, whilst the average *CEOT* is 7, ranging from 3 months to 42 years. About 19% of our CEOs are founders, whilst about 23% doubles-up as CEOs and chairpersons. The average CEO is powerful (*CEOP*), with his/her pay accounting for 48% of all the other executives put together. These findings are roughly comparable with those reported by Cornett et al. (2009), Li and Srinivasan (2011) and Wowak et al. (2011) for US CEOs. The median *BSIZ* of 10 is lower than a corresponding number of 13 reported by Core et al. (1999) for a sample of US firms, while the average of 57% *NEDs* is in line with the 62% reported by Lee et al. (2008) for a sample of US companies. The mean *IOWN* of 74% is consistent with the 63% reported by Zheng (2010) for a sample of US firms, whereas the average *BOWN* of 62% is considerably higher than the 20% reported by Ozkan (2011) for a sample of UK firms. Strikingly, only 14% of our sampled firms have *RCOM*, far lower than the 66% reported by Brown and Caylor (2009) for a sample of US companies.

Insert Table 5 about here

Table 5 reports the correlation matrix for the variables to test for multicollinearity. However, as a robustness check, we present both the Pearson's parametric and Spearman's non-parametric coefficients and, observably, the direction and magnitude of both coefficients are essentially the same and thus, indicating that any remaining non-normalities may not statistically harmful. Noticeably, apart from the

expected high correlation between *TPAY* and *CPAY*, the bivariate correlations among all the other variables are largely small and thus, suggesting that any remaining multicollinearities may not be statistically harmful. Observably, the *TSR*, *CEOP*, *CEOR*, *CEOT*, *FCEO*, *BOWN* and *BSIZ* are positively associated with *TPAY*, whilst *DOWN*, *IOWN*, *NCOM*, *NEDs* and *RCOM* are negatively related to *TPAY*. Additionally, there exist significant associations among the *TPAY*, *CPAY*, *TSR*, *CEO*, *CG* and the control variables used.

Multivariate regression analyses

Estimating the PPS

We conduct multiple regression analyses in order to test our hypotheses. Fixed-effects models have the advantage of capturing unobservable firm-level differences, such as firm complexity, managerial quality and corporate culture (Conyon & He, 2011). Following prior research (Wowak et al., 2011; Li & Srinivasan, 2011), we adopt a lagged structure with median (in order to account for the observable large pay differentials) fixed-effects to estimate ex-ante PPS using Jensen and Murphy (1990) style first difference approach. Thus, we begin our analyses with a basic fixed-effects model specified as follows:

$$TPAY_{it} = \alpha_0 + \beta_1 TSR_{it-1} + \sum_{i=1}^{10} \beta_i CONTROLS_{it-1} + \delta_{it-1} + \varepsilon_{it-1} \quad (1)$$

where: *TPAY* is the main dependent variable; *TSR* is the main independent variable; *CONTROLS* refers to the control variables included and δ refers to the firm-specific fixed-effects, consisting of a vector of the mean-differences of all time variant variables.

Table 6 contains a fixed-effects regression of the PPS, with results reported for three models for both all executive directors' pay and CEO pay consisting of cash, non-cash and total as the dependent variables. First, the main aim of designing managerial incentives contracts is to align the interests of owners and managers. However, such contracts, could themselves, create primary agency problems, whereby powerful CEOs may use their influence to expropriate corporate resources. To investigate this first-tier agency conflict that exists between CEOs and shareholders, we examine the sensitivity of *TSR* to *CPAY*. The coefficient of *TSR* on *CPAY* in Model VI of Table 6 is positive and statistically significant. However, and consistent with prior studies the PPS is relatively small at 0.095, and thereby provides support for *H1a* that the PPS for CEOs is positive, but relatively small. For example, Conyon (1997) and Ozkan (2011), respectively, report share returns and CEO pay sensitivity of 0.061 and 0.095 for samples of UK firms.

Similarly, Hubbard and Palia (1995), Hartzell and Starks (2003), Cornett et al. (2009), and Li and Srinivasan (2011), respectively, report a PPS of 0.099, 0.093, 0.098 and 0.021 for samples of US firms. Our evidence also seems to provide support for the MPH, which suggests that in poorly-governed firms, powerful CEOs tend to use their influence to design suboptimal incentive contracts that facilitates rent extraction, leading to small PPS.

Insert Table 6 about here.

Secondly, a second-tier agency conflict arises, whereby a suboptimal CEO pay package is approved by directors for a dominant CEO in return for some form of reciprocity from the CEO. To examine this secondary agency problem that occurs between directors and shareholders, we investigate the link between *TPAY* and *TSR* by replacing *CPAY* with *TPAY* in equation (1). The coefficient of *TSR* on *TPAY* in Model III of Table 6 is positive and statistically significant, but similarly small at 0.063, and thereby providing new support for *H1b*. The financial implication of this evidence is that directors tend to reward powerful CEOs with overly generous pay packages in exchange for favourable director incentive terms from the CEO (Core et al., 2003; Morse et al., 2011). This can result in a culture of reciprocity in extracting corporate resources at the expense of shareholders, and thereby equally leading to relatively small PPS. This conflict can particularly be exacerbated in SA where, under the King II proposals, the *RCOM* is required to seek the opinion of the CEO when deciding the pay of other executives. As a more direct and comparative test of the first- second-tier agency problems, we compare and test (see Table 7) the statistical significance of the estimated PPS coefficients between CEOs and all executive directors reported in Tables 6 and 8 to 13. As contained in Table 7, with the exception of the PPS coefficient reported in Panel *D*, step 1, the difference between CEOs and executives of all our estimates are positive and statistically significant, suggesting that the PPS for CEOs is almost always significantly higher than that of all executive directors. This offers additional support for *H1b*, as well as makes a new contribution to the literature by indicating that in a context of concentrated ownership and weak board structures; the second-tier (monitoring power and opportunism of other directors) agency conflict is stronger than the first-tier (CEO power and opportunism) agency problem.

Insert Table 7 about here.

Third, our evidence so far suggests a positive, but relatively small PPS. Our total executive pay proxies are, however, made up of cash and equity-based pay. Therefore, to examine which component contributes

most to the PPS, we re-run equation (1) by iteratively replacing *TPAY* and *CPAY* with their cash and non-cash alternatives, respectively. The respective coefficients of *TSR* on *Cash* and *Non-cash*-based pay in Models I and II for *TPAY*, as well as those in Models IV and V for the *CPAY* in Table 6 are all positive and statistically significant. Noticeably, and on average, the PPS appears stronger for equity-based than for cash-based pay. This provides support for the recommendations of King II and the findings of previous studies (Jensen & Murphy, 1990; Main et al., 1996; Ozkan, 2011), which report a higher PPS for CEO non-cash pay than CEO cash pay. The financial implication of this finding is that the structure rather than the level of pay appears to be more effective in influencing the PPS.

Fourth, and on comparative basis, the results in Table 6 also suggest that irrespective of the pay proxy used, the association between *TSR* and *CPAY* appears to be stronger than that between *TSR* and *TPAY*. This offers empirical support for the findings of Mehran (1995) and Sapp (2008) for samples of US and Canadian companies, respectively. One explanation is that CEOs perform larger and strategic roles with a higher possibility of being dismissed following poor performance than lower placed executives (Kang & Shivdasani, 1995; Dong, 2014; Guo et al., 2015), and consequently CEO pay is expected to be higher and more tied to performance to compensate for the associated extra responsibilities and risks.

The moderating effect of CEO power and CG structure on the PPS

Our evidence so far suggests a positive, but relatively small PPS, which appears to provide support for the MPH. Central to the MPH, is the assumption that CEO commitment/CG is weak, which results in poor managerial monitoring and suboptimal incentive contracts. However, in better-governed firms with more committed CEOs, closer managerial monitoring can improve the PPS even if executive incentive contracts are somehow suboptimal. This suggests a complex modelling of the PPS, which takes into account the joint effect of both incentive alignment (executive pay) and monitoring (CEO power/CG structure) mechanisms on the PPS. Therefore, and in this sub-section, we distinctively investigate whether CEO power/CG structure can moderate the PPS with a fixed-effects regression model specified as follows:

$$TPAY_{it} = \alpha_0 + \beta_1 TSR_{it-1} + \sum_{j=1}^{7} \beta_j CEO_{it-1} + \sum_{k=1}^{7} \beta_k INT_{it-1} + \sum_{l=1}^{10} \beta_l CONTROLS_{it-1} + \delta_{it-1} + \varepsilon_{it-1} \quad (2)$$

where CG refers to the CEO power proxies, including *CEOA*, *CEOD*, *CEOO*, *CEOP*, *CEOR*, *CEOT*, *FCEO* and *INT* refers to their respective interaction variables, namely *P*CEOA*, *P*CEOD*, *P*CEOO*,

*P*CEOP*, *P*CEOR*, *P*CEOT* and *P*FCEO*. Everything else remains the same as defined in equation (1). We also re-estimate equation (2) by replacing the CEO power proxies with their CG counterparts.

Thus, Tables 8 and 9 contain fixed-effects regression results examining the moderating effect of CEO power and CG structure on the PPS, respectively. Models I to III in both tables report results relating to *TPAY* for the *Q*, *ROA* and *TSR* performance proxies, respectively, whilst Models IV to VI do similarly for the *CPAY* alternative. First, and consistent with the findings in Models III and VI in Table 6, the coefficients of the *TSR* on *TPAY* and *CPAY* in Models III and VI in both tables are, respectively, positive and statistically significant. However, and most importantly, it is clearly observable that, irrespective of the executive pay measure used, the PPSs have considerably improved. This implies that CEO power and CG qualities appear to significantly moderate the PPS, a result which also seem to provide support for the OCT. For example, the PPS between *TSR* and *CPAY* has increased from 0.095 in Model VI in Table 6 to 0.180 (0.155) in Model VI of Table 8 (9). While these statistically significant differences (p-value <.01) are not substantially large compared to those reported by other studies (Buck et al., 2008; Conyon & He, 2011), it at least suggests that allowing for the existence of joint interactions among *TPAY, CPAY, TSR,* CEO power and CG mechanisms results in an improvement in the PPS. Also, and on comparative basis, it is apparent from Table 8 (9) that the increase in the PPS is higher for *CPAY* than for *TPAY*. This is again consistent with our previous explanation that emphasised the strategic nature of the CEO role.

Insert Table 8 about here.

Insert Table 9 about here

Second, and with specific reference to the interaction variables, the findings reported in Table 8(9) generally provide evidence of a moderating effect of CEO power (CG structure) on the PPS, which is largely consistent with the predictions of the OCT, as well as our hypotheses. Specifically, the coefficients of *P*CEOC*, *P*CEOO*, *P*CEOR* and *P*FCEO* on *TPAY* or *CPAY* in Models III and VI of Table 8 are statistically significant, providing support for *H*2. Similarly, the statistically significant and positive effect of *P*BOWN* and *P*DOWN* on *TPAY* or *CPAY* in Models III and VI of Table 9 provides support for *H3*, whereas the statistically significant effect of *P*BSIZ*, *P*NCOM* and *P*RCOM* on *TPAY* or *CPAY* in Models III and VI of Table 9 provides support for *H4*. Observably, our evidence contributes to a small, but gradually increasing number of international studies that suggest that board, CEO power and ownership

structures can have a moderating effect on the PPS (Cornett et al., 2009; Finkelstein et al., 2009; Li & Srinivasan, 2011; Wowak et al., 2011; Sanchez-Marin & Baixauli-Soler, 2014).

Additional analyses

We conduct a number of additional analyses to further examine the robustness of our results. First, we check the robustness of our results by re-regressing equation (2) using *Q* and *ROA* as alternative performance proxies to the *TSR*. The results presented in Models I and II relating to *TPAY* based on the *Q* and *ROA*, respectively, and similarly in Models IV and V relating to *CPAY* in Tables 8 and 9 are qualitatively the same as those of the *TSR* in Models III and VI in the same tables, suggesting that our findings are robust to these alternative performance proxies.

Second, and so far we have estimated the PPS by taking into consideration the predictors, moderators and instruments simultaneously. One limitation of this approach is that it makes it difficult to assess the contributions of each category of variables. Therefore, and to ascertain the contributions of each category of variables to the estimated PPS, we employ a two-step multilevel[1] (hierarchical) regression approach. Specifically, at the first step, we regress the instruments and predictors (governance and instrumented variables) on the compensation; and at the second step, we include the moderators (moderating variables) as additional explanatory variables. The results of our hierarchical (multilevel) regressions reported in Tables 10 and 11, respectively, for CEO power and CG structure suggest statistically significant and positive effect of *PRE_TSR* on *TPAY* and *CPAY*, respectively, thereby implying that our findings are fairly insensitive to estimating a hierarchical regression. However, the findings show that our moderating variables have some explanatory power, accounting roughly for between 8% and 12% (ΔR^2) of the variations in the estimated PPS.

Insert Table 10 about here

Insert Table 11 about here

Third, our sample period extends over the 2007/2008 global financial crisis. Thus, to ascertain whether executive pay differs over the period, we split the sample into two: pre- (2002 to 2006); and post- (2007 to 2012) 2007 financial crisis periods, and re-estimate equation (1), by including an additional dummy variable (*D_FINCRISIS)*, which takes the value of 1 if the financial year is post-2007 (2007 to 2012) and 0

[1]We will like to thank an anonymous reviewer for this suggestion.

if the financial year is pre-2007 (2002 to 2006). Our full results, (which for brevity not reported here, but available on request), suggest a significant and positive coefficient (0.16) on the *D_FINCRISIS*. The economic interpretation of this evidence is that executive pay has increased in the pre-2007 period by about 16% (8%) in nominal (real – adjusted for 5% SA annual inflation rate) terms.

Insert Table 12 about here.

Insert Table 13 about here

Finally, and to address causality and/or endogeneity problems that may be caused by potential omitted variables bias, we use the widely applied two-stage least squares (*2SLS*) methodology. However, to make sure that the *2SLS* technique is appropriate, and following past studies (Beiner et al., 2006; Larcker & Rusticus, 2010), we first conduct the Durbin-Wu-Hausman exogeneity test to test for the existence of an endogenous association between *TSR* and *TPAY* or *CPAY*. The null hypothesis of no endogeneity is rejected at the 1% level when the test is applied to equation (2), and we therefore, conclude that the *2SLS* technique is appropriate and that our fixed-effects results may be misleading and as such, requiring further investigation that follows.

The findings of several past studies (Beiner et al., 2006; Brown and Caylor, 2009) suggest that tge CEO power and CG structure variables do affect performance, and as such, in the first-stage, we assume that *TSR* will be determined by 7 CEO power and 8 CG structure mechanisms, as well as the 10 control variables. Therefore, the first-stage model to be estimated is specified as:

$$TSR_{it} = \alpha_0 + \sum_{j=1}^{15} \beta_j CG\_CEO_{it} + \sum_{k=1}^{10} \beta_k CONTROLS_{it\square} + \varepsilon_{it} \quad (3)$$

Consistent with our predictions, the results, (which for brevity are not fully reported here, but available upon request), suggest statistically significant effect of the CEO power, CG structure and control variables on the *TSR*. Therefore, we re-regress equation (2) specified as:

$$TPAY_{it} = \alpha_0 + \hat{\beta}_1 PRE\_TSR_{it} + \sum_{j=1}^{7} \beta_j CEO_{it} + \sum_{k=1}^{7} \beta_k INT_{it} + \sum_{l=1}^{10} \beta_l CONTROLS_{it} + \delta_{it} + \varepsilon_{it} \quad (4)$$

where everything remains the same as defined in equation (2) except that we use the predicted *TSR* (*PRE_TSR*) from equation (3) as instrument for *TSR*. The *2SLS* results reported in Models III and VI of Tables 12 and 13, respectively, for CEO power and CG structure suggest statistically significant and positive effect of *PRE_TSR* on *TPAY* and *CPAY,* respectively, thereby implying that our findings are fairly

robust to potential causality and/or endogeneity problems that may arise from omitted variables. Additionally, the *2SLS* results based on *Q* and *ROA* performance alternatives contained in Tables 12 and 13 remain positive and statistically significant, suggesting further that our findings are not significantly sensitive to potential causality and/or endogeneity problems.

Summary and conclusion

This study examines the crucial question of whether chief executive officer (CEO) power and governance (CG) mechanisms can moderate the pay-for-performance sensitivity (PPS) using a sample of 169 South African (SA) listed firms from 2002 to 2012. This coincides with a period during which the SA authorities introduced CG reforms that incorporated the expectation that executive pay will be strongly linked to performance. This permits us to distinctively examine the joint effects of incentive alignment (pay) and monitoring (CEO power and CG structure) mechanisms on the PPS using data on both total cash and equity-based CEO pay, as well as that of all executive directors. Our study, therefore, extends, as well as makes a number of new contributions to the extant theoretical and empirical literature.

First, previous studies examining direct links between executive pay and performance have generally reported a positive, but relatively small PPS (Gomez-Mejia & Wiseman, 1997; Murphy, 1999; Tosi et al., 2000; van Essen et al., 2015). This appears to provide support for the managerial power hypothesis (MPH), which suggests that powerful executives use their influence to extract excessive rent through suboptimal incentive contracts. However, optimal contracting theory (OCT) predicts that in firms with strong governance and committed CEOs, greater monitoring can still improve the PPS even if executive incentive contracts are somehow suboptimal (Bertrand & Mullainathan, 2001; Kuo et al., 2014). Prior studies, however, have seldom investigated the joint effects of incentive alignment and monitoring mechanisms on the PPS (Cornett et al., 2009; Finkelstein et al., 2009; Li & Srinivasan, 2011; Wowak et al., 2011). In contrast, this paper distinctively investigates the more complex questions of why and how CEO and CG qualities can possibly moderate the PPS. Consistent with our predictions, the findings contribute to the literature by evidencing a positive, but relatively small PPS, and thereby providing support for the MPH. However, and in line with the predictions of the OCT, we also find that the PPS improves in firms with committed CEOs and strong governance. Specifically, we find that the PPS is higher in firms with more reputable, founding and shareholding CEOs, higher ownership by directors and institutions, and

independent nomination and remuneration committees, but lower in firms with larger boards, more powerful, and long tenured CEOs.

Second, within the MPH, two distinct agency conflicts emerge when designing executive incentive contracts: primary and secondary (Bebchuk et al., 2002; Dong, 2014). The first-tier agency problem relates to the power that a CEO may have over the board in setting its own pay, which can facilitate excessive rent skimming through a suboptimal CEO incentive contract (Bebchuk & Fried, 2003). The secondary agency problem concerns the apparent conflict of interests faced by directors in deciding both their own pay and that of the CEO, which can create a culture of mutual-favour, whereby an overly generous CEO incentive contract is approved by the board in return for favourable pay packages for the directors, and thereby equally leading to excessive rent extraction (Morse et al., 2011; Ding et al., 2015). Whilst the primary agency conflict has been extensively examined (Murphy, 1999; Frydman & Jenter, 2010), the impact of the second-tier agency conflict on the PPS has rarely been investigated (Core et al., 2003). Our findings contribute to the literature by showing that the PPS for both the CEO and all executive directors is generally small, but comparatively strong in firms with committed CEOs and strong governance. In particular, our results make a new contribution to the literature by showing that in a context of concentrated ownership and weak board structures; the first-tier agency conflict (CEO power and self-serving) is weaker than the second-tier agency problem (monitoring by other executive directors and self-interest).

Apart from our new empirical contributions, our findings also offer new insights and extensions to the OCT and MPH theories. Prior studies have often presented these two theories as competitors and as such, simply tested them in isolation; thereby failing to appreciate and identify their interconnectedness. Our findings show that whilst suboptimal pay contracts can result from powerful CEOs dominating pay setting institutions (e.g., the board and remuneration committee) and processes (as suggested by MPH), such agency conflicts can be reduced by contemporaneously strengthening CG structures (as suggested by OCT), and thereby equally leading to improved PPS. Methodologically, our findings imply that future researchers will need to commit to a more complex and dynamic instead of the traditional simple modelling of the PPS that is able to simultaneously incorporate both incentive alignment (pay) and monitoring (CG) mechanisms if their evidence is to be robust.

Third, our findings also have important policy, practitioner, regulatory and broader societal implications, especially for companies and authorities in other developing countries that are contemplating

or currently pursuing CG and executive pay policy reforms. A key implication of our evidence is that for greater effectiveness, incentive alignment (executive pay) and monitoring (CG) policy reforms should be jointly pursued. For example, in order to obtain maximum impact, a recommendation for equity-based pay to constitute a substantial portion of total executive pay in order to align executive interests with those of shareholders should be accompanied by equivalent CG reforms that seek to: (i) strengthen board independence by encouraging relatively smaller boards that are supported by properly constituted and functioning independent sub-committees, such as nomination and remuneration committees; (ii) promote greater institutional shareholding and activism; and (iii) stimulate ownership by directors. Additionally, our evidence implies that efforts by policy-makers, practitioners, regulators and broader society at improving good governance in general, and the PPS in particular, should not only focus on reducing concentration of power (e.g., discouraging entrenchment through long tenure) and increasing financial interests (e.g., encouraging ownership) among CEOs/senior executives, but also encouraging strong non-financial/emotional (e.g., founder status and public reputation for good governance/performance) attachments to their firms. Methodologically, our evidence implies that scholars seeking to robustly model the PPS, should not only consider traditional measures (e.g., performance and size), but also non-traditional factors (e.g., CEO power, board and ownership structures) within a joint estimation framework.

Finally, whilst our evidence is important and robust, some caveats are deemed appropriate. Due to data limitations, the analysis is restricted to a limited number of internal CG mechanisms and, as data coverage improves, future studies may need to consider external CG mechanisms, such as data on the market for corporate control, in estimating the PPS. Like all archival studies of this nature, our variables employed as measures for performance, CEO power and CG structures may or may not represent how boards, executives and shareholders operate in practice. For example, past studies have shown that it is the role (e.g., active or passive) rather than the extent of institutional ownership per se that can impact positively on governance and pay structures (Gillan & Starks, 2003; Hartzell & Starks, 2003; Almazan et al., 2005). However, due to data limitations, we have not been able to divide our institutional ownership measure into active, passive, long-term and short-term investors and thus, future studies may improve on our findings by investigating their effect on the PPS. As we focus only on SA, generalisability of our findings are arguably limited and hence, future studies may be able to offer new insights by applying our framework to a cross-country data, especially from developing countries in Africa, America, Asia and

Europe. Methodologically, more nuanced insights may be gained by future scholars by conducting in-depth interviews with boards, executives and owners relating to CG, pay and the PPS.

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Table 1. A summary of director remuneration policy reforms contained in the King I and II reports

Remuneration provision	1994 King Report (King I)	2002 King Report (King II)
Philosophy of remuneration:		
Remuneration policy	Not specified	Required to be stated
Rationale/basis	Not specified	Required to be stated
Remuneration committee:		
Committee	Required to be established	Required to be established
Composition	Not specified	Only independent directors
Chairperson	Not specified	Independent director
Charter/terms of reference	Not specified	Required to be stated
Performance evaluation	Not specified	On an annual basis
Nomination committee:		
Committee	Not specified	Required to be established
Composition	Not specified	Majority independent dtors.
Chairperson	Not specified	Independent director
Charter/terms of reference	Not specified	Required to be stated
Performance evaluation	Not specified	On an annual basis
Remuneration structure:		
Cash-based	Not specified	Required to be specified
Equity-based	Not specified	Required to be specified
Proportion	Not specified	Equity-based should be greater
Remuneration approval:		
Remuneration committee	Recommend remuneration level	Recommend remuneration level
Board	Required to approve	Required to approve
Shareholders/AGM	Not specified	Has final approving authority
Shareholder activism:		
Encouragement	Not specified	Explicitly encouraged
Questioning	Not specified	Questions to the chair
Shareholder consultation	Not specified	Major institutional shareholders
Remuneration disclosure:		
Executive/CEO	Not specified	On an individual basis
Non-executive	Note specified	On an individual basis
Independent	Not specified	On an individual basis
Frequency	Not specified	On an annual basis
Medium	Not specified	Annual report
Details/items	Not specified	All: cash and equity-based
Committee membership	Not specified	On an individual basis
Meetings/attendance	Not specified	On an individual basis
Compliance or regulation	Voluntary or self-regulation	Voluntary or self-regulation

Notes: Compiled from the 1994 (King I) and 2002 (King II) South African Corporate Governance Reports. It should also be noted that King II was revised and replaced with King III in March 2010, albeit with limited implications for CG and executive remuneration. The main difference between the two is that integrated sustainability reporting has been made mandatory (including distinctively requiring the sustainability report to be externally/independently audited) in King III instead being voluntary in King II.

Table 2. Summary of sampling procedure

Industrial composition of the total non-financial firms listed on the JSE available to be sampled as at 31/12/2012		*No. in each industry*	*Percentage of sample*
Industrials		81	27.8
Basic materials		67	23.0
Consumer services		62	21.3
Consumer goods		36	12.4
Technology		31	10.7
Health care		7	2.4
Telecommunications		4	1.4
Oil and gas		3	1.0
Total firms available to be sampled		*291*	*100.0*
Less: Firms with no year's data available	28		
Firms with some years' data missing	94	122	41.9
Total sampled firms with full data included in study		*169*	*58.1*
Industrial composition of sampled firms with full data		*No. in each industry*	*Percentage of sample*
Industrials		51	30.2
Consumer services		35	20.7
Basic materials		33	19.5
Consumer goods		24	14.2
Technology		19	11.2
Health care		3	1.8
Telecommunications		3	1.8
Oil and gas		1	0.6
Total sampled firms with full data included in study		*169*	*100.0*

Source: JSE Ltd.

Table 3. Summary of variables

Total executive pay (dependent) variables	
CPAY	Natural log of cash (base salary, performance bonus, pension contribution and others) and non-cash/equity (granted shares, exercised options and any other long-term incentive plans) based pay of the Chief Executive Officer (CEO).
TPAY	Natural log of total cash (salary, bonus, pension contribution and others) and non-cash/equity (granted shares, exercised options and any other long term incentive plans) based pay of all executive directors (top management team) scaled by the total number of executive directors.
Corporate performance (independent) variables	
Q	Ratio of total assets minus book value of equity plus market value of equity to total assets.
ROA	Percentage of operating profit to total assets.
TSR	Natural log of continuously compounded total share return made up of capital gain and dividend yield.
Corporate governance variables	
BOWN	Percentage of common shares held by shareholders with at least 5% of the total company shareholdings.
BSIZ	Natural log of the total number of directors on the board of a company.
IOWN	Percentage of common shares held by institutional shareholders.
DOWN	Percentage of common shares held by directors.
NBM	Number of board meetings in a year.
NCOM	1, if a firm has a nomination committee consisting of a majority of independent non-executive directors as recommended by King II, 0 otherwise.
NEDs	Percentage of non-executive directors to total number of directors on a board.
RCOM	1, if a firm has a remuneration committee consisting entirely of independent non-executive directors as recommended by King II, 0 otherwise.
CEO characteristics variables	
CEOA	CEO age: The age of a firm's CEO.
CEOD	1, if the CEO is also the chairperson of the board of directors of a firm, 0 otherwise.
CEOO	CEO ownership: Percentage of common shares held by a CEO of a firm.
CEOP	CEO power: The ratio of CEO pay to the sum total of the pay of the top five executives.
CEOR	CEO reputation: The score (0 to 100) obtained by a firm's current CEO in the *Sunday Times* top 100 CEO/business leaders award in South Africa. Since 1960, the SA *Sunday Times* conducts annual peer survey of 100 best performing companies listed on the JSE based on a number of measures, including their past five years share returns. The rankings are decided by the *Sunday Times* previous year's top 100 ranked CEOs.
CEOT	CEO tenure: The number of years that a firm's current CEO has been in that position.
CEOD	1, if the CEO is also the chairperson of the board of directors of a firm, 0 otherwise.
FCEO	Founding CEO: 1, if the current CEO of a firm is its founder, 0 otherwise.
Control variables	
BIG4	1, if a firm is audited by a big four audit firm (PricewaterhouseCoopers, Deloitte & Touche, Ernst & Young, and KPMG), 0 otherwise.
CAPX	Percentage of total capital expenditure to total assets.
CGCO	1, if a firm has set up a corporate governance committee, 0 otherwise
CLIST	1, if a firm is listed on a foreign stock market, 0 otherwise.
DIV	1, if a firm did pay out dividends in a financial year, 0 otherwise.
LEV	Percentage of total debt to total assets.
LNTA	Natural log of total assets.
SGR	Percentage of current year's sales minus previous year's sales scaled by previous year's sales.
IND	Dummies for each of the five main industries: basic material + oil & gas; consumer goods; consumer services + health care; industrials; technology + telecoms firms.
YD	Dummies for each of the 10 years from 2003 to 2012 inclusive.

Table 4. Descriptive statistics of all variables for all (1,690) firm years.

Variable	Mean	Median	Std. dev.	Maximum	Minimum
Group A: Total executive (top management team) pay (dependent) variables					
CEO CASH (Rm)	2.18	1.37	2.97	13.18	0.06
CEO EQUITY (Rm)	0.75	0.44	0.88	3.80	0.00
CPAY (Rm)	2.89	1.78	3.79	16.86	0.06
TPAY CASH (Rm)	11.28	6.94	11.36	74.79	0.11
TPAY EQUITY (Rm)	1.66	0.98	1.98	12.40	0.00
TPAY (Rm)	12.92	7.86	13.74	87.54	0.11
Group B: Corporate performance (independent) variables					
Q	1.58	1.38	0.72	3.60	0.72
ROA (%)	10.79	11.95	14.10	37.85	-19.34
TSR (%)	28.38	25.24	88.73	236.42	-48.29
Group C: CEO power variables					
CEOA	52.94	53.00	9.11	81.00	34.00
CEOD	0.23	0.00	0.43	1.00	0.00
CEOO (%)	8.59	7.43	9.86	67.85	0.03
CEOP	0.48	0.44	0.42	0.80	0.05
CEOR	29.86	26.00	33.31	100.00	0.00
CEOT	7.36	6.80	8.09	42.00	0.25
FCEO	0.19	0.17	0.28	1.00	0.00
Group D: Corporate governance structure variables					
BOWN (%)	62.43	64.74	18.50	91.80	10.21
BSIZ	9.80	10.00	3.73	18.00	4.00
DOWN (%)	19.32	88.79	18.34	78.84	1.42
IOWN (%)	74.32	82.26	22.90	97.69	9.42
NBM	4.77	4.00	2.42	16.00	1.00
NCOM	0.28	0.00	0.38	1.00	0.00
NEDs (%)	56.90	57.74	15.48	84.28	17.36
RCOM	0.14	0.00	0.35	1.00	0.00
Group E: Control variables					
BIG4	0.73	1.00	0.44	1.00	0.00
CAPX (%)	12.95	8.64	15.38	66.50	7.28
CGCO	0.32	0.00	0.47	1.00	0.00
CLIST	0.22	0.00	0.41	1.00	0.00
DIV	0.67	1.00	0.47	1.00	0.00
LEV (%)	17.76	16.36	13.70	55.92	5.13
LNTA	5.94	6.10	0.56	7.88	4.24
SGR (%)	12.35	13.98	26.53	89.58	-44.21

Notes: Variables are defined as follows: CEO total cash-based pay (*CEO CASH*) in millions of SA Rands (*R* in millions), CEO total equity-based pay (*CEO EQUITY*), CEO total pay (*CPAY*), total cash-based pay of all executive directors (*TPAY CASH*), total equity-based pay of all executive directors (*TPAY EQUITY*), total pay of all executive directors (*TPAY*), Tobin's Q (*Q*), return on assets (*ROA*), total share return (*TSR*), CEO age (*CEOA*), CEO duality (*CEOD*), CEO ownership (*CEOO*), CEO power (*CEOP*), CEO reputation (*CEOR*), CEO tenure (*CEOT*), CEO duality (*CEOD*), founding CEO (*FCEO*), block ownership (*BOWN*), board size (*BSIZ*), director ownership (*DOWN*), institutional ownership (*IOWN*), the number of board meetings (*NBM*), the presence of an independent nomination committee (*NCOM*), the percentage of independent non-executive directors (*NEDs*), the presence of an independent remuneration committee (*RCOM*), audit firm size (*BIG4*), capital expenditure (*CAPX*), the presence of a CG committee (*CGCO*), cross-listing (*CLIST*), dividend payment status (*DIV*), leverage (*LEV*), firm size (*LNTA*), and sales growth (*SGR*).

Table 5. Pearson's and Spearman's correlation matrices of the variables for all 1,690 firm years

Variable	*TPAY*	*CPAY*	*TSR*	*CEOA*	*CEOP*	*CEOO*	*CEOR*	*CEOT*	*CEOD*	*FCEO*	*BOWN*	*BSIZ*	*DOWN*	*IOWN*	*NCOM*	*NEDs*	*RCOM*	*LEV*	*LNTA*	*SGR*
TPAY	*1.00*	.74***	.13**	.05	.40***	-.07	.28***	.10*	.01	.11**	.12**	.28***	-.15***	-.23***	-.21***	-.24**	-.28***	-.23***	.45***	.11**
CPAY	.69***	*1.00*	.15**	.08*	.47***	-.06	.35***	.17**	.08*	.19**	.23***	.32***	-.23***	-.28***	-.24***	-.27**	-.30***	-.27***	.48***	.15**
TSR	.08*	.11**	*1.00*	-.01	.05	.09*	.13**	-.06	-.05	.16**	-.12**	-.10*	.16***	.19**	.18**	.21***	.19**	-.10*	-.07	.19**
CEOA	.03	-.07	-.02	*1.00*	.14**	.03	.04	.09*	-.03	-.07	.14**	.07	-.06	-.07	-.02	-.04	-.07	-.02	-.01	-.02
CEOP	.36***	.42***	.06	.12**	*1.00*	.16**	.47***	.20***	.18**	.20***	.16**	.11**	-.15***	-.20***	-.11**	-.16*	-.19**	.06	-.05	-.04
CEOO	-.02	-.04	.08	.07	.19**	*1.00*	-.02	.12**	-.05	.36***	.25***	.08*	.10*	-.12**	-.03	-.07	-.06	-.03	-.08*	-.00
CEOR	.30***	.46***	.12**	.09*	.20***	-.05	*1.00*	.14**	-.06	-.05	-.06	.11**	.05	.11**	-.02	-.04	-.05	.07	.02	-.00
CEOT	.08*	.13**	-.05	.07	.15**	.10*	.12**	*1.00*	.10*	.18**	.09*	.14**	-.08*	-.15***	-.11**	-.15**	-.19**	-.05	-.07	.05
CEOD	-.05	.11**	-.07	-.05	.20**	-.07	-.05	.12**	*1.00*	.22***	.18**	-.09*	-.09*	-.13***	-.02	-.04	-.06	-.03	-.03	.02
FCEO	.09*	.17**	.14**	-.03	.18**	.34***	-.07	.15**	.19**	*1.00*	.21***	.08*	.06	-.15**	-.03	-.07	-.05	-.08*	-.02	.00
BOWN	.14**	.18**	-.07	.12**	.13**	.22***	-.04	.07	.16**	.19**	*1.00*	-.10*	-.09*	-.10*	-.07	-.03	-.06	.06	-.09*	.00
BSIZ	.23***	.29***	-.06	.04	.09*	.20***	.09*	.12**	-.06	.04	-.08*	*1.00*	-.08*	-.09*	.18***	.16**	.14**	.17**	.30***	.00
DOWN	-.13**	-.19**	.14**	-.03	-.12**	.07	.02	-.06	-.05	.03	-.07	-.05	*1.00*	-.07	-.06	-.03	-.05	-.05	-.02	.02
IOWN	-.19**	-.23***	.15**	-.05	-.16**	-.10*	.08*	-.12**	-.10*	-.11**	-.08*	-.06	-.04	*1.00*	.18***	.16**	.17**	.03	.13**	-.04
NCOM	-.15**	-.19**	.10*	-.04	-.08*	.00	.05	-.10*	-.03	-.02	-.07	.11**	-.05	.13**	*1.00*	.30***	.38***	-.07	.16*	-.03
NEDs	-.13**	-.17**	.08*	-.06	-.12**	.02	.07	-.14**	-.05	-.03	-.05	.13**	-.03	-16**	.32***	*1.00*	.26**	-.04	.14**	.10*
RCOM	-.24***	-.28***	.13**	-.03	-.15**	.04	.04	-.17**	-.07	-.05	-.04	.15**	-.05	.14**	.35***	.20***	*1.00*	-.06	.19**	.08*
LEV	-.22**	-.24***	-.07	-.05	-.07	-.06	.09*	-.07	-.06	-.10*	.08*	.22***	-.07	.05	-.06	-.07	-.03	*1.00*	.34***	.03
LNTA	.42***	.46***	-.05	-.02	.05	-.10*	.04	-.05	-.07	-.05	-.11**	.33***	-.05	.16**	.18**	.20***	.14**	.25***	*1.00*	-.05
SGR	.08*	.12**	.16**	-.05	-.07	.03	-.03	.05	.06	.00	.01	.05	-.07	-.02	-.09*	.11**	.13**	.07	-.03	*1.00*

Notes: The bottom left half of the table reports Pearson's parametric correlation coefficients, whilst the upper right half of the table presents Spearman's non-parametric correlation coefficients. ***, **, and * indicate correlation is significant at the 1%, 5% and 10% level, respectively (two-tailed tests). Variables are defined as follows: total pay of all executive directors (*TPAY*), total CEO pay (*CPAY*), total shareholder return (*TSR*), CEO age (*CEOA*), CEO power (*CEOP*), CEO ownership (*CEOO*), CEO reputation (*CEOR*), CEO tenure (*CEOT*), CEO duality (*CEOD*), founding CEO (*FCEO*), block ownership (*BOWN*), director ownership (*DOWN*), institutional ownership (*IOWN*), the presence of an independent nomination committee (*NCOM*), percentage of independent non-executive directors (*NEDs*), the presence of an independent remuneration committee (*RCOM*), leverage (*LEV*), firm size (*LNTA*) and sales growth (*SGR*). Table 3 contains full definitions of all the variables employed.

Table 6. The effect of corporate performance on executive pay

	Dependent variable					
	All executive directors' pay			CEO pay		
Independent variable	ΔCash	ΔNon-cash	ΔTotal	ΔCash	ΔNon-cash	ΔTotal
Model	(I)	(II)	(III)	(IV)	(V)	(VI)
Corporate Performance variable:						
ΔTSR_{t-1}	0.029**	0.051***	0.063***	0.048***	0.069***	0.095***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Control variables:						
Δ$BIG4_{t-1}$	0.147**	0.140**	0.175***	0.170**	0.180***	0.204***
	(.034)	(.042)	(.000)	(.000)	(.000)	(.000)
Δ$CAPX_{t-1}$	-0.030**	-0.067***	-0.098***	-0.062**	-0.103***	-0.116***
	(.044)	(.010)	(.000)	(.020)	(.000)	(.000)
Δ$CGCO_{t-1}$	-0.186***	-0.177***	-0.202***	-0.197***	-0.205***	-0.210***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Δ$CLIST_{t-1}$	0.123**	0.170***	0.182***	0.140**	0.181***	0.195***
	(.029)	(.010)	(.000)	(.019)	(.000)	(.000)
ΔDIV_{t-1}	-0.120**	-0.171**	-0.185***	-0.130**	-0.194***	-0.211***
	(.050)	(.020)	(.009)	(.036)	(.000)	(.000)
ΔLEV_{t-1}	-0.035**	-0.040**	-0.055**	-0.065***	-0.086***	-0.104***
	(.046)	(.032)	(.016)	(.009)	(.000)	(.000)
Δ$LNTA_{t-1}$	0.210***	0.238***	0.262***	0.225***	0.246***	0.289***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
ΔSGR_{t-1}	0.106***	0.120***	0.145***	0.134***	0.156***	0.172***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
IND	*Included*	*Included*	*Included*	*Included*	*Included*	*Included*
YD	*Included*	*Included*	*Included*	*Included*	*Included*	*Included*
Constant	1.674***	1.695***	1.686***	1.896***	1.952***	1.932***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
F-value	6.254***	6.306***	6.279***	6.556***	6.965***	6.784***
Adjusted R^2	0.372	0.380	0.388	0.390	0.402	0.412
N	1,521	1,521	1,521	1,521	1,521	1,521

Notes: The table presents a median regression of changes (Δ) in cash, non-cash and total pay of all executive directors and the CEO, respectively, on changes in shareholder wealth (corporate performance) and the control variables. *P*-values are in parentheses. Following Peterson (2009), the coefficients are estimated by using the robust *Clustered Standard Errors* technique. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively. The other variables are defined as follows: changes (Δ) in total share return (Δ*TSR*), audit firm size (Δ*BIG4*), capital expenditure (Δ*CAPX*), the presence of a CG committee (Δ*CGCO*), cross-listing (Δ*CLIST*), dividend payment status (Δ*DIV*), leverage (Δ*LEV*), firm size (Δ*LNTA*), sales growth (Δ*SGR*), year (*YD*) and industry (*IND*) dummies. Table 3 fully defines all the variables used.

Table 7: Statistical comparisons of the differences in estimated PPS between CEOs and executive directors

Variable	PPS coefficient for executives	PPS coefficient for CEOs	*T-test* of PPS difference: (CEOs - Executives)
Panel A: Estimated PPS coefficients from Table 6			
Cash (TSR)	0.029	0.048	0.019*
Non-Cash (TSR)	0.051	0.069	0.018*
Total (TSR)	0.063	0.095	0.032***
Panel B: Estimated PPS coefficients from Table 8			
Q	0.152	0.175	0.023**
ROA	0.165	0.186	0.021**
TSR	0.157	0.180	0.023**
Panel C: Estimated PPS coefficients from Table 9			
Q	0.136	0.153	0.017*
ROA	0.147	0.158	0.011*
TSR	0.142	0.155	0.013*
Panel D: Estimated PPS coefficients from Table 10			
PRE_TSR (Step 1)	0.140	0.144	0.004
PRE_TSR (Step 2)	0.165	0.178	0.013**
Panel E: Estimated PPS coefficients from Table 11			
PRE_TSR (Step 1)	0.130	0.141	0.011*
PRE_TSR (Step 2)	0.149	0.169	0.020**
Panel F: Estimated PPS coefficients from Table 12			
PRE_Q	0.160	0.182	0.022**
PRE_ROA	0.171	0.196	0.025**
PRE_TSR	0.165	0.194	0.029***
Panel G: Estimated PPS coefficients from Table 13			
PRE_Q	0.145	0.164	0.019*
PRE_ROA	0.156	0.169	0.013*
PRE_TSR	0.153	0.167	0.014*

Notes: The table contains *PPS* coefficients estimated in Tables 6, and 8 to 13 for CEOs and all executive directors along with their differences (CEOs coefficients minus coefficients of all executive directors). ***, **, and * denote that the difference between the estimated PPS for CEOs and all executive directors is significant at the 1%, 5%, and 10% level, respectively.

Table 8. The moderating effect of CEO power on the pay-for-performance relationship

	Dependent variable					
	ΔAll executive directors' pay			ΔCEO pay		
Independent variable	ΔTPAY	ΔTPAY	ΔTPAY	ΔCPAY	ΔCPAY	ΔCPAY
Model	(I)	(II)	(III)	(IV)	(V)	(VI)
Corporate performance variable:						
ΔQ_{t-1}	0.152***	-	-	0.175***	-	-
	(.000)	-	-	(.000)	-	-
ΔROA_{t-1}	-	0.165***	-	-	0.186***	-
	-	(.000)	-	-	(.000)	-
ΔTSR_{t-1}	-	-	0.157**	-	-	0.180***
	-	-	(.000)	-	-	(.000)
CEO power variables:						
$\Delta CEOA_{t-1}$	-0.012	-0.018	-0.015	-0.017	-0.025	-0.020
	(.345)	(.320)	(.330)	(.323)	(.310)	(.316)
$\Delta CEOD_{t-1}$	-0.005	-0.008	-0.006	-0.010	-0.016	-0.014
	(.594)	(.573)	(.587)	(.562)	(.545)	(.552)
$\Delta CEOO_{t-1}$	0.203***	0.209***	0.205***	0.216***	0.227***	0.220***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
$\Delta CEOP_{t-1}$	-0.133***	-0.139***	-0.136***	-0.140***	-0.147***	-0.143***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
$\Delta CEOR_{t-1}$	0.162***	0.167***	0.165***	0.170***	0.177***	0.174***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
$\Delta CEOT_{t-1}$	-0.102**	-0.107**	-0.105**	-0.109**	-0.115**	-0.112**
	(.038)	(.032)	(.036)	(.030)	(.024)	(.028)
$\Delta FCEO_{t-1}$	0.053*	0.060*	0.057*	0.063*	0.067**	0.065**
	(.064)	(.058)	(.060)	(.054)	(.048)	(.050)
Interaction variables:						
$\Delta P*CEOA_{t-1}$	-0.003	-0.008	-0.005	-0.010	-0.016	-0.013
	(.372)	(.364)	(.368)	(.349)	(.335)	(.340)
$\Delta P*CEOD_{t-1}$	-0.001	-0.004	-0.002	-0.005	-0.010	-0.007
	(.630)	(.610)	(.625)	(.596)	(.570)	(.585)
$\Delta P*CEOO_{t-1}$	0.182***	0.188***	0.184***	0.197***	0.210***	0.206***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
$\Delta P*CEOP_{t-1}$	-0.120***	-0.127***	-0.123***	-0.129***	-0.136***	-0.133***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
$\Delta P*CEOR_{t-1}$	0.143***	0.148***	0.145***	0.153***	0.159***	0.156***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
$\Delta P*CEOT_{t-1}$	-0.078*	-0.085**	-0.082**	-0.090**	-0.097**	-0.093**
	(.052)	(.046)	(.049)	(.040)	(.035)	(.037)
$\Delta P*FCEO_{t-1}$	0.044*	0.048*	0.046*	0.053*	0.059*	0.056*
	(.077)	(.072)	(.074)	(.068)	(.063)	(.065)
$\Delta CONTROLS$	*Included*	*Included*	*Included*	*Included*	*Included*	*Included*
Constant	2.165***	2.187***	2.174***	2.295***	2.467***	2.325***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
F-value	7.176***	7.341***	7.269***	7.508***	7.757***	7.652***
Adjusted R^2	0.442	0.448	0.443	0.452	0.469	0.464
N	1,521	1,521	1,521	1,521	1,521	1,521

Notes: P-values are in parentheses. Following Peterson (2009), the coefficients are estimated by using the robust *Clustered Standard Errors* technique. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively. Δ is the first-difference operator and is applied to the variables as follows: Total executive pay (*TPAY*), total CEO pay (*CPAY*), Tobin's Q (Δ*Q*), return on assets (Δ*ROA*), total share return (Δ*TSR*), CEO age (Δ*CEOA*), CEO duality (Δ*CEOD*), CEO ownership (Δ*CEOO*), CEO power (Δ*CEOP*), CEO reputation (Δ*CEOR*), CEO tenure (Δ*CEOT*) and founding CEO (Δ*FCEO*). The next set of seven variables is interaction variables created for each CEO power and the three performance proxies, respectively. All the control variables introduced in Table 6 are included in each model, but for brevity not reported and available upon request. Table 3 fully defines all the variables used.

Table 9. The moderating effect of governance structure on the pay-for-performance relationship

	Dependent variable					
	ΔAll executive directors' pay			ΔCEO pay		
Independent variable	ΔTPAY	ΔTPAY	ΔTPAY	ΔCPAY	ΔCPAY	ΔCPAY
Model	(I)	(II)	(III)	(IV)	(V)	(VI)
Corporate performance variables:						
ΔQ_{t-1}	0.136***	-	-	0.153***	-	-
	(.000)	-	-	(.000)	-	-
ΔROA_{t-1}	-	0.147***	-	-	0.158***	-
	-	(.000)	-	-	(.000)	-
ΔTSR_{t-1}	-	-	0.142**	-	-	0.155***
	-	-	(.000)	-	-	(.000)
Corporate governance structure:						
Ownership structure variables:						
$\Delta BOWN_{t-1}$	-0.008	-0.014	-0.011	-0.013	-0.018	-0.016
	(.520)	(.512)	(.515)	(.510)	(.492)	(.504)
$\Delta DOWN_{t-1}$	0.123***	0.130***	0.127***	0.128***	0.136***	0.132***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
$\Delta IOWN_{t-1}$	0.072*	0.079*	0.076*	0.082*	0.090**	0.087**
	(.064)	(.058)	(.060)	(.054)	(.048)	(.050)
Board structure variables:						
$\Delta BSIZ_{t-1}$	-0.243***	-0.255***	-0.248***	-0.260***	-0.267***	-0.264***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
ΔNBM_{t-1}	0.019	0.028	0.025	0.029	0.037	0.033
	(.373)	(.362)	(.367)	(.358)	(.349)	(.352)
$\Delta NCOM_{t-1}$	0.120***	0.128***	0.124***	0.131***	0.139***	0.135***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
$\Delta NEDs_{t-1}$	-0.006	-0.009	-0.007	-0.008	-0.015	-0.011
	(.593)	(.582)	(.586)	(.584)	(.577)	(.580)
$\Delta RCOM_{t-1}$	0.130***	0.137***	0.133***	0.135***	0.140***	0.137***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Interaction variables:						
Ownership structure variables:						
$\Delta P*BOWN_{t-1}$	-0.001	-0.005	-0.003	-0.006	-0.009	-0.007
	(.575)	(.562)	(.569)	(.545)	(.536)	(.540)
$\Delta P*DOWN_{t-1}$	0.107***	0.115***	0.110***	0.117***	0.125***	0.120***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
$\Delta P*IOWN_{t-1}$	0.060*	0.067*	0.064*	0.069*	0.075*	0.073*
	(.089)	(.084)	(.087)	(.081)	(.070)	(.074)
Board structure variables:						
$\Delta P*BSIZ_{t-1}$	-0.225***	-0.234***	-0.229***	-0.235***	-0.243***	-0.240***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
$\Delta P*NBM_{t-1}$	0.002	0.005	0.003	0.006	0.009	0.007
	(.439)	(.428)	(.430)	(.425)	(.418)	(.420)
$\Delta P*NCOM_{t-1}$	0.109***	0.117***	0.114***	0.119***	0.126***	0.122***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
$\Delta P*NEDs_{t-1}$	-0.001	-0.005	-0.003	-0.008	-0.014	-0.010
	(.630)	(.622)	(.627)	(.611)	(.600)	(.608)
$\Delta P*RCOM_{t-1}$	0.118***	-0.125***	-0.123***	-0.126***	-0.132***	-0.129***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
$\Delta CONTROLS$	*Included*	*Included*	*Included*	*Included*	*Included*	*Included*
Constant	2.365***	2.394***	2.375***	2.492***	2.637***	2.573***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
F-value	8.057***	8.169***	8.112***	8.176***	8.207***	8.194***
Adjusted R^2	0.453	0.462	0.458	0.465	0.474	0.469

N	1,521	1,521	1,521	1,521	1,521	1,521

Notes: P-values are in parentheses. Following Peterson (2009), the coefficients are estimated by using the robust *Clustered Standard Errors* technique. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively. Δ is the first-difference operator and is applied to the variables as follows: Total executive pay (*TPAY*), total CEO pay (*CPAY*), Tobin's Q (Δ*Q*), return on assets (Δ*ROA*), total share return (Δ*TSR*), block ownership (Δ*BOWN*), director ownership (*DOWN*), institutional ownership (Δ*IOWN*), board size (Δ*BSIZ*), number of board meetings (Δ*NBM*), the presence of an independent nomination committee (Δ*NCOM*), percentage of independent non-executive directors (Δ*NEDs*) and the presence of an independent remuneration committee (Δ*RCOM*). The next set of eight variables is interaction variables created for each governance mechanism and the three performance proxies, respectively. All the control variables introduced in Table 6 are included in each model, but for brevity not reported and available upon request. Table 3 fully defines all the variables used.

Table 10. The moderating effect of CEO power on the PPS using a two-step multilevel regression

	Dependent variable			
	ΔAll executive directors' pay		ΔCEO pay	
Independent variable Model (*Hierarchical*)	ΔTPAY (Step 1)	ΔTPAY (Step 2)	ΔCPAY (Step 1)	ΔCPAY (Step 2)
Corporate performance variable:				
Δ*PRE_TSR*$_t$	0.140***	0.165***	0.144***	0.178***
	(.000)	(.000)	(.000)	(.000)
CEO power variables:				
Δ*CEOA*$_t$	-0.007	-0.022	-0.016	-0.033
	(.462)	(.296)	(.321)	(.285)
Δ*CEOD*$_t$	-0.005	-0.020	-0.010	-0.025
	(.584)	(.528)	(.552)	(.511)
Δ*CEOO*$_t$	0.186***	0.263***	0.202***	0.244***
	(.000)	(.000)	(.000)	(.000)
Δ*CEOP*$_t$	-0.129***	-0.151***	-0.135***	-0.158***
	(.000)	(.000)	(.000)	(.000)
Δ*CEOR*$_t$	0.157***	0.183***	0.162***	0.194***
	(.000)	(.000)	(.000)	(.000)
Δ*CEOT*$_t$	-0.101**	-0.120**	-0.108**	-0.133***
	(.035)	(.030)	(.034)	(.010)
Δ*FCEO*$_t$	0.049*	0.088**	0.060**	0.095**
	(.086)	(.036)	(.047)	(.024)
Interaction variables:				
Δ*P*CEOA*$_t$	-	-0.020	-	-0.032
	-	(.337)	-	(.287)
Δ*P*CEOD*$_t$	-	-0.013	-	-0.030
	-	(.568)	-	(.498)
Δ*P*CEOO*$_t$	-	0.207***	-	0.225***
	-	(.000)	-	(.000)
Δ*P*CEOP*$_t$	-	-0.149***	-	-0.157***
	-	(.000)	-	(.000)
Δ*P*CEOR*$_t$	-	0.165***	-	0.179***
	-	(.000)	-	(.000)
Δ*P*CEOT*$_t$	-	-0.096**	-	-0.118**
	-	(.034)	-	(.025)
Δ*P*FCEO*$_t$	-	0.045*	-	0.080**
	-	(.090)	-	(.042)
Δ*CONTROLS*	*Included*	*Included*	*Included*	*Included*
Constant	2.132***	2.502***	2.365***	2.790***
	(.000)	(.000)	(.000)	(.000)
F-value	5.538***	6.988***	6.082***	7.620***
Adjusted R^2	0.356 ΔR^2: 0.094	0.450	0.364 ΔR^2: 0.119	0.483
N	1,521	1,521	1,521	1,521

Notes: P-values are in parentheses. Following Peterson (2009), the coefficients are estimated by using the robust *Clustered Standard Errors* technique. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively. Δ is the first-difference operator and is applied to the variables as follows: Predicted total shareholder return (Δ*PRE_TSR*), CEO age (Δ*CEOA*), CEO duality (Δ*CEOD*), CEO ownership (Δ*CEOO*), CEO power (Δ*CEOP*), CEO reputation (Δ*CEOR*), CEO tenure (Δ*CEOT*) and founding CEO (Δ*FCEO*). The next set of seven variables is interaction variables created for each CEO power and performance (*TSR*) proxies, respectively. All the control variables introduced in Table 6 are included in each model, but for brevity not reported and available upon request. Table 3 fully defines all the variables used.

Table 11. The moderating effect of CG structure on the PPS using a two-step multilevel regression

	Dependent variable			
	ΔAll executive directors' pay		ΔCEO pay	
Independent variable Model (*Hierarchical*)	ΔTPAY (Step 1)	ΔTPAY (Step 2)	ΔCPAY (Step 1)	ΔCPAY (Step 2)
Corporate performance variable:				
Δ*PRE_TSR*$_t$	0.130***	0.149***	0.141***	0.167***
	(.000)	(.000)	(.000)	(.000)
Corporate governance structure:				
Ownership structure variables:				
Δ*BOWN*$_t$	-0.020	-0.027	-0.025	-0.033
	(.486)	(.469)	(.472)	(.454)
Δ*DOWN*$_t$	0.132***	0.138***	0.143***	0.156***
	(.000)	(.000)	(.000)	(.000)
Δ*IOWN*$_t$	0.098**	0.104**	0.107**	0.110**
	(.050)	(.047)	(.040)	(.029)
Board structure variables:				
Δ*BSIZ*$_t$	-0.260***	-0.275***	-0.278***	-0.285***
	(.000)	(.000)	(.000)	(.000)
Δ*NBM*$_t$	0.032	0.036	0.038	0.046
	(.345)	(.340)	(.337)	(.323)
Δ*NCOM*$_t$	0.138***	0.149***	0.145***	0.158***
	(.000)	(.000)	(.000)	(.000)
Δ*NEDs*$_t$	-0.020	-0.026	-0.023	-0.036
	(.554)	(.540)	(.545)	(.533)
Δ*RCOM*$_t$	0.141***	0.150***	0.146***	0.158***
	(.000)	(.000)	(.000)	(.000)
Interaction variables:				
Ownership structure variables:				
Δ*P*BOWN*$_t$	-	-0.013	-	-0.025
	-	(.532)	-	(.506)
Δ*P*DOWN*$_t$	-	0.129***	-	0.134***
	-	(.000)	-	(.000)
Δ*P*IOWN*$_t$	-	0.090*	-	0.097**
	-	(.060)	-	(.050)
Board structure variables:				
Δ*P*BSIZ*$_t$	-	-0.252***	-	-0.265***
	-	(.000)	-	(.000)
Δ*P*NBM*$_t$	-	0.025	-	0.047
	-	(.364)	-	(.330)
Δ*P*NCOM*$_t$	-	0.132***	-	0.146***
	-	(.000)	-	(.000)
Δ*P*NEDs*$_t$	-	-0.022	-	-0.037
	-	(.584)	-	(.569)
Δ*P*RCOM*$_t$	-	-0.135***	-	-0.147***
	-	(.000)	-	(.000)
Δ*CONTROLS*	*Included*	*Included*	*Included*	*Included*
Constant	2.423***	2.652***	2.504***	2.846***
	(.000)	(.000)	(.000)	(.000)
F-value	6.576***	7.689***	6.865***	8.531***
Adjusted R^2	0.383 ΔR^2: 0.078	0.461	0.398 ΔR^2: 0.107	0.490
N	1,521	1,521	1,521	1,521

Notes: P-values are in parentheses. Following Peterson (2009), the coefficients are estimated by using the robust *Clustered Standard Errors* technique. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively. Δ is the first-difference operator and is applied to the variables as follows: predicted total shareholder return (Δ*PRE_TSR*), block ownership (Δ*BOWN*), director ownership

(*DOWN*), institutional ownership (Δ*IOWN*), board size (Δ*BSIZ*), number of board meetings (Δ*NBM*), the presence of an independent nomination committee (Δ*NCOM*), percentage of independent non-executive directors (Δ*NEDs*) and the presence of an independent remuneration committee (Δ*RCOM*). The next set of eight variables is interaction variables created for each governance mechanism and the performance (*TSR*) proxies, respectively. All the control variables introduced in Table 6 are included in each model, but for brevity not reported and available upon request. Table 3 fully defines all the variables used.

Table 12. The moderating effect of CEO power on the pay-for-performance relationship with 2SLS

	Dependent variable					
	ΔAll executive directors' pay (2SLS)			ΔCEO pay (2SLS)		
Independent variable	ΔTPAY	ΔTPAY	ΔTPAY	ΔCPAY	ΔCPAY	ΔCPAY
Model	(I)	(II)	(III)	(IV)	(V)	(VI)
Corporate performance variable:						
Δ*PRE_Q*$_t$	0.160***	-	-	0.182***	-	-
	(.000)	-	-	(.000)	-	-
Δ*PRE_ROA*$_t$	-	0.171***	-	-	0.196***	-
	-	(.000)	-	-	(.000)	-
Δ*PRE_TSR*$_t$	-	-	0.165**	-	-	0.194***
	-	-	(.000)	-	-	(.000)
CEO power variables:						
Δ*CEOA*$_t$	-0.018	-0.023	-0.020	-0.021	-0.029	-0.027
	(.318)	(.305)	(.311)	(.308)	(.295)	(.298)
Δ*CEOD*$_t$	-0.010	-0.015	-0.013	-0.017	-0.022	-0.019
	(.560)	(.542)	(.550)	(.538)	(.527)	(.530)
Δ*CEOO*$_t$	0.217***	0.226***	0.222***	0.228***	0.237***	0.231***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Δ*CEOP*$_t$	-0.142***	-0.148***	-0.145***	-0.147***	-0.154***	-0.150***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Δ*CEOR*$_t$	0.174***	0.180***	0.177***	0.181***	0.189***	0.187***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Δ*CEOT*$_t$	-0.109**	-0.116**	-0.111**	-0.117**	-0.125**	-0.121**
	(.029)	(.022)	(.027)	(.024)	(.013)	(.016)
Δ*FCEO*$_t$	0.064*	0.075**	0.071**	0.076**	0.085**	0.080**
	(.051)	(.040)	(.044)	(.038)	(.030)	(.033)
Interaction variables:						
Δ*P*CEOA*$_t$	-0.008	-0.013	-0.010	-0.016	-0.022	-0.019
	(.359)	(.340)	(.347)	(.332)	(.328)	(.330)
Δ*P*CEOD*$_t$	-0.005	-0.010	-0.007	-0.009	-0.019	-0.015
	(.592)	(.569)	(.583)	(.572)	(.556)	(.559)
Δ*P*CEOO*$_t$	0.193***	0.199***	0.195***	0.203***	0.220***	0.213***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Δ*P*CEOP*$_t$	-0.127***	-0.135***	-0.131***	-0.133***	-0.142***	-0.139***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Δ*P*CEOR*$_t$	0.155***	0.162***	0.159***	0.165***	0.174***	0.170***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Δ*P*CEOT*$_t$	-0.085**	-0.095**	-0.090**	-0.097**	-0.105**	-0.101**
	(.044)	(.037)	(.040)	(.033)	(.026)	(.030)
Δ*P*FCEO*$_t$	0.056*	0.064*	0.061*	0.065*	0.070**	0.068*
	(.065)	(.058)	(.060)	(.056)	(.049)	(.053)
Δ*CONTROLS*	*Included*	*Included*	*Included*	*Included*	*Included*	*Included*
Constant	2.475***	2.598***	2.485***	2.775***	2.896***	2.782***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
F-value	7.480***	7.594***	7.487***	7.726***	7.960***	7.843***
Adjusted R^2	0.458	0.465	0.460	0.472	0.478	0.475
N	1,521	1,521	1,521	1,521	1,521	1,521

Notes: P-values are in parentheses. Following Peterson (2009), the coefficients are estimated by using the robust *Clustered Standard Errors* technique. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively. Δ is the first-difference operator and is applied to the variables as follows: Predicted Tobin's Q (Δ*PRE_Q*), predicted return on assets (Δ*PRE_ROA*), predicted total share return (Δ*PRE_TSR*), CEO age (Δ*CEOA*), CEO duality (Δ*CEOD*), CEO ownership (Δ*CEOO*), CEO power (Δ*CEOP*), CEO reputation (Δ*CEOR*), CEO tenure (Δ*CEOT*) and founding CEO (Δ*FCEO*). The next set of seven variables is interaction variables created for each CEO power and the three performance proxies, respectively. All the control variables introduced in Table 6 are included in each model, but for brevity not reported and available upon request. Table 3 fully defines all the variables used.

Table 13. The moderating effect of CG structures on the pay-for-performance relationship with 2SLS

	Dependent variable					
	ΔAll executive directors' pay (2SLS)			ΔCEO pay (2SLS)		
Independent variable	ΔTPAY	ΔTPAY	ΔTPAY	ΔCPAY	ΔCPAY	ΔCPAY
Model	(I)	(II)	(III)	(IV)	(V)	(VI)
Corporate performance variable:						
Δ*PRE_Q*$_t$	0.145***	-	-	0.164***	-	-
	(.000)	-	-	(.000)	-	-
Δ*PRE_ROA*$_t$	-	0.156***	-	-	0.169***	-
	-	(.000)	-	-	(.000)	-
Δ*PRE_TSR*$_t$	-	-	0.153**	-	-	0.167***
	-	-	(.000)	-	-	(.000)
Corporate governance structure:						
Ownership structure variables:						
Δ*BOWN*$_t$	-0.015	-0.019	-0.017	-0.020	-0.028	-0.025
	(.510)	(.487)	(.492)	(.485)	(.480)	(.504)
Δ*DOWN*$_t$	0.129***	0.136***	0.133***	0.137***	0.144***	0.140***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Δ*IOWN*$_t$	0.082*	0.088**	0.086*	0.091**	0.098**	0.095**
	(.053)	(.049)	(.051)	(.046)	(.037)	(.040)
Board structure variables:						
Δ*BSIZ*$_t$	-0.255***	-0.267***	-0.262***	-0.271***	-0.278***	-0.274***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Δ*NBM*$_t$	0.027	0.036	0.030	0.034	0.039	0.037
	(.362)	(.350)	(.359)	(.352)	(.341)	(.344)
Δ*NCOM*$_t$	0.129***	0.137***	0.135***	0.138***	0.148***	0.146***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Δ*NEDs*$_t$	-0.016	-0.021	-0.018	-0.024	-0.029	-0.026
	(.575)	(.564)	(.569)	(.557)	(.548)	(.550)
Δ*RCOM*$_t$	0.135***	0.145***	0.141***	0.144***	0.149***	0.147***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Interaction variables:						
Ownership structure variables:						
Δ*P*BOWN*$_t$	-0.005	-0.009	-0.007	-0.011	-0.018	-0.016
	(.546)	(.537)	(.541)	(.534)	(.523)	(.529)
Δ*P*DOWN*$_t$	0.116***	0.125***	0.122***	0.126***	0.132***	0.129***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Δ*P*IOWN*$_t$	0.073*	0.086*	0.081*	0.087*	0.094*	0.090*
	(.072)	(.065)	(.068)	(.063)	(.057)	(.060)
Board structure variables:						
Δ*P*BSIZ*$_t$	-0.235***	-0.247***	-0.241***	-0.249***	-0.258***	-0.252***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Δ*P*NBM*$_t$	0.013	0.019	0.016	0.020	0.028	0.024
	(.395)	(.383)	(.389)	(.381)	(.369)	(.373)
Δ*P*NCOM*$_t$	0.118***	0.127***	0.124***	0.128***	0.137***	0.133***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Δ*P*NEDs*$_t$	-0.009	-0.015	-0.011	-0.017	-0.025	-0.021
	(.610)	(.598)	(.605)	(.592)	(.587)	(.590)
Δ*P*RCOM*$_t$	0.126***	-0.132***	-0.129***	-0.133***	-0.138***	-0.136***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Δ*CONTROLS*	*Included*	*Included*	*Included*	*Included*	*Included*	*Included*
Constant	2.780***	2.798***	2.791***	2.972***	2.995***	2.983***
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
F-value	8.783***	8.797***	8.792***	8.978***	8.993***	8.987***
Adjusted R^2	0.482	0.488	0.485	0.492	0.497	0.494

N	1,521	1,521	1,521	1,521	1,521	1,521

Notes: P-values are in parentheses. Following Peterson (2009), the coefficients are estimated by using the robust *Clustered Standard Errors* technique. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively. Δ is the first-difference operator and is applied to the variables as follows: predicted Tobin's Q (Δ*PRE_Q*), predicted return on assets (Δ*PRE_ROA*), predicted total share return (Δ*PRE_TSR*), block ownership (Δ*BOWN*), director ownership (*DOWN*), institutional ownership (Δ*IOWN*), board size (Δ*BSIZ*), number of board meetings (Δ*NBM*), the presence of an independent nomination committee (Δ*NCOM*), percentage of independent non-executive directors (Δ*NEDs*) and the presence of an independent remuneration committee (Δ*RCOM*). The next set of eight variables is interaction variables created for each governance mechanism and the three performance proxies, respectively. All the control variables introduced in Table 6 are included in each model, but for brevity not reported and available upon request. Table 3 fully defines all the variables used.