




The impact of remuneration governance on chief executive officer overpayment



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Background: Chief executive officer (CEO) payment and company performance are highly controversial, and existing research has focused on this link for decades. The study was conducted in South Africa where corporate governance regulators have introduced measures to improve the relationship between CEO pay and performance.

Aim: This research aimed to explore the problem by extending Pepper and Gore's (2015) behavioural agency theory to examine the moderating effect of remuneration governance on the CEO pay – company performance relationship.

Setting: The study focused on the Top 100 listed companies in which several regulations concerning CEO pay were introduced, which provided the opportunity to examine such regulations on the alignment of CEO pay and company performance.

Method: Panel data from 67 company annual reports were analysed over two decades with 871 datapoints, divided into three periods corresponding with the introduction of regulations. Analyses included corrected panel standard errors and estimated generalised least squared hierarchical multiple regression and moderated multiple regression analyses.

Results: Results showed a statistically significant positive relationship between company performance measures and total CEO remuneration (including long-term incentives [LTIs]) for each of the three periods. We found that LTIs tied to performance-vested criteria and CEO minimum shareholding do enhance pay-performance sensitivity. Results further suggest that the behavioural agency theory is incomplete and researchers should consider the role of remuneration governance in moderating CEO overpayment.

Conclusion: Remuneration governance should be refined through the inclusion of retrospective CEO remuneration disclosure to increase pay-performance sensitivity.

Contribution: This research contributes to knowledge of CEO payment and company performance.

Keywords: CEO remuneration; pay-performance sensitivity; corporate governance; share-based payments; behavioural agency theory; CEO overpayment.

Introduction

Research on chief executive officer (CEO) remuneration originates from the agency theory (Jensen 1986; Jensen & Meckling 1976), which holds that the interests of CEOs could be aligned with those of shareholders through long-term incentives (LTIs) and increased monitoring. More recently, scholars have expressed frustration at the agency theory's lack of applicability in explaining a relationship between company performance and CEO remuneration (e.g. Boyd & Solarino 2016; Bussin & Modau 2015; Hou, Priem & Goranova 2017; Jensen & Meckling 1976; Martin, Wiseman & Gomez-Mejia 2016; Martin, Wiseman & Gomez-Mejia, 2019).

Drawing on Wiseman and Gomez-Mejia (1998), Pepper and Gore (2015) proposed seven constructs that form the foundation of the behavioural agency theory. The behavioural agency theory focuses on the role of motivation and behavioural responses from CEOs to changes in remuneration package design that are linked to company performance outcomes. There is a shift from assumed rational agent behaviour to bounded rationality in response to loss aversion (Bosse & Philips 2016; Wiseman & Gomez-Mejia 1998). In the present study, we extend the Pepper and Gore (2015) model through introducing remuneration governance as a novel moderator in preventing overpayment of CEOs. Their remuneration is considered excessive when movements do not follow company performance, and the unjustifiable outcomes are likely to be seen as overpayment (Kaplan 2008).

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Over the past two decades, CEO remuneration has been under the spotlight in South Africa and significant governance regulations were introduced (Bussin 2016; Institute of Directors in South Africa 2002, 2016). This has provided us with the opportunity to measure the impact of these, and similar regulations, on overpayment of CEOs and to introduce them as potential moderators or mediators in the Pepper and Gore (2015) model.

Remuneration governance is linked to Pepper and Gore's (2015) process of goal setting, contracting, and monitoring, but focuses on the role of three specific behavioural factors, performance-based LTI vesting criteria (PVC), CEO minimum shareholding requirements (MSR) and voluntary additional retrospective CEO remuneration disclosure (RET), in moderating the relationship between total CEO remuneration and company performance.

Leading up to the emergence of remuneration governance, it is argued that two key events significantly impacted the CEO remuneration domain. Firstly, the 2000 to 2001 dot.com bubble, fuelled by speculation in technology shares, coupled with a rapid rise in the use of LTIs (Frydman & Jenter 2010), culminated in company bankruptcies due to failures in corporate governance and fraudulent accounting practices (Kaplan 2008). Secondly, the global financial crisis of 2007 to 2009, fuelled by excessive risk-taking and financial engineering, altered society's view of the robustness of companies and financial markets, while amplifying the importance of effective corporate governance such as company monitoring and increased disclosure of remuneration (Greenwood, Landier & Thesmar 2015).

These two events led to rapid global development of revised corporate governance regulations (Beber & Pagano 2013; Berger, Kick & Schaeck 2014). These include the promulgation of the US-based 2002 Sarbanes Oxley Act and similar regulatory changes globally, such as revised versions of the South African King Code of Corporate Governance (King II, King III, and King IV) and a global set of new accounting standards for share-based remuneration (SBR; Kaplan 2008).

Concurrent with these events, research on CEO remuneration identified the influence of behavioural economics on the research domain. Research on behavioural economics, anchored in the behavioural agency theory (Pepper & Gore 2015; Wiseman & Gomez-Mejia 1998), identified remuneration package design factors that cause behavioural responses in CEOs. These behavioural factors include (1) deferral of CEO remuneration LTIs, dependent on the company meeting PVC; and (2) the requirement that CEOs hold a minimum number of shares (MSR) to manage information asymmetry.

The research findings on these behavioural factors, once incorporated into corporate governance recommendations, were then adopted by certain remuneration committees (REMCOs) to refine the alignment of CEOs' and shareholder

interests (Bettis et al. 2010; Martin et al. 2016). When a company does not adhere to the suggested practices, it is likely that the CEO's variable remuneration is not linked to company performance and therefore is overpaid (Kaplan 2008; Kaplan & Rauh 2010). Conversely, a REMCO's implementation of these behavioural factors as part of remuneration governance, leads to greater pay-performance sensitivity and therefore reduces possible CEO overpayment.

Revised corporate governance and legislative requirements, at a fundamental level, were aimed at renewed alignment of agents' and principals' interests through revised agent behaviour. In South Africa, this led to the issuing of the third edition of the King Code of Corporate Governance (King III) (Institute of Directors in South Africa 2009). King III moved from King II's pure rule-based remuneration disclosure requirements, to the introduction of a principle that prescribes a clear link to be established between company performance and CEO remuneration. The new regulations incorporated global research on behavioural economics to drive closer interest alignment through risk and goal alignment (cf. Pepper & Gore 2015).

A further key aspect introduced in phases across jurisdictions was a formal 'say-on-pay' rule. This rule requires a separate, non-binding advisory vote in respect of executives' remuneration. In South Africa, this was introduced in King IV, effective from 2018 (Institute of Directors in South Africa 2016). In the present study, it is argued that this forms part of a shift in remuneration governance that spurred REMCOs to employ behavioural factors in remuneration contracts to satisfy shareholders' demand for a closer pay-performance relationship. These behavioural factors could be seen as proxies for increased remuneration governance.

The regulatory interventions, in South Africa under the helm of King III and King IV, fundamentally intensified remuneration governance as a key focus. It enabled shareholder activism as a dynamic force by empowering shareholders through relevant information (Almazan, Hartzell & Starks 2005; Cai & Walkling 2011; Goranova & Ryan 2014), and introduced a complementary regulatory environment for REMCOs in enhancing pay-performance sensitivity and reduced CEO overpayment (Gregory-Smith, Thompson & Wright 2014).

Theory and hypotheses

Using the behavioural agency theory (Pepper & Gore 2015; Wiseman & Gomez-Mejia 1998) as a primary theoretical base, this article focuses on the influence of behavioural and information economics, on interest alignment between the agent (the CEO) and the principals (the shareholders), in preventing possible CEO overpayment. Chief executive officer remuneration is considered excessive when viewed in relation to company performance, and the unjustifiable outcomes likely to be seen as overpayment (Kaplan 2008; Kaplan & Rauh 2010).

The agency problem

The relationship between company performance and total CEO remuneration first became relevant following the widespread establishment of companies as legal entities and the resultant division of labour in the 18th and 19th centuries. Company shareholders as principals set strategic goals, such as growth and profitability, while entrusting strategic execution and operational management to a third party – the CEO as the agent. This resulted in a conflict of interests, known as the *agency problem* (Jensen & Meckling 1976). Aware of the divergent interests, principals incur costs, such as bonding, monitoring, and other costs, to seek a closer alignment of interests and mitigate the agency problem (Fama 1980; Fama & Jensen 1983a; Jensen & Meckling 1976).

Limited consensus in the literature regarding the explanatory power of the traditional agency theory in managing the agency problem has resulted in scholars express frustration at the theory's lack of utility (Gopalan et al. 2014). According to the behavioural agency theory concepts of behavioural economics in the traditional agency problem are considered. The theory aims to better explain the link between incentives, CEO behaviour, and company performance (Bosse & Philips 2016; Wiseman & Gomez-Mejia 1998).

The emergence of behavioural agency theory

While the traditional agency theory is focused on interest alignment, the behavioural agency theory, anchored in behavioural economics, is focused on CEO motivation that drives agent behaviour as an antecedent to principal-agent interest alignment (Pepper & Gore 2015). According to the theory several factors, beyond monetary incentives that influence agent behavior, are conceptualised. With this approach the aim is to better explain the link between incentives, CEO behaviour, and company performance (Bosse & Philips 2016; Wiseman & Gomez-Mejia 1998).

In accordance the traditional financial economic assumption of rational agent behaviour is replaced with bounded rationality (Pepper & Gore 2015; Wiseman & Gomez-Mejia 1998). The theory relaxes the assumption that CEOs are always risk averse, suggesting that they are primarily loss averse and, when losses are at stake, may, in fact, take risks (Pepper & Gore 2015; Wiseman & Gomez-Mejia 1998).

Following the prospect theory, the behavioural agency theory further suggests that CEOs respond differently to losses by applying hyperbolic discounting of incentives, depending on whether the losses are immediate or over a longer term. According to Pepper and Gore (2015), the process of formalised goal setting, contracting, and monitoring drives commitment while increased motivation is leading to closer principal-interest alignment. Other changes include inequality aversion and recognising the effect of external motivation (Bosse & Philips 2016; Wiseman & Gomez-Mejia 1998).

The 2000 DotCom bubble, 2004 changes in share-based remuneration disclosure and emergence of remuneration disclosure and governance

Empirical evidence attributes the rise in CEO remuneration from the 1980s onward to the rise in LTIs and, more specifically, SBR (Frydman & Jenter 2010). As a result, by the early 2000s, there was a period of intense speculation in technology companies, coupled with financial market hysteria, known as the dot.com bubble. This period of share price (SP) growth in the financial markets, and therefore potential LTIs, drove the wrong behaviour in the form of excessive financial risk-taking and engineering that culminated in several corporate governance failures at companies such as Enron, WorldCom and Parmalat. In turn, these failures led reworked corporate governance regulations such as the US-based 2002 Sarbanes Oxley Act (Kaplan 2008) and South African King Code of Corporate Governance ('King II') (Institute of Directors in South Africa 2002).

The regulations considered global research findings with the aim of reducing the CEOs' influence on company directors and REMCOs when awarding CEO remuneration. These new regulations focused on an increased board monitoring mandate (Eisenhardt 1989; García-Meca & Sanchez-Ballesta 2009; Gomez-Mejia, Tosi & Hinkin 1987; Tosi et al. 1999), separation of the CEO and chairman roles by requiring an independent chairman (Banerjee, Nordqvist & Hellerstedt 2020; Boyd 1994), and ensuring a majority of independent and non-executive directors (García-Meca & Sanchez-Ballesta 2009; Morck, Shleifer & Vishny 1988), all aimed at greater board independence and improved strategic decision-making (Bailey & Peck 2013) in matters such as CEO remuneration. These revised regulations also provided insight into previously unobserved CEO remuneration figures, along with new perspectives on the alignment of the interests of agents and principals. Several countries adopted an increase in disclosure regulations and for the first time in South Africa's King Code of Corporate, governance required disclosure of CEO remuneration by listed companies (Institute of Directors in South Africa 2002). At global investor level these newly disclosed details, in turn, led the global accounting standard setting bodies to realise that a key loophole pertaining to the use of LTIs was that SBR costs were not reported and disclosed as part of CEO remuneration. This was because, at the time, accounting standards did not require SBR to be expensed through the income statement. The South African context provided an opportunity to isolate the impact of these events on CEO pay sensitivity. We took the Top 110 companies on the Johannesburg Stock Exchange (JSE) for a 13-year period and grouped them into three sub-periods, to enable examination of the impact of the 2006 introduction of expensing of SBR, the 2009 global financial crisis, and the 2016 introduction of say-on-pay rules.

This led to the development of our hypotheses. While some REMCOs may wish to increase the volumes of disclosure for obfuscation (Craighead, Magnan & Thorne 2004; Hooghiemstra,

Kuang & Qin 2017; Laksmana, Tietz & Yang 2012), we found that some companies adopted additional performance-linked disclosure practices. These companies voluntarily provided additional retrospective CEO remuneration (RET) and its link to performance by disclosing a clearer process of goal setting, contracting, and monitoring when concluding on CEOs' performance contracts, as envisaged by Pepper and Gore (2015). We argue that this improved remuneration governance and, consequently, increased pay-performance sensitivity and lower CEO overpayment (Balsam et al. 2016; Clarkson, Walker & Nicholls 2011; Conyon 2014). This is supported by broader board diversity and other regulatory waves over the past two decades (Pandey, Andres & Kumar 2022), supporting the notion of improved CEO remuneration disclosure, resulting in reduced asymmetry in remuneration-related information. This developed over an extended time-frame, dating back to 1934, when CEO remuneration was first disclosed (Frydman & Jenter 2010). Consequently, we included this behavioural factor as a moderator in our model:

Hypothesis 1: Disclosure of voluntary additional RET moderates the relationship between company performance and total CEO remuneration.

The 2007–2009 global financial crisis, remuneration governance reform, and increased goal setting and monitoring

Similar to the South Sea and Tulip Bubbles during the 17th and 18th centuries and the 1929 stock market crash, the 2007 to 2009 global financial crisis was an impactful and idiosyncratic event as the financial losses suffered, undoubtedly altered society's view of the robustness of financial markets (Greenwood et al. 2015). Following the regulatory changes in the early 2000s, this led to another wave of significant revisions to corporate governance regulations and accounting standards (Beber & Pagano 2013; Berger et al. 2014). These were aimed at renewed alignment of agents' and principals' interests through revised agent behaviour and a clear link between company performance and CEO remuneration. These changes to corporate governance regulations, focused specifically on remuneration by identifying additional behavioural insights to spur REMCOs and in turn CEOs into action.

The first behavioural insight focused on a refinement of deferred long-term CEO remuneration, from pure time-based vesting, to being dependent on the company attaining certain PVC (Bettis et al. 2010; Core & Larcker 2002; Devers et al. 2007). Preceding this, the introduction of LTIs was a fundamental shift from a post hoc annual bonus to a longer deferral of awarded incentives. This resulted in a time-based vesting criterion being introduced, in which the CEO needed to be in the employ of the company for an additional period to be awarded and paid the LTIs. However, these attempts at deferral, inflated LTI gains despite poor company performance.

Consequently, SBR vesting criteria shifted from pure time-based holding periods to time PVC (Bettis et al. 2010; Core & Larcker 2002; Devers et al. 2007). This enhances principal-agent alignment by driving agent behaviour to focus on longer-term

and sustained company performance to unlock vesting of the CEO's SBR that has been awarded but payment remains subject to performance criteria being met. This changed REMCOs' operating models, as awarding of SBR now requires up-front disclosure of performance criteria, along with performance evaluation against these criteria which also aligns to the clearer process of goal setting, contracting, and monitoring, as envisaged by Pepper and Gore (2015):

Hypothesis 2a: A minimum CEO shareholding requirement moderates the relationship between company performance and Total CEO remuneration.

The second behavioural insight builds on the original proposal of Jensen and Meckling (1976) to use equity ownership by agents (insider shareholding) to improve interest alignment. It also draws from the efficient contracting hypothesis (Fama & Jensen 1983b) and introduces CEO MSR to manage information asymmetry. Previous shareholding research had focussed on the overall effect of CEO shareholding but had not measured the effect of a significant MSR (Boyd & Solarino 2016; Core & Larcker 2002; Dalton et al. 2007; Martin et al. 2016). We argue that this behavioural factor, when included in the CEO remuneration goal setting and contracting process, increases principal-agent alignment. The CEO is required to retain a significant portion of his wealth invested in the company, and consequently this drives CEO behaviour with shareholders' interests at heart as the CEO and shareholders will share the outcome:

Hypothesis 2b: The use of performance-based LTI vesting criteria moderates the relationship between company performance and Total CEO remuneration.

Conceptual model

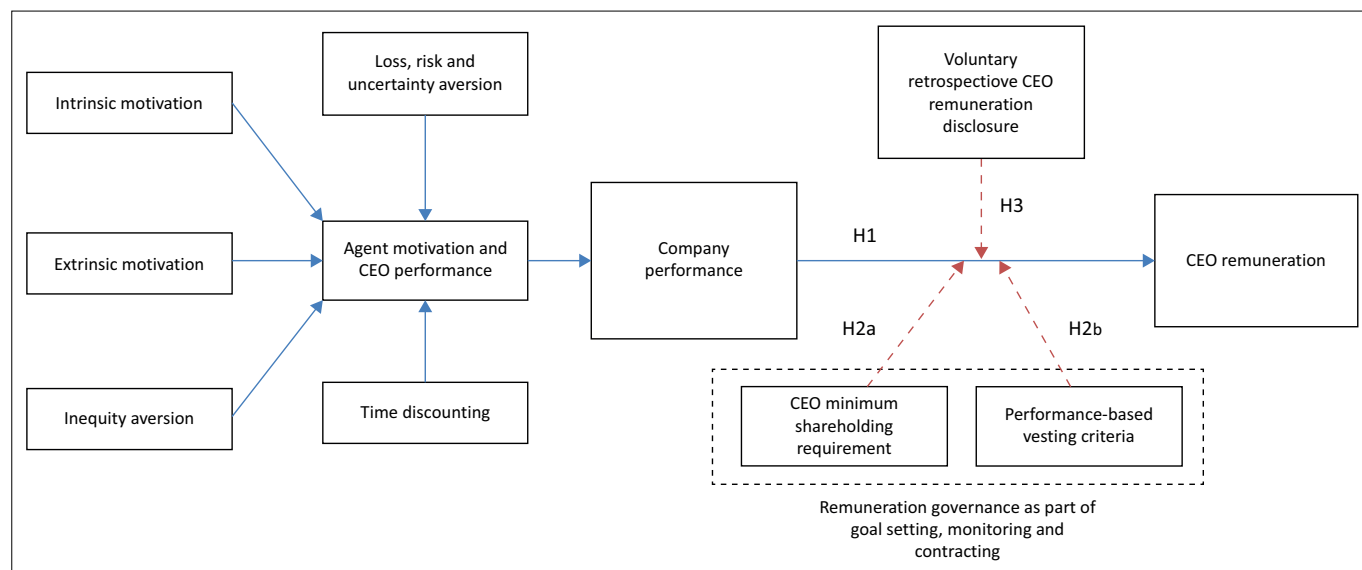
In the present study, it is argued that the behavioural agency model proposed by Pepper and Gore (2015) can be added to. In their model, the process of goal setting, contracting, and monitoring drives agent behaviour as a motivational input. The role of this process was extended by researching its role within remuneration governance in moderating pay-performance sensitivity. The focus was on the role of certain specific behavioural factors used by REMCOs, seen as part of remuneration governance, for driving behaviour. RET, MSRs and PVC are used in the process of setting performance goals, contracting with the CEO, and monitoring performance. Consequently, these factors are set as proxies for how remuneration governance could moderate the relationship between company performance and CEO remuneration. The conceptual model below (Figure 1) depicts the research focus.

In this study, company performance was the independent variable, and Total CEO remuneration was the dependent variable.

Methodology

Research approach, data and design

The study followed a quantitative and deductive approach. The study's universe of analysis was all public companies in



Source: Adapted from Pepper, A. & Gore, J., 2015, 'Behavioral agency theory: New foundations for theorizing about executive compensation', *Journal of Management* 41(4), 1045–1068. <https://doi.org/10.1177/0149206312461054>

CEO, chief executive officer.

FIGURE 1: Conceptual model.

South Africa listed on the JSE consistently from 2006 to 2018 (divided into three sub-periods: 2006–2009, 2010–2014, and 2015–2018). The starting date of 2006 is based on the effective implementation of new SBR accounting standards that prescribed expensing of SBR. It also covers the 2009 global financial crisis and resultant corporate governance regulatory changes such as the 2016 say-on-pay rules. The study's population consisted of the Top 110 companies on the JSE by market capitalisation as of 31 March 2019, representing approximately 95% of the total market capitalisation of the JSE's All-Share Index. Due to several companies being excluded according to the qualification criteria, the JSE Top 100 population was extended to include the largest 110 companies weighted by market capitalisation, and 67 companies remained listed throughout this 13-year period, resulting in 871 datapoints.

Data were gathered from Refinitiv Eikon (previously known as Thomson Reuters) and companies' annual reports and annual financial statements. Chief executive officer remuneration data for South African companies are not entered into any widely accepted database, while researchers in the USA, for example, can access the widely referenced and accepted ExecuComp database. Due to this lack of a credible South African database and given the importance of LTI-related data for research purposes, the data were collected by the researchers by hand from the annual financial statements and/or annual reports. Several iterative phases of master data screening were performed to prevent errors, increase data accuracy, identify duplications, and review outliers for possible incorrect capturing, along with tests for completeness of the dataset.

Independent variable

Shareholders as principals and investors contribute capital and seek commensurate returns on their invested capital by setting

performance targets to align interests (cf. Boyd & Solarino 2016). These targets are typically in the form of financial performance indicators. Consistent with research tradition for studies over extended timeframes, this study used traditional company performance measures in two categories: i.e. market and accounting performance (cf. Boyd & Solarino 2016; David et al. 2010). While market and accounting performance may co-vary, it is argued, and empirically observed in practice, that both streams of measurement isolate different parts of performance and should be used in tandem to examine overall performance (Boyd & Solarino 2016):

1. *Market performance* was measured using total shareholder return (TSR) (cf. Hou et al. 2017), as reported by Refinitiv Eikon, calculated as follows:

$$\bullet \quad \text{TSR} = \frac{[\text{Price}(\text{end}) - \text{Price}(\text{begin})] + \text{Dividends}}{\text{Price}(\text{begin})} \quad \text{where}$$

- $\text{Price}_{(\text{begin})}$ = Share price (SP) at beginning of period
- $\text{Price}_{(\text{end})}$ = SP at end of period
- Dividends = Ordinary dividends paid during the period. [Eqn 1]

2. *Accounting performance* was measured using return on equity (RoE), earnings per share (EPS), earnings before interest and taxes (EBIT), and return on assets (RoA) (cf. Boyd & Solarino 2016; Bussin & Modau 2015), as reported by Refinitiv Eikon, calculated as follows:

$$\text{RoE} = \frac{\text{Net profit after tax}}{\text{Total equity}}$$

$$\text{EPS} = \frac{\text{Headline earnings}}{\text{Total number of shares issued}}$$

$$\text{RoA} = \frac{\text{Net profit after tax}}{\text{Total assets}} \quad \text{[Eqn 2]}$$

Dependent variable

A CEO's total employment-related earnings typically comprise guaranteed pay (GP), STIs, and LTIs. Determinants of how an overall package is structured, include the company's industry, prevailing corporate governance regulations, signaling intent of the REMCO, and strategy elements such as company growth rate, maturity, and size (Bizjak, Lemmon & Nguyen 2011; Boyd & Solarino 2016). For purposes of this study, total CEO remuneration (CEOREL) was the total remuneration awarded to a CEO in a particular reporting period (Bussin & Modau 2015; Deysel & Kruger 2015). It includes GP and both STIs and realised LTIs (Hopkins & Lazonick 2016; Kaplan 2008; Kaplan & Rauh 2010). Guaranteed pay includes a fixed salary, pension benefits, travel benefits, and all other perquisites (Bussin & Modau 2015; Deysel & Kruger 2015).

Long-term incentives are typically deferred incentives granted on a discretionary basis to a CEO. Deferred LTIs include all amounts subject to a suspensive condition, such as the lapse of time (time-based vesting) and/or the satisfaction of certain performance criteria (performance-based vesting) in the form of cash incentives or SBR. Share-based remuneration includes share options, share awards, share appreciation rights, restricted share awards, and related incentive plans (Deysel & Kruger 2015). The initial grant date accounting thereof is based on fair-value accrual, with subsequent re-measurement under certain conditions, while vested value is the fully realised value of the SBR that has been awarded.

Traditionally, most studies that include LTIs in the definition of CEO remuneration have persisted with only using grant date fair value estimates of LTIs when measuring CEO remuneration. However, as pointed out by recent LTIs-specific research, this potentially incorrectly estimates the realised full value of CEO remuneration (Hopkins & Lazonick 2016; Kaplan 2008; Kaplan & Rauh 2010). Therefore, based on the study context of investigating company performance and CEO remuneration *post hoc*, LTIs' values as reported in the annual financial statements for LTIs that have been exercised, and/or have vested and were realised, were used. This is conceptualised as retrospective (RET) CEO remuneration, also grouped as total CEO remuneration and abbreviated as COREL (Hopkins & Lazonick 2016; Kaplan 2008; Kaplan & Rauh 2010). For purposes of clarity, in contrast, prospective CEO remuneration refers to the annual GP and annual STIs, along with *ex ante* LTIs prospectively agreed valued at grant date using a fair value model (Jensen & Murphy 1990).

Analyses

No lagging of variables was proposed, meaning independent and dependent variables were measured concurrently (cf. Martin et al. 2016). This is because firms in South Africa, and globally in line with developments in accounting standards during the study period, standardised reporting to accrue for STIs in the year these relate to. To determine adherence to the

assumptions of multiple regression analysis for panel data, several tests were conducted, including auto- and/or serial correlation, stationarity, homoskedasticity, multicollinearity, as well as normality of the residual distribution. After considering extreme values and the skewness and kurtosis values for the set of independent and dependent variables, variables were Winsorised at the 5% and 95% percentile (cf. David et al. 2010; Gopalan et al. 2014). To evaluate and test hypotheses, *p*-values of less than 0.05 were considered statistically significant.

Various market-based company performance measures (TSR and SP) and accounting-based company performance measures (RoE, RoA, EBIT, and EPS) as independent variables, along with moderators (RET, MSR, PVC), were used to test effects on the continual dependent variable (CEOREL), using moderated multiple linear regression analysis. To rule out alternative explanations for results, the study included control variables that have been shown to influence CEO remuneration: two control variables were identified and controlled for, company size using total assets (Martin et al. 2016); and CEO change, when the CEO changed during a particular year to control for partial-year effects and once-off large bonus pay-outs. Four regression models were built to cover the entire research period and the three sub-periods across the various hypotheses.

Ethical considerations

This article followed the ethical guidelines for research using human participants. The Gordon Institute of Business Science ethical research committee gave written permission to conduct the research in the form of a letter.

Results

The results are presented in Table 1 which depicts the correlations between the variables. Remuneration governance was represented by two moderating variables: MSR and PVC with the third moderating variable being RET. For these analyses a combined regression model was created, and the interaction effects of all the moderating variables on each other, as well as on the dependent and independent variables, were tested.

Hypotheses 1a, 1b, and 2: Total period model (2006 to 2018)

2006 to 2018 model: Results from the panel estimated generalised least squares (EGLS) model indicated that the overall model was significant and the $R^2 = 0.614$ and adjusted $R^2 = 0.599$ were moderate ($F = 41.62$; $p = 0.000$; DW stat = 1.262). In the model, the interaction effects of the three moderators MSR, PVC, and RET were included. The MSR moderator showed a statistically significant moderation effect on the company performance variable measures EPS ($p = 0.005$), RoA ($p = 0.011$), EBIT ($p = 0.027$), and SP ($p = 0.001$). The PVC moderator showed a statistically significant moderation effect on the company performance variable

TABLE 1: Summary of statistically significant moderating effects on the dependent variables.

Hypotheses	TSR				SP				RoA				RoE				EBIT				EPS			
	06-18	06-09	10-14	15-18	06-18	06-09	10-14	15-18	06-18	06-09	10-14	15-18	06-18	06-09	10-14	15-18	06-18	06-09	10-14	15-18	06-18	06-09	10-14	15-18
RET (H1)	0.10	n/a	0.42	0.00*	0.00*	0.00*	0.45	0.00*	0.04	n/a	0.87	0.90	0.44	n/a	0.76	0.57	0.44	n/a	0.79	0.750	0.01	n/a	0.14	0.00*
MSR (H2a)	0.30	0.70	0.08	0.00*	0.00*	0.14	0.53	0.03	0.01	0.41	0.94	0.14	0.35	0.600	0.89	0.82	0.03	0.04	0.24	0.02	0.01	0.05*	0.66	0.01
PVC (H2b)	0.08*	0.54	0.00*	0.08*	0.00*	0.00*	0.00*	0.00*	0.00*	0.83	0.01	0.01	0.92	0.00*	0.51	0.07*	0.00*	0.04	0.00*	0.96	0.00*	0.00*	0.71	0.02

TSR, total shareholder return; SP, share price; RoA, return on assets; RoE, return on equity; EBIT, earnings before interest and taxes; EPS, earnings per share; RET, remuneration disclosure; MSR, minimum shareholding requirements; PVC, Performance-based vesting conditions.

* $P < 0.05$.

measures EBIT ($p = 0.000$), EPS ($p = 0.000$), RoA ($p = 0.004$), and SP ($p = 0.000$). The RET moderator showed a statistically significant moderation effect on the variables EPS ($p = 0.014$), RoA ($p = 0.037$), and SP ($p = 0.001$). The model indicated that 59.9% of the variation in CEO remuneration was explained by company performance.

Hypotheses 1a, 1b and 2: Analysis of the three sub-periods' models

2006 to 2009 model: Results from the panel EGLS model indicated that the overall model was significant and the $R^2 = 0.547$ and adjusted $R^2 = 0.507$ were both moderate ($F = 13.46$; $p = 0.000$; DW stat = 1.515). The PVC moderator showed a statistically significant moderation effect on the *company performance* variable measures EPS ($p = 0.000$), RoE ($p = 0.003$), SP ($p = 0.000$), and EBIT ($p = 0.035$). The MSR moderator showed a statistically significant moderation effect on the variables EPS ($p = 0.045$) and EBIT ($p = 0.044$). The RET moderator was not feasible, as there was only one value for this variable (constant) during this period.

2010 to 2014 model: Results from the panel EGLS model indicated that the overall model was significant and the $R^2 = 0.724$ and adjusted $R^2 = 0.697$ were both strong ($F = 26.61$; $p = 0.000$; DW stat = 1.291). Both the MSR and RET moderators showed no statistically significant moderation effects on any of the independent variables. The PVC moderator showed a statistically significant moderation effect on the *company performance* variable measures EBIT ($p = 0.000$), SP ($p = 0.000$), TSR ($p = 0.000$), and RoA ($p = 0.009$). The model indicated that 69.7 % of the variation in CEO remuneration was explained by company performance which indicates a highly explanatory model.

2015 to 2018 model: Results of the EGLS model indicated that the overall model was significant and $R^2 = 0.737$ and adjusted $R^2 = 0.701$ were both strong ($F = 20.56$; $p = 0.000$; DW stat = 1.428). The MSR moderator showed a statistically significant moderation effect on the *company performance* variable measures of SP ($p = 0.032$), EBIT ($p = 0.021$), TSR ($p = 0.001$), and EPS ($p = 0.021$). The PVC moderator showed a statistically significant moderation effect on the *company performance* variable measures of EPS ($p = 0.0021$), RoA ($p = 0.012$), and SP ($p = 0.001$). The RET moderator showed a statistically significant moderation effect on the *company performance* variable measures SP ($p = 0.000$), TSR ($p = 0.001$), and EPS ($p = 0.000$).

Discussion

This research aimed to advance the behavioural agency theory by empirically demonstrating how remuneration governance in the form of CEO minimum shareholding, performance-based vesting conditions and voluntary additional RET moderates the relationship between CEO remuneration and company performance. Our results demonstrate MSR, PVC and RET to be effective moderators when used by REMCOs to enhance remuneration governance and forge closer alignment between principals and agents.

Retrospective chief executive officer remuneration disclosure

The models showed a statistically significant moderating effect and moderation occurred within two of the three sub-periods (2006–2009: none; 2010–2014: *SP*; 2015–2018: *TSR*, *SP*, and *EPS*), and in *SP*, *RoA*, and *EPS* for the total period. The results confirm the corporate governance-related regulatory waves over the past two decades, focused on improved disclosure, and have resulted in reduced remuneration-related information asymmetry (cf. Connelly et al. 2011). While some REMCOs may wish to increase the volume of disclosure for purposes of obfuscation (Craighead et al. 2004; Hooghiemstra et al. 2017; Laksmana, Tietz & Yang 2012), the results highlight that companies that adopt pro-active, clear, and performance-linked RET disclosure are likely to practise better remuneration governance, due to increased pay-performance sensitivity and therefore lower possible CEO overpayment.

Chief executive officer minimum shareholding requirement

The models showed a statistically significant moderating effect, both for the total period (*SP*, *RoA*, *EBIT*, and *EPS*) and within two of the three sub-periods for certain specified *company performance* variable measures (2006–2009: *EBIT* and *EPS*; 2010–2014: none; 2015–2018: *TSR*, *SP*, *EBIT*, and *EPS*). The specific variable measures when moderation occurred for the total period had some similarities to the sub-periods. For the full period of 2006 to 2018, 14.7% of the dataset had applied this requirement to CEO remuneration contracts. In 2006–2009, only 5% of the dataset had applied MSR as a requirement. However, the figure rose to 27.6% for 2015–2018.

Requiring a significant minimum shareholding reinforces interest alignment, as more than 1 year's earnings are invested in the company. These results confirm the results of previous studies that found that the introduction of PVC improves principal-agent alignment (Bettis et al. 2010; Core & Larcker 2002; Devers et al. 2007). Interpreted in the context of CEO overpayment, the results reveal that companies that adopt MSR are likely to practise better remuneration governance, due to increased pay-performance sensitivity and therefore lower possible CEO overpayment.

Performance-based vesting conditions

The models indicated a statistically significant moderating effect, both for the total period (*SP*, *RoA*, *EBIT*, and *EPS*) and within all three of the three sub-periods for certain *company performance* variable measures (2006–2009: *SP*, *RoE*, *EBIT*, and *EPS*; 2010–2014: *TSR*, *SP*, *RoA*, and *EBIT*; 2015–2018: *SP*, *RoA*, and *EPS*). In 2006–2009, 70% of the dataset had already applied the PVC requirement to CEO remuneration contracts, and, in 2015–2018, the number rose to 81.5%. Therefore, although most companies had already applied a performance-based measure during 2006–2009, the specific performance measures varied over the periods under study. During the last period, 2015 to 2018, following shareholder engagement

driven by the say-on-pay regulation, PVC criteria had converged to include three criteria. Firstly, a return measure, such as *RoE*, secondly, an earnings growth measure anchored to inflation, and thirdly, a market-based value growth measure such as *SP* growth or *TSR* growth and this is evident in the results where moderation occurred.

The results prove that, while there was a statistically significant relationship between CEO remuneration and company performance, the use of PVC in remuneration contracts drives closer pay-performance relationship as LTI gains only occur when performance measures are met.

Conclusion

We demonstrate that the behavioural agency theory (Pepper & Gore 2015) could be expanded by including remuneration governance, measured through MSRs, PVCs and RET, in setting performance goals and its role in moderating pay-performance sensitivity and, by extension, therefore moderating CEO overpayment. When PVC and MSR is introduced in CEO remuneration packages, risk preference alignment occurs (Devers et al. 2007) based on a closer pay-performance relationship (Bettis et al. 2010; Conyon 2014). This further builds on the literature on efficient contracting, which suggests that MSRs improve alignment of CEO remuneration and company performance (Fama & Jensen 1983b), while contributing to reduced CEO overpayment as a result (cf. Kaplan 2008; Kaplan & Ruah 2010). Chief executive officer remuneration is considered excessive when movements do not follow company performance, and the unjustifiable outcomes are likely to be seen as overpayment (Kaplan 2008; Kaplan & Ruah 2010).

Future directions and limitations

Additional moderators may appear as remuneration governance matures in response to both accounting standards and corporate governance regulations that are continually refined. The emergence of additional moderators is likely to be a function of behavioural responses by REMCOs to the latest research incorporated in regulations that enable improved pay-performance alignment. While CEO remuneration as a variable was described and analysed in detail, the CEO as an individual and the effects thereof on remuneration were not considered. This study identified and controlled for one CEO-level item, change in CEO, measured as a change of CEO in a financial year. The study also identified and controlled for a company-level item, company size, measured by revenue. Other aspects that may influence CEO remuneration relate to CEO characteristics, such as tenure, age, gender, large CEO shareholding, and the industry in which the company operates. These variables could be identified and added to the dataset to determine their effect on CEO remuneration and its relationship with company performance.

The research generated certain demographic data on CEOs relating to year of change and shareholding. However,

information such as age, tenure, gender, and race were scoped out for purposes of the research focus. In addition, research was focused on the relationship between CEO remuneration and company performance over time at an overall level. While data were gathered to consider the equitability of the quantum value of CEO remuneration when considering each of the individual elements (being GP, STIs, and LTIs), these were excluded from the primary focus of the study.

The results contrast with claims by the media, politicians, and proxy advisors suggesting that CEOs are paid irrespective of performance (Crotty 2017; McGregor 2018; Rose 2015). The results show that following corporate governance regulatory changes the introduction of behavioural factors such as MSR, PVC and RET, which serve as proxies for remuneration governance, drive different behaviour in CEOs and REMCOs. Introduction of these behavioural factors into remuneration contracts are effective moderators of a closer link between CEO remuneration and company performance that limits possible CEO overpayment.

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Authors' contributions

All authors contributed equally to writing this article.

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Data availability

The data upon which this study was conducted are stored by the authors of this study. Seeing that the data were collected in the form of financial statements and annual reports, no specific participants were identifiable.

Disclaimer

The views and opinions expressed in the article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

References

Almazan, A., Hartzell, J.C., & Starks, L.T., 2005, 'Active institutional shareholders and costs of monitoring: Evidence from executive compensation', *Financial Management*, 34(4), 5–34.

Bailey, B.C. & Peck, S.I., 2013, 'Boardroom strategic decision-making style: Understanding the antecedents', *Corporate Governance: An International Review* 21(2), 131–146. <https://doi.org/10.1111/corg.12008>

Balsam, S., Boone, J., Liu, H. & Yin, J., 2016, 'The impact of say-on-pay on executive compensation', *Journal of Accounting and Public Policy* 35(2), 162–191. <https://doi.org/10.1016/j.jaccpubpol.2015.11.004>

Banerjee, A., Nordqvist, M. & Hellerstedt, K., 2020, 'The role of the board chair – A literature review and suggestions for future research', *Corporate Governance: An International Review* 28(6), 372–405. <https://doi.org/10.1111/corg.12350>

Beber, A. & Pagano, M., 2013, 'Short-selling bans around the world: Evidence from the 2007–09 crisis', *Journal of Finance* 68(1), 343–381. <https://doi.org/10.1111/j.1540-6261.2012.01802.x>

Berger, A.N., Kick, T. & Schaeck, K., 2014, 'Executive board composition and bank risk taking', *Journal of Corporate Finance* 28(C), 48–65. <https://doi.org/10.1016/j.jcorpfin.2013.11.006>

Bettis, C., Bizjak, J., Coles, J. & Kalpathy, S., 2010, 'Stock and option grants with performance-based vesting provisions', *The Review of Financial Studies* 23(10), 3849–3888. <https://doi.org/10.1093/rfs/hhq060>

Bizjak, J., Lemmon, M. & Nguyen, T., 2011, 'Are all CEOs above average? An empirical analysis of compensation peer groups and pay design', *Journal of Financial Economics* 100(3), 538–555. <https://doi.org/10.1016/j.jfineco.2011.02.007>

Bosse, D.A. & Phillips, R.A., 2016, 'Agency theory and bounded self-interest', *Academy of Management Review* 41(2), 276–297. <https://doi.org/10.5465/amr.2013.0420>

Boyd, B.K. & Solarino, A.M., 2016, 'Ownership of corporations: A review, synthesis, and research agenda', *Journal of Management* 42(5), 1282–1314. <https://doi.org/10.1177/0149206316663746>

Bussin, M., 2015, 'CEO pay–performance sensitivity in the South African context', *South African Journal of Economic and Management Sciences* 18(2), 232–244. <https://doi.org/10.4102/sajems.v18i2.838>

Bussin, M. & Modau, M.F., 2015, 'The relationship between chief executive officer remuneration and financial performance in South Africa between 2006 and 2012', *SA Journal of Human Resource Management* 13(1), 1–18.

Clarkson, P.M., Walker, J. & Nicholls, S., 2011, 'Disclosure, shareholder oversight and the pay-performance link', *Journal of Contemporary Accounting & Economics* 7(2), 47–64. <https://doi.org/10.1016/j.jcae.2011.07.001>

Connelly, B.L., Certo, S.T., Ireland, R.D. & Reutzel, C.R., 2011, 'Signaling theory: A review and assessment', *Journal of Management* 37(1), 39–67. <https://doi.org/10.1177/0149206310388419>

Conyon, M.J., 2014, 'Executive compensation and board governance in US firms', *The Economic Journal* 124(574), 60–89. <https://doi.org/10.1111/econj.12120>

Core, J.E. & Larcker, D.F., 2002, 'Performance consequences of mandatory increases in executive stock ownership', *Journal of Financial Economics* 64(3), 317–340. [https://doi.org/10.1016/S0304-405X\(02\)00127-7](https://doi.org/10.1016/S0304-405X(02)00127-7)

Craighead, J.A., Magnan, M.L. & Thorne, L., 2004, 'The impact of mandated disclosure on performance-based CEO compensation', *Contemporary Accounting Research* 21(2), 369–398. <https://doi.org/10.1506/BPCX-D3FC-Y8VY-M541>

Crotty, A., 2017, 'Hush-hush Shoprite deal stuns investors', *Financial Mail*, viewed on 11 May from <https://www.businesslive.co.za/fm/money-and-investing/2017-05-11-hush-hush-shoprite-deal-stuns-investors/>.

Dalton D.R., Hitt M. A., Certo T. & Dalton C.M., 2007, 'The fundamental agency problem and its mitigation', *Academy of Management Annals Vol. 1 No.1*, Kelley School, Indiana University, viewed on 19 February 2023 <https://journals.aom.org/doi/10.5465/078559806>

David, P., O'Brien, J.P., Yoshikawa, T. & Delios, A., 2010, 'Do shareholders or stakeholders appropriate the rents from corporate diversification? The influence of ownership structure', *Academy of Management Journal* 53(3), 636–654. <https://doi.org/10.5465/amj.2010.51469005>

Devers, C.E., Cannella, A.A., Jr., Reilly, G.P. & Yoder, M.E., 2007, 'Executive compensation: A multidisciplinary review of recent developments', *Journal of Management* 33(6), 1016–1072. <https://doi.org/10.1177/0149206307308588>

Deysel, B., & Kruger, J., (2015), 'The relationship between South African CEO compensation and company performance in the banking industry', *Southern African Business Review*, 19(1), 137–169.

Eisenhardt, K. M., (1989), 'Agency theory: An assessment and review', *The Academy of Management Review*, 14(1), 57–74.

Fama, E.F., 1980, 'Agency problems and the theory of the firm', *Journal of Political Economy* 88(2), 288–307. <https://doi.org/10.1086/260866>

Fama, E.F. & Jensen, M.C., 1983a, 'Agency problems and residual claims', *Journal of Law & Economics* 26(2), 327–349. <https://doi.org/10.1086/467038>

Fama, E.F. & Jensen, M.C., 1983b, 'Separation of ownership and control', *Journal of Law and Economics* 26(2), 301–325. <https://doi.org/10.1086/467037>

Frydman, C. & Jenter, D., 2010, 'CEO compensation', *Annual Review of Financial Economics* 2(1), 75–102. <https://doi.org/10.1146/annurev-financial-120209-133958>

García-Meca, E. & Sánchez-Ballesta, J.P., 2009, 'Corporate governance and earnings management: A meta-analysis', *Corporate Governance: An International Review* 17(5), 594–610. <https://doi.org/10.1111/j.1467-8683.2009.00753.x>

Gopalan, R., Milbourn, T., Song, F. & Thakor, A.V., 2014, 'Duration of executive compensation', *Journal of Finance* 69(6), 2777–2817. <https://doi.org/10.1111/jofi.12085>

Goranova, M. & Ryan, L.V., 2014, 'Shareholder activism: A multidisciplinary review', *Journal of Management* 40(5), 1230–1268. <https://doi.org/10.1177/0149206313515519>

Greenwood, R., Landier, A. & Thesmar, D., 2015, 'Vulnerable banks', *Journal of Financial Economics* 115(3), 471–485. <https://doi.org/10.1016/j.jfineco.2014.11.006>

Hooghiemstra, R., Kuang, Y.F. & Qin, B., 2017, 'Does obfuscating excessive CEO pay work? The influence of remuneration report readability on say-on-pay votes', *Accounting and Business Research* 47(6), 695–729. <https://doi.org/10.1080/00014788.2017.1300516>

- Hopkins, M. & Lazonick, W., 2016, *The mismeasure of Mammon: Uses and abuses of executive pay data*, Institute for New Economic Thinking Working Paper Series No. 49, pp. 1–63.
- Hou, W., Priem, R.L. & Goranova, M., 2017, 'Does one size fit all? Investigating pay–future performance relationships over the “seasons” of CEO tenure', *Journal of Management* 43(3), 864–891. <https://doi.org/10.1177/0149206314544744>
- Institute of Directors in South Africa, 2002, *King II report on corporate governance for South Africa*, Institute of Directors in Southern Africa (IoDSA), Johannesburg.
- Institute of Directors in South Africa, 2009, *King III report on corporate governance for South Africa*, Institute of Directors in Southern Africa (IoDSA), Johannesburg.
- Institute of Directors in South Africa, 2016, *King IV report on corporate governance for South Africa*, Institute of Directors in Southern Africa (IoDSA), Johannesburg.
- Jensen, M.C., 1986, 'Agency costs of free cash flows, corporate finance, and takeovers', *American Economic Review* 76, 323–329.
- Jensen, M.C. & Meckling, W.H., 1976, 'Theory of the firm: Managerial behavior, agency costs and ownership structure', *Journal of Financial Economics* 3(4), 305–360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Jensen, M.C. & Murphy, K.J., 1990, 'Performance pay and top-management incentives', *Journal of Political Economy* 98(2), 225–264. <https://doi.org/10.1086/261677>
- Kaplan, S.N., 2008, 'Are US CEOs overpaid?', *Academy of Management Perspectives* 22(2), 5–20. <https://doi.org/10.5465/amp.2008.32739755>
- Laksmana, I., Tietz, W. & Yang, Y.-W., 2012, 'Compensation discussion and analysis (CD&A): Readability and management obfuscation', *Journal of Accounting and Public Policy* 31(2), 185–203. <https://doi.org/10.1016/j.jaccpubpol.2011.08.003>
- Martin, G.P., Wiseman, R.M. & Gomez-Mejia, L.R., 2016, 'Going short-term or long-term? CEO stock options and temporal orientation in the presence of slack', *Strategic Management Journal* 37(12), 2463–2480. <https://doi.org/10.1002/smj.2445>
- Martin, G.P., Wiseman, R.M. & Gomez-Mejia, L.R., 2019, 'The interactive effect of monitoring and incentive alignment on agency costs', *Journal of Management* 45(2), 701–727. <https://doi.org/10.1177/0149206316678453>
- McGregor, J., 2018, 'Elon Musk's pay deal could theoretically be worth \$55.8 billion – But he could also get nothing', *Washington Post*, 23 January, viewed from https://www.washingtonpost.com/news/on-leadership/wp/2018/01/23/elon-musks-new-pay-package-could-theoretically-be-worth-55-8-billion-but-none-of-its-guaranteed/?noredirect=on&utm_term=.d0ba5532533f.
- Morck, R.K., Shleifer, A., & Vishny, R.W., 1988, 'Management ownership and market valuation: An empirical analysis', *Journal of Financial Economics*, 20(1–2), 293–315.
- Pandey, N., Andres, C. & Kumar, S., 2022, 'Mapping the corporate governance scholarship – Current state and future directions', *Corporate Governance: An International Review* 31(1), 127–160. <https://doi.org/10.1111/corg.12444>
- Pepper, A. & Gore, J., 2015, 'Behavioral agency theory: New foundations for theorizing about executive compensation', *Journal of Management* 41(4), 1045–1068. <https://doi.org/10.1177/0149206312461054>
- Rose, R., 2015, 'Fine print: Edcon's tasteless parting gift', *Financial Mail*, 09 July, viewed from <http://www.financialmail.co.za/opinion/fineprint/2015/07/09/fine-print-edcons-tasteless-parting-gift>.
- Wiseman, R.M. & Gomez-Mejia, L.R., 1998, 'A behavioural agency model of managerial risk taking', *Academy of Management Review* 23(1), 133–153. <https://doi.org/10.2307/259103>