

https://dspace.org/

# The relationship between CEO compensation and various performance indicators in South Africa

**Ndofirepi, Tadiwanashe Phillip**

**2015**
http://hdl.handle.net/10539/18826

Downloaded from a DSpace repository. https://dspace.org/






# The Relationship between CEO Compensation And Various Performance Indicators in South Africa

**By :**

**Tadiwanashe Phillip Ndofirepi**

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in Finance and Investment.

**Supervisor: Dr Thabang Mokoaleli-Mokoteli**

**March 2015**

# DECLARATION

I declare that this research report is my own unaided work, except where otherwise indicated and acknowledged. It has not either in whole or part, been submitted at any other University or institution for degree purposes or examination.

Tadiwanashe Phillip Ndofirepi

Signed at ……..……On the …….. Day of March 2015

# DEDICATION

I dedicate this research to CHRIST JESUS who is GOD.

# ABSTRACT

This study examines the relationship between the remuneration of CEOs and the performance of firms in South Africa. The purpose of the research is to empirically observe developments post the King III corporate governance report that suggested that remuneration be closely associated with compensation. The research areas include the risk and reward relationship in three different compensations forms; salary, bonus (cash) and total remuneration (salary plus bonus). It excludes stock options awarded and the level of compensation. The performance measure used were both market and accounting related.

The results are drawn out of a sample of 119 JSE listed firms which sum up to 714 firm-years observed. As in previous studies the multiple regression model was used on estimating panel data, allowing the control of unobserved company related effects.

The results suggest that of all the performance measures ROA is the only one positively related to CEO remuneration, i.e. fixed salary and total remuneration although it is not related to the bonus portion. ROE is negatively related to all fixed salary, and shows that a large increase in ROE leads to a large decrease in CEO basic/fixed pay. Only the preceding accounting components of performance were related to CEO remuneration, stock price (RET) the market measure for performance does not explain any changes in the studied compensation forms. This result is not unexpected given that option awards were not included in the study. The largest coefficients and positive levels of significance were found on the relationship between international diversification and CEO compensation although it was not the main thrust of the study. Therefore this confirms that performance is not the most important determinant in the changes in CEO remuneration in South Africa.

# ACKNOWLEDGEMENTS

I am grateful to my LORD GOD for putting me on a purposeful path and giving me the foundational understanding for studying MMFI. My appreciation also goes to my supervisor Dr. Thabang Mokoteli for being available to give advice and guidance, which came with amazing patience. To my parents Doctors Amasa and Elizabeth what an amazing inspiration you have been through my life, thank you for the financial and moral support. Lindah Tafadzwa my girlfriend thank you for being there regardless of the distance, GOD bless you. To Nyasha Mhike and Tafadzwa Glory you inspire me to work harder. I want to acknowledge my mentor as well T.T. Mudekunye, such an inspiration.

Lastly to my friends, colleagues, co-workers in CHRIST, and MMFI fellows a big thank you.

**TABLE OF CONTENTS**

**DECLARATION** ..... i

**DEDICATION** ..... ii

**ABSTRACT** ..... iii

**ACKNOWLEDGEMENTS** ..... iv

**LIST OF TABLES** ..... vii

**CHAPTER 1 INTRODUCTION** ..... 1

**1.1 Introduction** ..... 1

**1.2 Context of the Study** ..... 1

**1.3 Research Problem** ..... 3

**1.4 Research Objectives** ..... 4

**1.5 Research Questions** ..... 4

**1.6 Research Gap** ..... 4

**1.7 Organization of the Study** ..... 5

**Chapter Summary** ..... 5

**CHAPTER 2 LITERATURE REVIEW** ..... 6

**2.1 Introduction** ..... 6

**2.2 The History of the Agency Problem and Executive pay** ..... 6

**2.3 Compensation and Corporate governance** ..... 7

**2.4 Corporate Financial Scandals and Executive Compensation** ..... 8

**2.5 Factors influencing CEO compensation** ..... 9

***2.5.1 Board structure*** ..... 9

***2.5.2 CEO Tenure*** ..... 9

***2.5.3 Shareholding structure*** ..... 10

***2.5.4 Size of the Firm*** ..... 10

***2.5.5 Industry Effects, Diversification and International Operations*** ..... 10

***2.5.6 Other Factors*** ..... 10

**2.6 Firm earnings, stock performance and CEO compensation structure** ..... 10

**Chapter Summary** ..... 12

**CHAPTER 3 RESEARCH METHODOLOGY** ..... 13

**3.1 Introduction** ..... 13

**3.2 Data, Sample and Data Sources** ..... 13

**3.3 Research Design** ..... 14

***3.3.1 Empirical Hypothesis*** ..... 16

**Chapter Summary** ..... 17
**CHAPTER 4 PRESENTATION OF RESULTS** ..... 18
**4.1 Introduction** ..... 18
**4.2 Descriptive Statistics** ..... 18
**4.3 Results** ..... 21
***4.3.1 Regression Diagnostics*** ..... 21
***4.3.2 The relationship between CEO compensation and corporate performance*** ..... 22
**Chapter Summary** ..... 26
**CHAPTER 5 CONCLUSION AND RECOMMENDATIONS** ..... 27
**5.1 Introduction** ..... 27
**5.2 Discussion** ..... 27
**5.3 Conclusion** ..... 28
**5.4 Recommendations for Future Research** ..... 28
**Chapter Summary** ..... 29
**APPENDIX 1** ..... 30
**REFERENCES** ..... 31

# LIST OF TABLES

Table 1 Summary of Variables ..... Page 15

Table 2 Descriptive Statistics ..... Page 18

Table 3 Descriptive Statistics (2) ..... Page 19

Table 4 Descriptive Statistics (3) ..... Page 20

Table 5 Pearson Correlation Coefficient Matrix ..... Page 21

Table 6 Regression Results ..... Page 22

# CHAPTER 1 INTRODUCTION

## 1.1 Introduction

This chapter lays out the context of the study, objectives of the study, research problem, research questions, the research gap, as well as the outline of the study. The chapter is arranged as follows; Section 1.1 Introduces the study, Section 1.2 discusses the context of the study, Section 1.3 states the research problem, Section 1.4 outlines the objectives of the research, Section 1.5 states the research questions, Section 1.6 lays out the identified research gap and Section 1.7 outlines briefly the organisation of the study.

## 1.2 Context of the Study

In a labour mature and conscious business environment, great amounts of attention tend to be focused on the remuneration of CEO's and executives of listed and unlisted companies alike. Particular interest has grown on the structuring of compensation packages since King III report recommended the publication of executive remuneration. The patterns that have since emerged show that CEO compensation has risen yearly on the basis of matching market rates. The aim of this study is to evaluate whether the changes in corporate governance monitoring frameworks have resolved agency conflicts through varied adjustments in Pay-for-Performance model of remuneration to CEOs in South Africa.

A presentation to the World Economic Forum ranked South Africa number one in corporate board efficacy and second in the protection of minority shareholders' interests in the world (Schwab & Sala-i-Martín, 2012). The above issues speak strongly to the agency problem and if the rankings are taken out of context then the agency problem is not existent or is insignificantly minimal in South Africa. Much has been discussed academically and publicly about the determinants and size of CEO compensation.

Early studies widely agree that incentives tend to alleviate agency problems between managers and shareholders through corporate governance mechanisms (Agrawal & Knoeber, 1996; Baker *et al*., 1988; Fama, 1980). Literature post the 2008-2009 financial crisis suggests that to fully mitigate agency conflicts CEO compensation must be attached to the long-term results for shareholders as well other providers of capital and stakeholders (Bebchuk & Fried, 2010; Bebchuk & Spamann, 2009). In industry wide wage strikes and talks in South Africa, politicians and workers have highlighted CEO salaries and incentives as one of their justifications for demanding higher pay. The strikes lead to stops in production and increased

costs which eat into shareholder's economic value (Seccombe, 2014). In turn shareholders have not swallowed their dissatisfaction; they are at loggerheads with executives over pay policy. An example being ABSA's Maria Ramos who was awarded a R28-million package despite a close to 20% fall in share price (Barron, 2014). In this report, it is observed as well that shareholders have limited power to intervene, 18.4% of the shareholders voted against ABSA's remuneration policy yet the vote itself did not translate into a review of compensation program. In a separate case the recent collapse of African Bank has raised a stink as anecdotal evidence shows that the CEO and other executives of the bank had from year to year been rewarded huge packs despite the board being largely dominated by independent directors. There is evidence that shareholders have overtime failed to constrain compensation arrangements by any means be it voting, litigation or equity-holder resolutions (Barris, 1992; Bebchuk & Fried, 2006).

Performance based remuneration through incentives has grown over the years compared to executive's basic salary but this has not been an antidote to agency conflict (PWC, 2013). In this annual corporate governance bulletin PWC criticise the Pay-for-Performance model and state that it has "failed" in South Africa. They suggest a new model of executive remuneration developed by PWC in the UK. The problem with the model they suggest is that it originated in developed market context and may not be appropriate in an emerging market as the characteristics and needs of the South African economy are different. Overall, it seems like South African companies need a new look at the CEO compensation model that will suit the needs of both the executives and the shareholders. Remuneration committees composed primarily of independent directors are tasked with designing, implementing and appraisal of compensation of compensation packages for CEOs. The independence of these directors is put to question as well because another agency problem will then emanate from remuneration of these independent directors and the structure of the remuneration committee itself (Bebchuk & Fried, 2003; Daily *et al*., 1998).

Against a pre-crisis warning by Bebchuk and Fried (2006) post world financial crisis studies agreed that both bonus and equity based compensation had led CEOs to concentrate on short-term firm performance. Bebchuk *et al*. (2010) in an investigation on the Lehman Brothers case revealed that there was rampant cashing out of equity options by executives before the slump of stocks, incentives prepaid to directors in previous years could not be recouped in the earnings of 2008-2009. Pre-crisis cash out benefits were larger than stock options losses made by CEOs during the post-crisis through stock slumps (Bhagat & Bolton, 2014). Based on this American

context, it is not inconceivable that that in South Africa too, CEOs compensation structures have short-term outlook.

Sharp and Aling (2013) in a study of CEO remuneration in South Africa challenge trade unions and politicians as not being considerate of the very basis for CEO compensation, corporate profitability and argue that CEO compensation should reflect corporate financial performance. In attempting to further establish the cause for higher executive pays they concluded that a combination of new technologies and employment equity had led to an artificial shortage of qualifying CEOs. They however, overlooked corporate governance mechanisms which are said to derive and maintain effective and fair executive compensation.

The study of agency conflict has been of greater interest to consultancy firms as they review corporate governance issues in South Africa, with little work being done academically to assess the affairs which has resulted to rising voices of descent and dissatisfaction in this area. With the above theoretical and event foundations, the study hopes to bring home a South African context of the relationship between CEO compensation and firm accounting and stock price performance and corporate governance issues that come into this nexus.

### 1.3 Research Problem

Many cases have been identified in which CEO pay has risen considerably whilst the companies were performing poorly and stock prices were dropping. PIC which controls 11% of stocks on the JSE has highlighted that it has blocked remuneration resolutions of 23 listed firms in 2014 alone as most remuneration policies had been set against attainable performance targets. Executives earning millions in South Africa claim that they do not have enough financial resources to quell labour unrest which continues to erode shareholder value in downtime (Barron, 2014; Seccombe, 2014). Faulkender *et al*. (2010) state that many observers believe that top level executive compensation is not sufficiently linked to long-term corporate performance. Crotty and Bonorchis (2006) found that since the announcement by the JSE in 2002 that in terms of King II report, executive pay should be disclosed publicly, a sharp upward movement in CEO's salaries has been seen which cannot be aligned to performance of the firm. They speculate that this rise may be adjustments by firms' remuneration committees to match what other CEO's earn in the market. This leads researchers to question the structure, devices and mechanisms of optimal contracting based compensation from both the shareholder and executives' view which is meant to address agency conflict. Thus, it is not very clear whether

CEOs are over or under compensated in particular relation to performance in terms of both market and accounting performance.

This study aims to evaluate the relationship between CEO pay and firm performance in South Africa and whether the executives are compensated in line with the risk they take in making discretionary decisions by testing whether accounting and stock price performance relates to their pay. This pay-for-performance relationship is important to private investors, financial economists, governments, churches, private institutions, trade unions, pension funds, asset managers etc.

## 1.4 Research Objectives

The objectives of this research are stated as follows

- To assess the relationship between CEO compensation and company accounting and stock price performance for companies listed on the JSE.
- To evaluate and analyse the relationship between the form/structure of CEO compensation and firm performance.

## 1.5 Research Questions

- Is there a relationship between CEO compensation and company accounting and stock price performance exist in companies listed on the JSE?
- Does the form/structure of CEO compensation affect firm performance?

## 1.6 Research Gap

Existing literature encompasses mixed findings in the relationship between CEO remuneration and company performance. Boschen and Smith (1995) were of the opinion that impact of firm performance on CEO compensation, while persistent, is not permanent. In their later study Boschen *et al*. (2003) revealed that CEO's long-run financial gain from good stock price performance is positive and significant while no long-run relationship was found between accounting performance and compensation. In South Africa, the literature indicates that there is no consensus in terms of whether there is a relationship between CEO pay and firm performance? (Scholtz & Smit, 2012).

Ozkan (2011) found that there was no significant relationship between firm performances - both accounting and stock price, and also concluded that corporate governance initiatives were

not totally effective. It is on the backdrop of such literature that this study seeks to add on to the existing literature on the agency conflicts and the corporate governance mechanisms and devices that are created to minimise these by checking whether these mechanisms are a curse or piety in the pay-for-performance model of CEO compensation in South Africa.

This study will be significant in that it will attempt to clarify the position of the pay-for-performance model in CEO compensation post implementation of King II & III Reports and the Companies act of 2008. This study will assess composition of CEO remuneration in SA and its effects on firm performance. This study seeks to make a contribution in outlining the possible areas of note in the remuneration packaging and agency conflict resolution that have been overlooked in the King reports. The trend of the pay-for-performance model will be assessed as well. The study carefully brings in the dynamics of accounting performance because it filters out common noise in stock price performance. In accounting performance there is indeed noise in terms of manipulation though it is noted that it is not as the noise in stock price performance (Boschen *et al*., 2003).

## 1.7 Organization of the Study

Chapter 2 reviews the literature and highlights gaps on CEO compensation and firm performance extant literature. Chapter 3 outlines the research methodology including data, data sources and research design. Chapter 4 presents and analyses the results of the study. Chapter 5 l discusses the results and concludes as well as makes recommendations and suggestions for further study.

## Chapter Summary

Remuneration of executives and CEOs is topical in South Africa and should be debated constructively. The chapter outlined the context of the study and presented the objectives and questions. The research problem, gap and outline I also laid out. The next chapter presents the review of the literature.

# CHAPTER 2 LITERATURE REVIEW

## 2.1 Introduction

The study of executive compensation and performance is underpinned by the agency theory, which is finance theory developed to explain the divergences of interest between shareholders and corporate managers (McColgan, 2001). The theory is the original work of Jensen and Meckling (1976) who proposed the theory of the firm based on conflicts of interest between different contracting parties. The literature has been developed overtime to explain both the nature of these conflicts and means by which they may be resolved.

The aim of this chapter is present the systematic literature relating to the agency theory and other literature related to CEO performance and firm performance. The chapter is organised as follows; Section 2.2 reflects on the agency theory, Section 2.3 discusses CEO compensation and corporate governance. Section 2.4 presents corporate financial scandals and CEO compensation. Section 2.5 presents factors that influence CEO compensation.

## 2.2 The History of the Agency Problem and Executive pay

In the early history of the institutionalised company, the manager's job was merely to administer the movement of services, information and good. This effectively changed with the establishment of the first joint stock exchange in 1856 introducing a discretionary manager who watched over the stockholder's interest (Scholtz & Smit, 2012). In a study of the theory of the firm Berle and Means (1932) found that public issue of shares resulted effectively in no single shareholder controlling the firm and directors had to exercise complete discretion. It is this managerial power and discretion when abused by the agents to their own benefit at the expense of the shareholder that modern financial economists call the "agency problem".

The construction of compensation contracts for CEOs and executives alike should represent a financial incentive for management to grow the company in value to align the interest of shareholders and management. The formal work on agency theory and its emergence is rooted in the work of Jensen and Meckling (1976) who in their development of the theory of the firm (where the manager personifies the firm) are of the opinion that greater levels of financial incentives ought to eventually lead to higher company performance there by reducing the conflict of interest that the agent has because it puts her in the position of a residual risk bearer.

Executives as top agents are expected to use their specialised skills and knowledge on firm resources to create the highest possible value for the principal who delegates the responsibility of managing the firm (Finkelstein & Hambrick, 1988; Gómez-Mejía & Balkin, 1992). In a study of firms over an effective 688 firm years since 1948, Boschen and Smith (1995) concluded that to mitigate information asymmetry of an agent's actions/talents, current pay has to be linked to multiple periods. At the time this study was conducted compensation response to performance happened in years to come (because of the introduction of long term reward contracts) hence there is a significantly high likelihood that dynamic effects could be omitted, resulting in misleading analysis of pay-performance sensitivity.

As a result of dispersed ownership, publicly listed firms do not have the ability to contract with executives at arm's length, do not have a significant say in the way they are remunerated and would be interested in reducing the relative attention gathered by their pay and the way in which it might result shifting attention from their performance[1] (Bebchuk & Fried, 2003). In an attempt to resolve the agency problem studies have suggested "the optimal contracting approach" which they seen later as part of the agency problem itself.

### 2.3 Compensation and Corporate governance

Several policy documents have been developed on the conduct of companies with regards to CEO compensation. The notion of remuneration for performance is developed and discussed in popular corporate governance tools including South Africa's King reports of 1994, 2002 and 2009; the Cadbury Report of 1992 and Greenbury Report of 1995.

The Cadbury Report of 1992 sets the tone in the introduction of independent directors to bring on autonomous judgement paying particular attention on performance, resources and standard of service. Cadbury also recommends the full reporting of all executives' emoluments including separate reports on highest paid executive, salary based pay and performance related compensation. The Greenbury (1995) report is specifically designed to recommend and give guiding policies on terms of service for executives with particular attention paid to compensation policies. Greenbury recommends best practice in determination and disclosure of executives' remuneration in order to avoid conflict of interest by setting up remuneration committees which constitute of non-interest Non-Executive directors. The current guiding

[1] "The firm is disciplined by competition from other firms, which forces the evolution of devices for efficiently monitoring the performance of the entire team and of its individual members. Individual participants in the firm, and in particular its managers, face both the discipline and opportunities"(Fama, 1980)

document in the South African corporate governance is the King III (2009) report which recommends that the board should determine the remuneration of the executive directors in line with the remuneration policy and also requires the disclosure of such compensation in terms of the Companies Act. The report adds that companies should remunerate directors and executives fairly and responsibly, i.e. aligning remuneration policies to company strategy and individual performance.

In an investigation of panel data in the UK, Ozkan (2011) found that the Greenbury report was not totally effective and not adequately implemented in UK firms, but noted that the disclosures ushered by the Hampel (1998) report made it possible to analyse total compensation rather than the cash only component of compensation. The question that then arises is: Have our corporate governance institutions done enough to ensure CEO and executives' fair and responsible remuneration especially in emerging markets like SA?

The Institute of Directors (IOD) in South Africa have adopted King Codes and have implemented the codes through the JSE listed firms as these tend to have more agency conflict issues due to their public ownership nature. The detailed information about JSE listing requirements and Companies acts are contained in appendix 1.

## 2.4 Corporate Financial Scandals and Executive Compensation

In the recent past, the world experienced corporate scandals that triggered the collapse of large and well-known corporations such as Enron, WorldCom and Parmalat resulting in massive destruction shareholder wealth as well as damage to other stakeholders (Faulkender *et al*, 2010). Some schools of thought blame the rise in financial scandals to ineffective remuneration policies employed by boards in corporations. For example, Bebchuk and Fried (2006) state that the absence of effective arm's length dealing under today's corporate governance system has been the primary source of problematic compensation arrangements.

Crocker and Slemrod (2007) remark that many corporate boards dedicate far more time and energy to compensation compared to the time that is spent assuring the veracity of the company's financials. They further suggest that company boards should not treat these two concerns as unrelated issues, rather an optimal compensation scheme should be designed with an eye on deterring misleading reporting by the firm's officers. In fact, Faulkender *et al* (2010) state that many observers believe that top- level executive compensation is not sufficiently linked to long-term corporate performance. There are several cases in which executive pay are

companies rose dramatically even though the companies were doing poorly and stock prices were plummeting.

## 2.5 Factors influencing CEO compensation

There are various factors that the literature link to CEO compensation including board structure, CEO tenure, shareholding structure, size of the firm, and the industry in which the firm is operating. The literature related to each of these factors is reviewed below.

### *2.5.1 Board structure*

The corporate governance reports focused interest on the company board's remuneration policy, monitoring role and underlined the input that non-executive directors can make to this development (Cadbury, 1992; Greenbury, 1995; Hampel, 1998; King, 2002). Larger boards and less independent non-executive directors were generally associated with higher CEO remuneration packages (Coakley & Iliopoulou, 2006; Core *et al*., 1999).

On the other hand, Ozkan (2007) suggests that existence of non-executive directors does not result in monitoring as advocated for and indicated by previous reports and studies. In his more recent study, Ozkan (2011) finds that, non-executive directors' share ownership has a negative and significant impact on CEO compensation level suggesting that ownership can provide incentives for non-executive directors to be more active in monitoring CEO compensation packages. In South Africa a study by Crotty and Bonorchis (2006) found that, since JSE announcement in 2002 that executive pay be disclosed publicly, a sharp upward movement in CEO's salaries has been seen which is not be aligned to performance of the firm but rather to adjustments by firms' remuneration committees to match what other CEO's earn in the market.

The monitoring functions of the board are set up so that the principals' and agents' interests are aligned and are not self-serving to the managers hence the monitoring practices should correlate with firm performance.

### *2.5.2 CEO Tenure*

Time horizon problems in determining CEO compensations may lead to ambiguity (Ozkan, 2011). Thus, on one hand CEOs with longer tenure might have more power to propose their compensation packages while on the other might also have larger share ownership from the previous share awards and options. A study in the UK revealed that CEOs had a low level tenure due poor performance in share price and dividend income than for accounting profits (Hillier *et al*., 2005).

### *2.5.3 Shareholding structure*

There is anecdotal evidence that institutional investors have become more active in their monitoring role. Hartzell and Starks (2003) and Sapp (2008) find that institutional investors, through large shareholdings can exert greater pressure and play an active role in crafting and influencing executive compensation. A study by Ozkan (2007) found that institutional ownership has a significant and negative impact on the level of CEO compensation in the UK.

### *2.5.4 Size of the Firm*

A positive correlation is observed between remuneration of an executive and the size of the organisation (Finkelstein & Hambrick, 1997; Rosen, 1990). Wang *et al*. (2013) affirm this by stating that, "CEOs in larger firms receive more total compensation than CEOs in smaller firms". In asserting this, Rosen (1990) assumes that talent is distributed proportionately to hierarchy so that more capable persons are higher placed there by resulting in higher CEO pay as the span of control grows larger.

### *2.5.5 Industry Effects, Diversification and International Operations*

Multinational corporations tend to diversify into international operational units and are more profitable than local units, it follows that it is difficult to monitor executive compensation in different markets because diversification affects the complexity of the operating environment (Carpenter *et al*., 2001). In mitigating this monitoring challenge, firms can use long-term incentive plans in place of fixed pay (Jensen & Murphy, 1990).

Duru and Reeb (2002) note that industrial and international diversification tends to fuel the agency problem as it gives executives remuneration power and a larger span of control increasing business risk, operational complexity propagating monitoring difficulties which can cause reduction in profit and subsequent loss in value . In contrast Wang *et al*. (2013) found that a greater level of industrial diversification led to lower relative compensation due to the dispersion of optional risk.

### *2.5.6 Other Factors*

Sharp and Aling (2013) fingered immigration controls for high skilled foreigners and new technologies in South Africa as having led to an artificial shortage of company executives which has fuelled CEO remuneration.

## 2.6 Firm earnings, stock performance and CEO compensation structure

The constitution of CEO pay is a solution to the agency problem that is expected to result in better firm performance (Jensen & Murphy, 1990). What kind of performance one would ask?

Early research indicat+es that size mattered rather than profitability as CEO compensation was found to be more closely related to sales which is an indicator of firms that put much importance in size (Roberts, 1959). In following empirical research (Deckop (1988); Lewellen and Huntsman (1970)) concur that profit for compensation had become more prominent with firms.

Executive remuneration may take any of these four forms or a combination; basic salary, long-term incentive plans (LTIP's), executive stock option schemes and accounting-based performance bonuses these are all linked to firm earnings and stock price performance (McColgan, 2001). While Baker *et al*. (1988) argued that the level of pay is industry determined, but the way in which managers worked was a result of the composition of the remuneration contract hence structure matters in management's efficient resource allocation. In concurrence McColgan (2001) states that management are supposed to get enough motivation from comprehensive contracts of incentive in order to efficiently maximise value for shareholders.

In an interesting examination Banker *et al*. (2013) found that although current salary (cash component) was related to all measures of past performance, the bonus component was negatively associated with past performance measures. This they attributed to the fact that past performance shows an executive's future ability reducing the severity of the adverse selection problem. This results in higher salary (cash component) because unobservable ability is predictive in the future. Jayaraman and Milbourn (2012) found that there is an incremental factor in CEO's pay-for-performance sensitivity with respect to stock prices as stock liquidity increased. Further they observe that as stock liquidity increases, the equity based compensation increases as well while cash based compensation declines in aggregate compensation. Their findings are in concurrence with Bushman and Smith (2001) and Fang *et al*. (2009) who observe an increased focus on equity type compensation.

Accounting performance and stock price performance have different effects on CEO compensation. Boschen *et al*. (2003) found that unexpectedly good accounting performance is initially related to higher CEO compensation, this initial increase is offset by lower pay in the future. However, they found that CEO receives a substantial reward over the long run for an unexpected increase in stock price performance. In a more recent paper, Wang *et al*. (2013) also noted the incremental usefulness of accounting based performance measures over market based ones in CEO remuneration contracting.

**Chapter Summary**

This chapter assesses previous literature on the relationship between CEO compensation and accounting and stock price performance. Most of the research although comprehensive tends to relate to developed nations scenarios with inferences for frontier and emerging markets being difficult to be made using most of these studies. The academic research done locally has been mostly theoretical and aggregative. The literature largely supports the notion of correcting the agency problem through the pay for performance relationship. Chapter 3presents the methodology used to assess this relationship in South Africa is presented.

# CHAPTER 3 RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter presents information about the sample and data sources used. It also outlines the research design in evaluating pay-performance sensitivities. The experimental models used for testing the relationship are discussed under research design. The chapter is organised as follows: Section 3.2 presents data and data sources. Section 3.3 discusses experimental model design using different measures including dividend and risk adjusted models. Chapter summary concludes the chapter.

## 3.2 Data, Sample and Data Sources

Information on CEO compensation is obtained from *Bloomberg ESG* under the compensation C-Suite Tab of the listed firms together with earnings and market value information.[2] It is notable, however, that insufficient disclosure continues to pest the JSE even though that regulations clearly stipulate that CEO remuneration information should be publicly disclosed. Suggestions by Grinstein *et al*. (2011) are that this signals ill corporate governance and is frequent where there firms are trying to hide the reporting of perks.

The sample selection is restricted to all firms listed on the JSE, and the research period is six years between 2008 and 2013 inclusive. The length of the research period was influenced by the amount of compensation data available.[3] The compensation measure includes salary (fixed component of total compensation) and bonus based compensation (. Performance measures to be used are ROE, ROA, and stock returns. As in Ittner *et al*. (2003) equity based compensation as past performance incentive is used by forward looking shareholders who would want to continue using shareholder return (RET) in the determination of CEO compensation as ROE and ROA tend to look backward.

For firms to be included in the final sample the following conditions have to be met. First share price information on a firm has to be available for a firm covering the six year period from 2008-2013. Firms that faced changes in CEO's are excluded only on the year that he CEO left, this is because normally a leaving executive receives a golden handshake which is not

[2] Note that due to information asymmetry compensation data in South Africa can only be divided into salary and bonus components without specifying well whether this would be in form of share options, cash or any other form of compensation. This invariably affects the quality of the research.

[3] The study is only relying on published compensation data which are post the King II regulation of 2002, the data shows that a significant number of firms started implementing the King recommendations in 2005 and beyond.

separately reported at that same instance an incoming executive receives a signing bonus as well. Assessing a multi-period agent's salary allows for assessment of full dynamics of the executive compensation. Firms listed during the year, firms reporting in foreign currency (where the rand is the local currency), firms where executives are paid by another company and firms with missing data will be deleted from the sample as in Matolcsy & Wright (2011). Resultantly 119 firms totalling 714 firm-years were observed in the study.

### 3.3 Research Design

The total sample is divided into two components of executive compensation for the regression; companies that provide cash and equity based remuneration, and companies that pay cash only to the CEO.[4] It is however notable that reporting of equity based remuneration on the JSE of stock related compensation remains opaque despite effort in legislation and regulation to address the availability of such information to the investing public.

Control variables are used to control for CEO duality, gender, tenure and age. Literature supports the control of these variables and particularly so with horizon related predictors (age and tenure) because the older the CEO the higher likelihood that they will structure their own salary. An incumbent executive is more treasured than a new one as the firm tends to understand the agent's abilities better. Resultantly horizon variables (tenure and age)'s relation with firm performance is expected to be ambiguous (Banker et al., 2013; Murphy & Zabojnik, 2007; Ryan & Wiggins, 2001).

For the stock returns of each company yearly percentage change in market value of common stock is calculated using the formula:

$$R_t = \frac{P_t + \mathrm{DPS}_t}{P_{t-1}} - 1$$

Where; $R_t$ is the return on the share in period t

$P_t$ is the share price in period t

$\mathrm{DPS}_t$ is the dividends per share in period t

$P_{t-1}$ is the share price in period t-1

The share price is adjusted for effects of capitalisation issues, share splits and capital reductions. The returns are adjusted for dividends reinvested as well.

[4] This separation allows us to assess the sensitivity of different remuneration contracts to performance.

A multiple regression model consistent with Deckop (1988); Ozkan (2011); Wang *et al*. (2013) is employed to assess the economic determinants of CEO compensation. The model is specified in the equation below.

$$\log(\boldsymbol{comp}_{i,t}) = a_0 + a_1\mathbf{Ten}_{i,t} + a_2\mathbf{Age}_{i,t} + a_3\mathbf{Gen}_{i,t} + a_4\mathbf{Dua}_{i,t} + a_5\mathbf{INTD}_{i,t} + a_6\mathbf{Size}_{i,t} + a_7\mathbf{INSTown}_{i,t} + a_8\mathbf{RET}_{i,t} + a_9\mathbf{ROE}_{i,t} + a_{10}\mathbf{ROA}_{i,t} + \varepsilon_{i,t}$$

**Where,**

$a_0 = the\ constant\ of\ the\ regression\ equation$

$a_1, a_2, a_3, a_4, a_5, a_6, a_7, a_8, a_9, a_{10} =$ **coefficient of** Ten, Age, Gen, Dua, INTD, Size, INSTOWN, RET, ROE, ROA

$\varepsilon_{i,t} = the\ error\ term\ (for\ firm\ \boldsymbol{i}\ at\ time\ \boldsymbol{t})$

Table 1 below presents and explain the variables used in the model.

**Table 1**

**Summary of variables (definitions )**

| **Dependent variable** | | **Expected Sign** |
|---|---|---|
| log(comp) | = The log CEO compensation of for firm *i* at a time *t;* it is a dependent variable in the first equation. It is measured in millions of South African Rands (ZAR millions). | |
| **Independent variables** | | |
| Ten | = a control variable that represents the number of years the CEO has held the current position at the end of the year. | + |
| Age | = a control variable indicating The CEO's age at The end of The financial year. | + |
| Gen | = a control variable taking on the value of 1 if the gender of the CEO is female, 0 if the gender of the CEO is male. | ? |
| Dua | = a control variable taking on the value of 1 if the CEO holds both the position of CEO and chairperson of the board, 0 if the CEO holds on the position of CEO. | + |
| INTD | = a variable taking on the value of 1 if the firm headed by the CEO has International interests. | + |
| Size | = a variable denoting firm size as measured by total assets. Total assets are the sum of the book value of assets. | + |
| InstOwn | = a corporate governance variable for percentage of common stock owned by institutional shareholders | - |
| RET | = a market based measure of performance as measured by common stock return at financial year end, adjusted for dividend retained. | + |
| ROE | = an accounting based measure of performance as measured by net profit divided by total outstanding shares. | + |
| ROA | = an accounting based measure of performance measured by EBIT divided by average book value if assets. | - |

### *3.3.1 Empirical Hypothesis*

The thrust of this research is to advance the hypothesis that CEO compensation is existent to align the interests of the executive with those of the investors and is accomplished by associating the CEO's compensation to the company's stock price and accounting performance. The study is developed on the notion that the presence of an agency problem does not imply that firms, regulators and government cannot develop the framework to control the effect of the agency problem.[5]

The hypotheses for this study are constructed on the propositions that firstly the total concomitant compensation paid to a CEO is positively associated with ROE, ROA and shareholder return. Secondly contemporaneous cash salary component of compensation is positively associated with the three performance measures ROE, ROA and shareholder return. Lastly the proposition that contemporaneous cash bonus to CEOs is positively related to ROE, ROA and shareholder return. Hence is all the above discussed propositions a positive sign is predicted in the hypotheses.

The above predictions, literature discussed and existing theories give a basis to elect nine different hypothesis that relate to CEO pay-performance relationship.

The predictions would be:

**Hypothesis 1:**
$H_0$ *ROE is positively related to total CEO compensation in South Africa.*

**Hypothesis 2:**
$H_0$ *ROA is positively related to total CEO compensation in South Africa.*

**Hypothesis 3:**
$H_0$ *Stock price performance is positively related to total CEO compensation in South Africa.*

**Hypothesis 4:**
$H_0$ *ROE is positively related to basic CEO salary in South Africa.*

**Hypothesis 5:**
$H_0$ *ROA is positively related to basic CEO salary in South Africa.*

**Hypothesis 6:**
$H_0$ *Stock price performance is positively related to basic CEO salary in South Africa.*

**Hypothesis 7:**

[5] The labour market, regulators and the firm's internal mechanisms are set to help control the agency problem (Fama, 1980).

*$H_0$ ROE is positively related to CEO cash bonuses in South Africa.*

**Hypothesis 8:**
*$H_0$ ROA is positively related to CEO cash bonuses in South Africa.*

**Hypothesis 9:**
*$H_0$ Stock price performance is positively related to CEO cash bonuses in South Africa.*

**Chapter Summary**

In this chapter, sources of the data and sampling method are explained. The statistical techniques applied to the data are described. An outline of the methodology applied on the data is given. The research design involving the comparison of CEO remuneration with accounting and stock price performance using the set regression models.

# CHAPTER 4 PRESENTATION OF RESULTS

## 4.1 Introduction

This chapter reports the results of the multiple regression model and presents the descriptive statistics of the data. The chapter arrangement is as follows. Section 4.2 summarises the descriptive statistics of the data. 4.3 presents the results of the regression models used to explore the relationship between CEO compensation and company performance, the chapter summary concludes the chapter.

## 4.2 Descriptive Statistics

In Table 2 below descriptive statistics for CEO remuneration are presented. It is observed that there is a gradual fall of the average basic salary post the 2009 world economic crisis to 2011, this is consistent with observations made by Bebchuk *et al*. (2010) in the USA. While a decline in basic salary is observed, it is notable that average bonus compensation steadily increased post the 2009 financial crisis. A report by Prophet analytics (2012) suggests that the shift in the fall of basic salary and the slight increase in bonus based compensation is a shift by firms to a perfomance based approach to remuneartion of CEOs in South Africa. It is also notable that the highest component of remuneration is a bonus of 62.818 millon rands in 2011 higher than any highest basic salary in the sampled period. Total remuneration has continued on an upward tangent.

**Table 2**
**Descriptive Statistics**

Table 2 is a presentation of CEO Compensation components (basic salary and bonus) descriptive statistics in South African Rand for 119 JSE Listed firms and 714 firm-years for the period from 2008 to 2013 also included are statistics for total remuneration which is summation basic salary and bonus.

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | All |
|---|---|---|---|---|---|---|---|
| Basic Salary (ZAR millions) | | | | | | | |
| Mean | 5.590128 | 6.183774 | 6.062508 | 5.46363 | 5.995596 | 7.229911 | 6.094145 |
| Median | 3.425 | 3.9565 | 3.96 | 3.946 | 4.487152 | 5.18 | 4.074303 |
| Max | 55.888382 | 59.472879 | 41.623656 | 40.62 | 40.62 | 49.656 | 59.47288 |
| Std. Dev. | 7.383916 | 7.82914 | 7.284898 | 5.519293 | 5.025117 | 7.094732 | 6.719045 |
| | | | | | | | |
| Bonus (ZAR millions) | | | | | | | |
| Mean | 5.180256 | 4.122821 | 4.982014 | 6.034943 | 4.672853 | 5.570482 | 5.118603 |
| Median | 2.6 | 3.095 | 3.150335 | 3.486 | 3.357 | 3.3015 | 3.20041 |
| Max | 44.372126 | 16.465244 | 30 | 62.818 | 23.243222 | 27.030245 | 62.818 |
| Std. Dev. | 8.244972 | 3.876182 | 5.505031 | 8.340469 | 4.712404 | 6.136585 | 6.364364 |

| Total Remuneration (ZAR millions) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mean | 7.988764 | 7.760235 | 8.398399 | 9.679773 | 9.250346 | 10.933923 | 9.001907 |
| Median | 4.871311 | 5.83 | 5.955 | 6.795 | 7.85717 | 7.374733 | 6.2435 |
| Max | 63.216 | 59.472879 | 66.921 | 73.208 | 40.62 | 53.250597 | 73.208 |
| Std. Dev. | 11.555564 | 8.976965 | 10.084867 | 10.844386 | 7.803618 | 10.851035 | 10.12396 |

Table 3 below reports descriptive statistics for corporate governance firm characteristics of CEO age, tenure and institutional ownership (% of institutional shareholders). The average age of CEOs is 52.68 years the eldest being 67 and the youngest 31. The CEO tenure is an indication that South African firms tend to retain executives for up to 5 years meaning they may not have as much power to dictate their remuneration as per Ozkan (2011) who suggests that CEOs who stay longer in firms tend to prescribe their worth. The average institutional ownership is 53.16% a figure twice what was found in the UK by Conyon and Murphy (2000) and Ozkan (2007). Hartzell and Starks (2003) and Sapp (2008) suggest that a larger percentage of institutional shareholders entails more CEO pay moderation.

**Table 3**

**Descriptive Statistics**

Table 3 presents descriptive statistics of firm characteristics for 119 JSE Listed firms and 714 firm-years for the period from 2008 to 2013.

| Corporate Governance Determinants | | | | | |
|---|---|---|---|---|---|
| | Mean | Median | Max | Min. | Std. Dev. |
| Age | 52.68841 | 53 | 67 | 31 | 6.259044 |
| Tenure[6] | 5.600631 | 4.08 | 34.5 | 0.08 | 5.126792 |
| Institutional ownership (%) | 53.16293 | 50.245 | | | 29.41634 |

The descriptive statistics of economic firm characteristics are presented in Table 4. The average market value has increased from 57 million rands in 2008 to 92 million rands 2013. This is consistent with increases in shareholder return - a determinant of market value. Total assets have also steadily incresed in the same period. Shareholder return average is negative in 2008, may beas an early sign of the global financial crisis. However, there has been an upward trajectory in shareholder return between 2009 to 2013.. Accounting measures of performance have on average remained stable although there is a slight drop in 2008 for both variables.

[6] Tenure is measured in years served at the end of the firm's fiscal year.

## Table 4

## Descriptive Statistics

Table 4 presents descriptive statistics of firm characteristics for 119 JSE Listed firms and 714 firm-years for the period from 2008 to 2013. Market value is measured by share price multiplied by number of outstanding shares. Size is measured total book value of assets. Shareholders Return is the percentage change in market value of common stock adjusted for dividend. ROA is Return on Assets. ROE is Return On Equity.

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | All |
|---|---|---|---|---|---|---|---|
| Economic determinant | | | | | | | |
| Market Value (ZAR millions) | | | | | | | |
| Mean | 57193.07 | 62921.77 | 68049.06 | 69892.14 | 84164.41 | 92104.94 | 72579.89 |
| Median | 11508.3 | 16302.95 | 18672.16 | 18989.28 | 21963.94 | 22762.87 | 17614.35 |
| Max | 1219564 | 998759.2 | 1025558 | 1111813 | 1447747 | 1497895 | 1497895 |
| Min. | 359.8709 | 490.2022 | 646.5971 | 627.3088 | 626.0417 | 389.337 | 359.8709 |
| Std. Dev. | 159899.2 | 148163.9 | 153539.5 | 162706.7 | 197870.4 | 215432.3 | 174764.1 |
| Total Assets (ZAR millions) | | | | | | | |
| Mean | 55060.46 | 53001.81 | 54656.66 | 60675.95 | 67826.07 | 75493.34 | 61112.31 |
| Median | 9557 | 9676 | 10477.5 | 12457 | 14427.33 | 17103.2 | 12290.54 |
| Max | 1503653 | 1292506 | 1332409 | 1492829 | 1560349 | 1690929 | 1690929 |
| Min. | 14.1191 | 7.436 | 113.116 | 127.6895 | 200.055 | 187.343 | 7.436 |
| Std. Dev. | 181799.8 | 164446 | 164567.8 | 180531.3 | 196272.8 | 214580 | 183998.8 |
| Performance Measures | | | | | | | |
| Shareholder return | | | | | | | |
| Mean | -21.454 | 3.602316 | 32.26145 | 42.1003 | 89.97833 | 127.5467 | 46.67044 |
| Median | -21.1868 | 1.963 | 19.2888 | 27.8646 | 55.6147 | 86.5344 | 11.4908 |
| Max | 38.6602 | 103.5009 | 348.956 | 386.3404 | 657.6035 | 1349.677 | 1349.677 |
| Min. | -85.6034 | -88.1695 | -85.1223 | -84.1304 | -93.3696 | -96.4103 | -96.4103 |
| Std. Dev. | 25.07427 | 36.03325 | 68.1846 | 87.96688 | 147.2216 | 206.6218 | 125.6499 |
| ROA | | | | | | | |
| Mean | 8.309871 | 5.64126 | 6.992261 | 7.824299 | 6.311467 | 5.757261 | 6.803003 |
| Median | 7.5535 | 5.5261 | 6.3255 | 6.1453 | 5.17285 | 5.1066 | 5.8146 |
| Max | 87.2209 | 40.5216 | 62.7074 | 54.72 | 34.4247 | 38.1035 | 87.2209 |
| Min. | -34.4986 | -106.601 | -180.562 | -24.2525 | -30.194 | -26.3365 | -180.562 |
| Std. Dev. | 14.45441 | 13.11602 | 20.83972 | 9.760314 | 10.12297 | 9.957718 | 13.58508 |
| ROE | | | | | | | |
| Mean | 20.76263 | 16.40072 | 19.03226 | 18.8159 | 14.7991 | 16.27121 | 17.66381 |
| Median | 18.4883 | 13.7109 | 19.6076 | 16.8549 | 15.4046 | 16.1545 | 16.5814 |
| Max | 150.2449 | 98.7222 | 132.3508 | 112.9694 | 79.3993 | 124.7978 | 150.2449 |
| Min. | -90.1622 | -122.511 | -216.053 | -34.4297 | -137.567 | -52.1515 | -216.053 |
| Std. Dev. | 31.66903 | 23.56891 | 32.17881 | 19.40641 | 24.56209 | 23.45946 | 26.16299 |

Increase in the performance measure shareholder return suggests that increase in total remuneration is justified while accounting performance measures ROE and ROA have largely remained flat over years.

## 4.3 Results

### *4.3.1 Regression Diagnostics*

Multicollinearity makes it difficult to distinguish the proportional influences amongst independent variables as it tends to cause large dispersions (variances and covariances) for the regression estimators. Gujarati (2012) & Brooks (2014) suggest that to identify and overcome this problem Pearson correlation has to be computed.

To detect multicollinearity simple correlation coefficients were used. Table 6 below shows derived correlations between independent variables. The correlation matrix shows that the most significant correlation exists between market value and size (total assets) which is at (0.975 Pearson) which are both measures of firm size. The second largest correlation coefficient is between the accounting performance measures ROA and ROE at (0.777 Pearson) showing that the two tend to move in the same direction. High correlations are only substantial if they exceed 80 percent (see Brooks 2014), hence the correlation between the size measures i.e. size (total assets) and market value (of 0.975) leads to the decision to drop one variable market value retaining size (total assets).

**Table 5**

**Pearson Correlation Coefficient Matrix**

| | AGE | DUALITY | GENDER | INST | INTD | MKT_VAL | RET | ROA | ROE | SIZE | TENURE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AGE | | | | | | | | | | | |
| DUALITY | 0.093* | | | | | | | | | | |
| GENDER | -0.046 | -0.015 | | | | | | | | | |
| INST | -0.010 | -0.045 | 0.141*** | | | | | | | | |
| INTD | 0.135*** | -0.031 | 0.050 | 0.234*** | | | | | | | |
| MKT_VAL | -0.042 | -0.012 | 0.150*** | 0.189*** | 0.181*** | | | | | | |
| RET | 0.110** | 0.089* | -0.117** | 0.094* | 0.007 | 0.055 | | | | | |
| ROA | 0.086* | -0.007 | -0.158*** | -0.126** | 0.131*** | -0.074 | 0.381*** | | | | |
| ROE | 0.117** | -0.014 | -0.120** | -0.046 | 0.171*** | 0.043 | 0.416*** | 0.777*** | | | |
| SIZE | -0.064 | -0.015 | 0.169*** | 0.181*** | 0.142*** | 0.975*** | -0.006 | -0.150*** | -0.020 | | |
| TENURE | 0.323*** | 0.098* | -0.100** | 0.035 | -0.034 | -0.068 | 0.185*** | 0.060 | 0.041 | -0.055 | |

Table 6 shows the Pearson correlation matrix of the predictor variables. The beta coefficients' significance is represented as follows; * at 10% level, ** at 5% level and *** at 1% level with the p value on a two-tailed test.

The use of panel data is in itself a solution for the heteroskedasticity problem. To confirm that no heteroskedasticity exists we ran the regressions with the entire data set in logs and compared this to the results of the regression without logarithms which showed that they were very close to one another. The researcher also performed the Wald test to test if the coefficients of variables are equal to zero. The null hypothesis was rejected that the coefficients are equal to zero basing on the probability value of the F-Statistic ($p = 0.026 < p = 0.05$), therefore it can be concluded that the coefficients of variables are significantly different from zero.

### *4.3.2 The relationship between CEO compensation and corporate performance*

The multiple regression model was used to test the hypotheses following a prior study by Wang *et al*. (2013) to account for the effects of the control variables in the regression. Gujarati (2012) states that independent variables in a hierarchical model can be nested into control variables and other independent variables and entered at different intervals into the regression model so that effects beyond and after the controls can be observed. In testing this model the Ordinary Least Squares (OLS) is the method employed.

**Table 6**

This table outlines coefficients and T-statistics from the regression models 1 up to 4. The regressions are that of different compensation variables; Basic Salary, Bonus and Total Compensation regressed against control variables; Tenure, Age; Duality and Gender as well as the remaining predictor variables International diversification, Firm Size, Institutional Ownership Shareholder Return, Return On Equity (ROE) and Return On Assets (ROA). The number of observations n = 714 including unreported years for 119 firms. The beta coefficients' significance is represented as follows; * at 10% level, ** at 5% level and *** at 1% level with the p value on a two-tailed test.

| Variable | Expected Sign | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|---|
| Tenure | + | 0.018*** | 0.020** | 0.017 | 0.020*** |
| | | 2.740 | 2.524 | 1.271 | 2.840 |
| Age | + | 0.007 | -0.004 | -0.012 | 0.004 |
| | | 1.262 | -0.560 | -1.193 | 0.621 |
| Gender | ? | 0.162 | -0.166 | -0.326 | 0.024 |
| | | 0.916 | -0.834 | -1.029 | 0.136 |
| Duality | + | 0.428 | 0.359 | 0.564 | 0.243 |
| | | 0.916 | 0.684 | 0.773 | 0.515 |
| International Diversification (INTD) | + | | 0.446*** | 0.458*** | 0.432*** |
| | | | 5.206 | 3.544 | 5.598 |
| Firm Size (Size) | + | | 0.000*** | 0.000*** | 0.000** |
| | | | 2.947 | 3.368 | 2.498 |
| Institutional Ownership (InstOwn) | - | | 0.003** | 0.005*** | 0.003** |
| | | | 2.264 | 2.690 | 2.309 |
| Shareholder Return (RET) | + | | 0.000 | 0.001 | 0.000 |
| | | | 0.921 | 1.268 | -0.817 |
| Return On Equity (ROE) | + | | -0.004 | -0.001 | -0.006** |
| | | | -1.317 | -0.346 | -2.506 |

| | | | | | |
|---|---|---|---|---|---|
| Return On Assets (ROA) | - | | 0.010* | 0.007 | 0.013** |
| | | | 1.690 | 0.767 | 2.373 |
| Adjusted R Squared | | 0.016 | 0.122 | 0.107 | 0.136 |
| R Squared | | 0.023 | 0.145 | 0.134 | 0.159 |
| Change in R Squared | | | 0.462 | 0.299 | 0.515 |
| Change in F Statistic | | | 84.138*** | 82.836*** | 85.535*** |

The table above shows regression results for the following models;

Model 1; $$\mathbf{log}(\boldsymbol{Totalcomp}_{i,t}) = a_0 + a_1\mathbf{Ten}_{i,t} + a_2\mathbf{Age}_{i,t} + a_3\mathbf{Gen}_{i,t} + a_4\mathbf{Dua}_{i,t} + +\varepsilon_{i,t}$$

Model 2; $$\mathbf{log}(\boldsymbol{Totalcomp}_{i,t}) = a_0 + a_1\mathbf{Ten}_{i,t} + a_2\mathbf{Age}_{i,t} + a_3\mathbf{Gen}_{i,t} + a_4\mathbf{Dua}_{i,t} + a_5\mathbf{INTD}_{i,t} + a_6\mathbf{Size}_{i,t} + a_7\mathbf{INSTown}_{i,t} + a_8\mathbf{RET}_{i,t} + a_9\mathbf{ROE}_{i,t} + a_{10}\mathbf{ROA}_{i,t} + \varepsilon_{i,t}$$

Model 3; $$\mathbf{log}(\boldsymbol{Bonus}_{i,t}) = a_0 + a_1\mathbf{Ten}_{i,t} + a_2\mathbf{Age}_{i,t} + a_3\mathbf{Gen}_{i,t} + a_4\mathbf{Dua}_{i,t} + a_5\mathbf{INTD}_{i,t} + a_6\mathbf{Size}_{i,t} + a_7\mathbf{INSTown}_{i,t} + a_8\mathbf{RET}_{i,t} + a_9\mathbf{ROE}_{i,t} + a_{10}\mathbf{ROA}_{i,t} + \varepsilon_{i,t}$$

Model 4; $$\mathbf{log}(\boldsymbol{Basic\ salary}_{i,t}) = a_0 + a_1\mathbf{Ten}_{i,t} + a_2\mathbf{Age}_{i,t} + a_3\mathbf{Gen}_{i,t} + a_4\mathbf{Dua}_{i,t} + a_5\mathbf{INTD}_{i,t} + a_6\mathbf{Size}_{i,t} + a_7\mathbf{INSTown}_{i,t} + a_8\mathbf{RET}_{i,t} + a_9\mathbf{ROE}_{i,t} + a_{10}\mathbf{ROA}_{i,t} + \varepsilon_{i,t}$$

Model 1 in Table 7 indicates the entering of control variables only in the regression first, this is to test the effects of control variables on compensation. The results of this model indicate that tenure is positively significant in relation to CEO compensation while the other three variables age, gender and duality no relationship is shown.

The results from Model 2 in Table 7 show that CEO age, gender, duality, shareholder return and return on equity (ROE) do not significantly explain total remuneration paid to CEOs. However CEO tenure positively determines CEO's total salary. There is also a positive relationship between a firm's international diversification and size and the total pay a CEO receives as in Wang *et al.* (2013). Institutional shareholding results show a positive significant relationship with total CEO remuneration. The accounting performance measure return on assets (ROA) has a positive and significant relation with total compensation to the CEO.

Model 3 in Table 7 reports the results of the bonus component of CEO remuneration against predictor variables. The results indicate that all the performance measures (accounting and market-based) do not significantly relate to CEO bonuses. The coefficient in the estimation against tenure, institutional shareholding international diversification and size shows a positive relationship with bonuses awarded to CEOs. It is also found that all control variables i.e. tenure, age, duality and gender are not significantly associated to bonuses awarded to CEOs.

In Model 4 the relationship between CEO basic remuneration and performance indicators (as well as other firm characteristic variables) are regressed. The test results indicate that there is a significant relationship between basic salary and accounting based performance (ROE and ROA), the coefficients however show a negative relationship between ROE and basic salary, while a positive relationship exists between ROA and basic salary. The association between market based measure of performance shareholder return and CEO basic remuneration is significant. The researcher also found that, tenure has a significant positive relationship with CEO basic salary, while the remaining control variables i.e. age, duality and age do not have a significant relationship with basic remuneration.

From the results we can therefore deduce the following;

Hypothesis 1: The result of ROE performance ($\beta$= -0.004, $t$ = -1.317, p>10%) indicate that the null cannot be rejected, this study concludes that ROE is not significantly related to total CEO remuneration, hence the hypothesis is rejected.

Hypothesis 2: The result of ROA performance ($\beta$= 0.010, $t$ = 1.690, p<10%) indicate a positive significant relationship between ROA and total CEO remuneration. The result thus backs the null hypothesis that ROA is positively related to total CEO remuneration. This result suggests that a higher return on assets, leads to greater CEO total salary.

Hypothesis 3: The stock price performance result ($\beta$= 0.000 $t$ = 0.921, p>10%) show that the null cannot be rejected, and conclusively stock price return is not significantly related to total CEO salary, resultantly the hypothesis is rejected.

Hypothesis 4: The result of the regression between ROE and basic remuneration ($\beta$= -0.006, $t$ = -2.506, p<5%) shows there is a negative significant relationship between ROE and basic remuneration. Thus supports $H_1$ that ROE is negatively related to basic CEO salary, this result

exhibits that the higher the return on equity, the less the basic salary earned by CEOs in South Africa.

Hypothesis 5: The result of ROA from model 4 (β= 0.013 t = 2.373, p<5%) is reflective of a positive and significant relationship between ROA and basic remuneration. This outcome is leads to acceptance of the null hypothesis that ROA is positively related to basic CEO remuneration and means any increase in ROA leads to a higher CEO basic remuneration.

Hypothesis 6: The result from stock price performance (RET) ($\beta$= 0.000, $t$ = -0.817, p>10%) show that the null cannot be rejected, and conclusively stock price return is not significantly related to basic CEO salary, resultantly the hypothesis is rejected.

Hypothesis 7: The ROE result ($\beta$= -0.001, $t$ = -0.346, p>10%) in model 3 indicates that the relationship between ROE and CEO cash bonus is statistically insignificant therefore the null hypothesis is rejected.

Hypothesis 8: The ROA result ($\beta$= 0.007, $t$ = 0.767, p>10%) in model 3 indicates that the relationship between ROA and CEO cash bonus is statistically insignificant therefore the null hypothesis is rejected.

Hypothesis 9: The stock price performance (RET) result ($\beta$= 0.001, $t$ = 1.268, p>10%) in model 3 indicates that the relationship between stock price performance and CEO cash bonus is statistically insignificant therefore the null hypothesis is rejected.

The results above leads one to making an inference that shareholder returns (the market measure for performance) do not relate to the modelling CEO compensation i.e. cash bonuses, basic remuneration and total salary. ROE does not have a significant impact on total compensation and cash bonuses although a negative ROE seems to lead to higher basic CEO remuneration in South Africa this is consistent with the findings of Ozkan (2007) although contradicting a South African study by Scholtz & Smit (2012). ROA does not affect the bonuses earned but higher ROA leads to increased basic salary and total earnings for CEOs. Notably increased international diversification, firm size and institutional shareholding strongly contribute to an increase in all forms of remuneration studied.

**Chapter Summary**

This chapter reports the results of the regression analysis of CEO compensation variables (total remuneration, basic salary and cash bonuses) against performance variables (ROE, ROA and shareholder return) as well as other firm characteristic variables. Moreover descriptive statistics analysis on raw data was performed to assess trends of CEO pay and company performance. Further, correlations of predictor variables where presented and an analysis of them made before running the regression. Chapter five presents discussion, conclusions and recommendations for further study from the presented outcomes.

# CHAPTER 5 CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

The preceding chapters introduced the research problem, reviewed the theoretical underpinnings in relating CEO compensation to performance and findings of previous research, they also derived and described the framework for examination of the problem and presented the results of the study. The objective of this chapter is to close the study by presenting the major findings of the research.

In Section 5.2 is a discussion of the major findings and their relation to literature, Section 5.3 concludes the the paper, 5.4 the recommendations for further research are provided ending the paper with the chapter summary.

## 5.2 Discussion

Similar to Wang *et. al* (2013) the results in chapter four reflect that only accounting based measures (ROA and ROE) are significantly associated with the fixed salary component of CEO compensation although in this study the correlations go in different directions (ROA significant and positive and ROE is negative and significant). The bonus component of CEO compensation in South Africa shows no relation with performance. Consistent with Rosen (1992), and Sloan (1993) we find that only ROA is has a significant in relation (positive) to the combined compensation variable (Total compensation), however Boschen, *et al* (2003) say this does not hold after observing long-run response. Shareholder return (RET) a market based measure of firm performance was not significantly related to any compensation variable.

Although they were not amongst the objectives of the study, firm characteristic variables which include international diversification and firm size are found to be positively correlated with international diversification a large very strong the largest in the sample of variables this is consistent with Denis, *et al*. (2002) and Fatemi (1984). Contary to Ozkan, (2011), we find that there is a significant positive relationship between all forms of compensation and the percentage of institutional shareholders. This unlike in Scholtz and Smit (2012) indicates a weak monitoring role by stockholders post King III recommendations which state that that remuneration policies must be tabled to and approved by shareholders. Surve (2008) suggests that that institutional shareholders perceive the compensation paid to South African CEOs to be a fair reflection of their value to their companies and therefore do not regulate it as expected.

This leads to the question: does the agency theory hold in South Africa? Ownership and control were seperated to ensure directors work in best interest of shareholders and as a result it is expected that positive correlation be found between corporate performace and CEO compensation. The problem is, no relationship exists on CEO bonuses agaist any performance measure and market return has no significant relationship to talk about while relatively low correlation exists between ROA and basic salary as well as total salary.

The weak to non existent relationship between coporate performance and compensation the study can be attributed to international diversification which leads most firms to being forced to match international remuneration levels. As Duru & Reeb (2002) also allude, international expansion and globalisation gives executives' remuneration negotiation power, and this coupled with a larger span of control, increasing business risk and operational complexity in global markets all contribute to the trends observed in this study.

## 5.3 Conclusion

This study set out to examine the relationship between CEO compensation components (Total Compensation, Salary and Bonus) and corporate performance (both accounting and stock price). Our expectation was that, we find all compensation variables to be positively related to both accounting and stock price performance. The results suggest that in South Africa only the current return on assets (ROA) matters to the current fixed salary component and resultantly the total remuneration, while the bonus component is not determined by company performance. We observe as well that stock price performance (RET) is not a determinant of fixed salary and cash bonuses nor the total compensation thereof. Unfortunately the researcher could not secure data for options awards which could have reflected well with stock price performance. Although not the main aim of this paper, the relationship between CEO remuneration and international diversification reflected to be the most positively significant and had the highest coefficient, showing that indeed performance is not the most influential variable in CEO pay determinants in South Africa

The results indicate that there is still a need in South Africa to harmonise the relationship between performance and pay of CEO's through adaptation of the King III resolutions in relation to executive pay.

## 5.4 Recommendations for Future Research

A number of avenues are available for further research on executive remuneration. Among them the researcher recommends the following:

- CEO pay-performance elasticity/sensitivity analysis.
- International diversification, emerging markets, globalisation: An inquiry into CEO compensation structures.
- The relationship between mergers and acquisitions and executive compensation in South Africa.
- Industrial effects on executive compensation contracts.
- Financial reporting systems and executive compensation.
- The relationship between executive option awards and corporate performance in South Africa.

The possible research topics are limitless although such studies may lead to unbundling of various complexities in the South African Economy.

**Chapter Summary**

The research process is summarised in this chapter, the findings are discussed and conclusions are drawn. An assessment of research objectives and research challenges is also compiled and areas of possible future research are outlined as well.

# APPENDIX 1

## Executive remuneration disclosure in terms of the law and JSE listing requirements

| JSE listing requirements | Companies Act 2008 |
|---|---|
| • Disclosure of individual directors' remuneration and benefits, including those of any director who has resigned.<br><br>• An analysis in aggregate and by director or proposed director, of remuneration and benefits paid or accrued as payable during the last financial period by the company, separating between executive and non-executive directors, of the following:<br><br>(a) fees for services as a director;<br><br>(b) management, consulting, technical or other fees paid for such services rendered;<br><br>(c) basic salary;<br><br>(d) bonuses and performance-related payments;<br><br>(e) sums paid by way of expense allowance;<br><br>(f) any other material benefits received;<br><br>(g) contributions paid under any pension scheme;<br><br>(h) any commission, gain or profit-sharing arrangements; and<br><br>(i) In respect of share options or any other right given which has had the same or a similar effect in respect of providing a right to subscribe for shares ("share options"). | • The following must be disclosed separately in Financial Statements:<br>(a) Remuneration benefits received by each director,<br>(b) Pensions paid,<br>(c) Any payments to pension schemes,<br>(d) Compensation paid in respect of loss of office,<br>(e) Any securities issued and service contracts.<br><br>• Remuneration includes:<br>(a) Directors' fees for services to or on behalf of the company,<br>(b) Salary, bonuses and performance-related payments,<br>(c) Expense allowances for which the director need not account,<br>(d) Contributions to any pension scheme not otherwise needing separate disclosure,<br>(e) Options or rights given directly or indirectly,<br>(f) Financial assistance for the subscription of options or securities or the purchase of securities, and<br>(g) Any loans and any other financial assistance.<br>• Remuneration and benefits must be shown for:<br>(a) Services as director of the reporting company, and<br>(b) All other services while being a director of the reporting company. |

Sources: Adopted from Scholtz & Smit (2012)

## REFERENCES


Agrawal, A., & Knoeber, C. R. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of financial and quantitative analysis, 31*(03), 377-397.

Agrawal, R.K., & Samwick A. A. (1999) The other side of the trade off: The impact of risk on executive compensation. *Journal of Political Economy* 107: 65-105.

Baker, G. P., Jensen, M. C., & Murphy, K. J. (1988). Compensation and incentives: Practice vs. theory. *The journal of Finance, 43*(3), 593-616.

Banker, R. D., Darrough, M. N., Huang, R., & Plehn-Dujowich, J. M. (2013). The Relation between CEO Compensation and Past Performance, *The Accounting Review*, pp. 1-30. Retrieved from http://www.jstor.org/stable/41721933

Barris, L. J. (1992). Overcompensation Problem: A Collective Approach to Controlling Executive Pay, The. *Ind. LJ, 68*, 59.

Barron, C. (2014, 18 May 2014). Amplats boss says sorry, *Business Times*.

Bebchuk, L. A., Cohen, A., & Spamann, H. (2010). Wages of Failure: Executive Compensation at Bear Stearns and Lehman 2000-2008, The. *Yale J. on Reg., 27*, 257.

Bebchuk, L. A., & Fried, J. M. (2003). Executive Compensation as an Agency Problem. *The Journal of Economic Perspectives, 17*(3), 71-92.

Bebchuk, L. A., & Fried, J. M. (2006). *Pay without performance: The unfulfilled promise of executive compensation*: Harvard University Press.

Bebchuk, L. A., & Fried, J. M. (2010). Paying for long-term performance. *University of Pennsylvania Law Review*, 1915-1959.

Bebchuk, L. A., & Spamann, H. (2009). Regulating bankers' pay. *geo. Lj, 98*, 247.

Berle, A. A., & Means, G. (1932). The modern corporation. *Temporary National Economic Committee, Distribution of Ownership in the, 200*.

Bhagat, S., & Bolton, B. (2014). Financial crisis and bank executive incentive compensation. *Journal of Corporate Finance, 25*, 313-341.

Boschen, J. F., Duru, A., Gordon, L. A., & Smith, K. J. (2003). Accounting and Stock Price Performance in Dynamic CEO Compensation Arrangements. *The Accounting Review, 78*(1), 143-168.

Boschen, J. F., & Smith, K. J. (1995). You Can Pay Me Now and You Can Pay Me Later: The Dynamic Response of Executive Compensation to Firm Performance. *The Journal of Business, 68*(4), 577-608.

Brooks, C. (2014). Introductory econometrics for finance: Cambridge university press.

Bushman, R. M., & Smith, A. J. (2001). Financial accounting information and corporate governance. *Journal of accounting and Economics, 32*(1), 237-333.

Cadbury, A. (1992). *Report of the committee on the financial aspects of corporate governance* (Vol. 1): Gee.

Carpenter, M. A., Sanders, W. G., & Gregersen, H. B. (2001). Bundling human capital with organizational context: The impact of international assignment experience on multinational firm performance and CEO pay. *Academy of Management Journal, 44*(3), 493-511.

Coakley, J., & Iliopoulou, S. (2006). Bidder CEO and Other Executive Compensation in UK M&As. *European Financial Management, 12*(4), 609-631.

Core, J. E., Holthausen, R. W., & Larcker, D. F. (1999). Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics, 51*(3), 371-406.

Crocker, K. J., & Slemrod, J. (2007). The economics of earnings manipulation and managerial compensation. *The RAND Journal of Economics, 38*(3), 698-713.

Crotty, A., & Bonorchis, R. (2006). *Executive pay in South Africa: Who gets what and why*: Juta and Company Ltd.

Daily, C. M., Johnson, J. L., Ellstrand, A. E., & Dalton, D. R. (1998). Compensation committee composition as a determinant of CEO compensation. *Academy of Management Journal, 41*(2), 209-220.

Deckop, J. R. (1988). Determinants of Chief Executive Officer Compensation. *Industrial and Labor Relations Review, 41*(2), 215-226.

Denis, D. J., Denis, D. K., & Yost, K. (2002). Global diversification, industrial diversification, and firm value. The journal of Finance, 57(5), 1951-1979.

Duru, A., & Reeb, D. M. (2002). International diversification and analysts' forecast accuracy and bias. *The Accounting Review, 77*(2), 415-433.

Fama, E. F. (1980). Agency Problems and the Theory of the Firm. *Journal of Political Economy, 88*(2), 288-307.

Fang, V. W., Noe, T. H., & Tice, S. (2009). Stock market liquidity and firm value. *Journal of Financial Economics, 94*(1), 150-169.

Fatemi, A. M. (1984). Shareholder benefits from corporate international diversification. The journal of Finance, 39(5), 1325-1344.

Faulkender, M., Kadyrzhanova, D., Prabhala, N., & Senbet, L. (2010). Executive compensation: An overview of research on corporate practices and proposed reforms. *Journal of Applied Corporate Finance, 22*(1), 107-118.

Finkelstein, S., & Hambrick, D. C. (1988). Chief executive compensation: A synthesis and reconciliation. *Strategic Management Journal, 9*(6), 543-558.

Finkelstein, S., & Hambrick, D. C. (1997). Review: Strategic Leadership: Top Executives and Their Effects on Organizations. *Australian Journal of Management*.

Gómez-Mejía, L. R., & Balkin, D. B. (1992). *Compensation, organizational strategy, and firm performance*: South-Western Pub.

Gujarati, D. N. (2012). Basic econometrics: Tata McGraw-Hill Education.

Greenbury, R. (1995). Greenbury Report. *Directors' Remuneration: Report of a Study Group Chaired by Sir Richard Greenbury, 17*.

Grinstein, Y., Weinbaum, D., & Yehuda, N. (2011). The economic consequences of perk disclosure. *Unpublished working paper. Cornell University and Syracuse University*.

Hampel, R. (1998). Committee on Corporate Governance: Final Report. 1998. *London: Gee*.

Hartzell, J. C., & Starks, L. T. (2003). Institutional Investors and Executive Compensation. *Journal of Finance, 58*(6), 2351-2374.

Hillier, D., Linn, S. C., & McColgan, P. (2005). Equity issuance, CEO turnover and corporate governance. *European Financial Management, 11*(4), 515-538.

Ittner, C. D., Larcker, D. F., & Meyer, M. W. (2003). Subjectivity and the weighting of performance measures: Evidence from a balanced scorecard. *The Accounting Review, 78*(3), 725-758.

Jayaraman, S., & Milbourn, T. T. (2012). The Role of Stock Liquidity in Executive Compensation. *The Accounting Review, 87*(2), 537-563.

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.

Jensen, M. C., & Murphy, K. J. (1990). CEO incentives—It's not how much you pay, but how. *Harvard business review, 68*(3), 138-153.

King. (2002). *King Report on Corporate Governance for South Africa, 2002*: Institute of Directors in Southern Africa.

Lewellen, W. G., & Huntsman, B. (1970). Managerial pay and corporate performance. *The American Economic Review*, 710-720.

Matolcsy, Z., & Wright, A. (2011). CEO compensation structure and firm performance. *Accounting & Finance, 51*(3), 745-763.

McColgan, P. (2001). Agency theory and corporate governance: a review of the literature from a UK perspective. *Department of Accounting and Finance Working Paper, 6*, 0203.

Murphy, K. J., & Zabojnik, J. (2007). Managerial capital and the market for CEOs. Available at SSRN 984376.

Ozkan, N. (2007). Do corporate governance mechanisms influence CEO compensation? An empirical investigation of UK companies. *Journal of Multinational Financial Management, 17*(5), 349-364.

Ozkan, N. (2011). CEO Compensation and Firm Performance: an Empirical Investigation of UK Panel Data. *European Financial Management, 17*(2), 260-285

PWC. (2013). Executive Directors' Remuneration Practices and Trends Report. In G. Seegers (Ed.), *Practicices and Trends Report* (Fifth Edition ed.). Johannesburg: PriceWaterhouseCoopers South Africa.

Roberts, D. R. (1959). *Executive compensation*: Free Press.

Rosen, S. (1990). Contracts and the Market for Executives: National Bureau of Economic Research.

Rosen, S. (1992). Contracts and the Market for Executives. In *Contract Economics*, edited by L. Werin, and H. Wijkander, 181-211.

Ryan, H. E., & Wiggins, R. A. (2001). The influence of firm-and manager-specific characteristics on the structure of executive compensation. Journal of Corporate Finance, 7(2), 101-123.

Sapp, S. G. (2008). The Impact of Corporate Governance on Executive Compensation. *European Financial Management, 14*(4), 710-746.

Scholtz, H. E., & Smit, A. (2012). Executive remuneration and company performance for South African companies listed on the Alternative Exchange (AltX). *16*(1), 22-38.

Schwab, K., & Sala-i-Martín, X. (2012). *Insight Report: The Global Competitiveness Report 2012–2013.* Paper presented at the Geneva: World Economic Forum.

Seccombe, A. (2014, 14 May 2014). Amplats CEO justifies his pay, *Business Day*.

Sharp, L., & Aling, P. (2013). South African CEO Remuneration Report 2013 *Labour Market Navigator* (pp. 15). Johannesburg: Prophet Analytics.

Sloan, R. (1993). Sloan, R. G. (1993). Accounting earnings and top executive compensation. *Journal of accounting and Economics*, 16(1), 55-100.

Surve, Y. (2008). The Effect of Institutional Shareholders on the level and mix of South African Chief Executive Officers' compensation. Masters Dessertation. University of Witwatersrand.

Wang, H. C., Venezia, C. C., & Lou, Y.-I. (2013). Determinants of chief executive officer compensation. *The International Journal of Business and Finance Research, 7*(4), 29-42.