The relationship between CEO remuneration and company performance in South African state-owned entities

by

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ABSTRACT

Orientation: Over the years, the increase in executive remuneration in both the private sector and state-owned entities (SOEs) has been the subject of intense discussions. The poor performance of some SOEs with highly remunerated executives begs the question whether chief executive officers (CEOs) in South African SOEs deserve the high levels of remuneration they receive.

Research purpose: The main purpose of the study was to determine whether there is a relationship between CEOs' remuneration and company performance in South Africa's Schedule 2 SOEs.

Motivation for the study: A greater understanding of the relationship between CEO remuneration and organisational performance would expand knowledge when developing optimal CEO remuneration systems to ensure sustainability of SOEs in the South African context. If a relationship exists, it could justify the high remuneration received by CEOs.

Research design, approach, and method: This quantitative, longitudinal study, conducted over a nine-year period, collected secondary data from the annual reports of 18 Schedule 2 SOEs. The primary statistical techniques used in the study included were OLS multiple regression analysis and correlational analysis on a pooled dataset.

Main findings/results: The primary finding was that there is a relationship between CEO remuneration and company performance (mainly an inverse relationship), with no consistent trend between the constructs. Turnover appears to be an important component, as it was the most stable measure of company performance during the study period. The results indicate that the CEOs' remuneration continued to increase, even when the SOEs were performing poorly.

Practical managerial implications: Since the study focused on the relationship between CEOs' remuneration and company performance, it may aid policymakers in forming new rules and regulations that would help improve the country's economic performance while attracting international investors.

Contribution/value-add: The study provides new knowledge to the limited research available on SOEs in South Africa. Further, this research focused on three

different components of CEOs' remuneration, thereby shedding more light on the relationship between their remuneration and company performance.

Key words: CEO compensation, CEO remuneration, fixed pay, company performance, irregular, fruitless and wasteful expenditure, SOEs, short-term incentive, South Africa, total remuneration

DECLARATION

I declare that the study ***The relationship between CEO remuneration and company performance in South African state owned entities*** is my own work, and that all the sources I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification, or at any other higher education institution.

Magda Bezuidenhout
November 2016

DEDICATION

In loving memory of my mother-in-law
Hester Magdalena Bezuidenhout
25 December 1948 – 8 May 2014

Shalom Ma Hes

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ACRONYMS AND ABBREVIATIONS

AGSA	Accountant-General South Africa
AO	audit opinion
RBT	resource-based theory
CEO	chief executive officer
DPE	Department of Public Enterprises
DPSA	Department of Public Service and Administration
DW	Durban Watson
EVA	economic value-add
GAAP	generally accepted accounting principles
GDP	gross domestic product
HEPS	headline earnings per share
IFWE	irregular, fruitless, and wasteful expenditure
JSE	Johannesburg Stock Exchange
LTI	long-term incentive
MFMA	Municipal Financial Management Act
MVA	market value-add
NP	net profit
OP	operating profit
OLS	ordinary least square
PFMA	Public Finance Management Act, Act 1 of 1999
PRC	Presidential Review Committee on State-owned Entities
PSRC	Public Sector Research Centre
PwC	PricewaterhouseCoopers
ROA	return on assets
ROCE	return on capital employed
ROE	return on equity
ROI	return on investment
ROS	return on sales
SAA	South African Airways
SADC	South African Development Corporation
SARS	South African Revenue Service

SASSA	South African Social Security Agency
SOE	state-owned entity
STI	short-term incentive
TR	total remuneration
TSR	total shareholder return
VIF	variance inflation factor

CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY

"When we talk pay, we must talk pay for everyone."

Zwelinzima Vavi, COSATU General Secretary 2010

Are South African executives paid too much, and is their remuneration linked to performance? These are the questions that come to mind when reading various newspapers and academic and business articles. On 17 October 2012, President Jacob Zuma called on chief executive officers (CEOs) and executive directors in the private sector and senior executives in the public sector to agree to freeze increases in salaries and bonuses for the next 12 months (Zuma 2012).

Concerns regarding excessive remuneration packages of CEOs have been added to an ongoing concern about the widening gap between the remuneration of executives and ordinary employees, as well as their large termination payments with perceived lack of justification (Theunissen 2010b). During the 21st century, there has been increased public scrutiny of escalating levels of remuneration of executives across the globe (Nicely 2009).

1.1 BACKGROUND

The concern over executive remuneration (*compensation* in the USA) is not new. In 2008, the then Minister of Finance, Trevor Manuel, indicated that "government was as concerned as ever about pay levels, especially where there is no relation to the performance of the company of the executives" (Financial Mail 2008). Manuel also felt that excessive salaries were unjustified in the context of South Africa's 23% unemployment rate, and mentioned: "In a country with the inequality and unemployment that we have, some of these exorbitant salaries are simply repulsive" (Theunissen 2010b:8).

CEOs are usually highly skilled, have noteworthy leadership competencies, and are viewed as a scarce resource (Bussin & Modau 2015). The position of CEO, therefore, typical receives the most lucrative remuneration package of the executive management echelon, he or she is ultimately responsibility for the company's

performance. These executives are highly incentivised through remuneration structures, in order to retain them, so that they may drive the performance of the organisation (Bussin & Modau 2015). The position of the CEO is therefore the focal point of the discussion around executive remuneration.

From past research on executive remuneration and company performance, there seems to be no real consensus on the relationship between executive remuneration and company performance. This is partially due to the diverse set of disciplines involved in these studies, the wide variety of methods used to investigate the questions (Florin, Hallock, & Webber 2010). The subject of CEO remuneration and company performance is even more relevant today, due to the dramatic changes in the economy and the demands from various constituent groups to examine the remuneration of senior executives more closely (Florin *et al.* 2010).

The focus of this study will be on state-owned entities (SOEs) in South Africa. SOEs play vital a role in the economies of many countries, and the outrage over what many consider excessive CEO remuneration warrants research. Take, for example, the following media headlines, abroad as well as in South Africa: *Business Live*, "Eskom directors earn R3 537m bonus" (Roberts 2011); *Business Live*, "Bonuses despite poor performance" (Volgraaff 2011); *Business day*, "Business joins call for lower executive pay in SA" (Anderson 2012); *Accountancy News*, "Can high executive pay rewards be justified?" (Aspinell 2012); *Soweto Live*, "Spotlight on high pay for executives" (I-Net Bridge 2012); *The Telegraph*, "CEOs and their salaries: because they're worth it….? (Osborne 2012); and *Times Live,* "Eskom chief Brian Molefe earns almost R800 000 per month – excluding bonuses" (Sibanyoni 2016).

The global financial crisis has legitimised state involvement in the economy, evident through government interventions in various countries. During May 2012, the Prime Minister of France indicated that a cap would be placed on the salaries of CEOs of SOEs. This came after the CEO of Electricitè de France earned €1.6 million in 2011 and the CEO of Airports de Paris earned €736 000. This is in stark contrast to the average annual wage of €16 800 (R228 985) in France (Patel 2012).

In Spain, the government renewed its crackdown on executive pay, and announced that the basic annual salaries of SOEs would be limited to €105 000 (R1 185 813). This would cut the average executive salary by up to 35% in about 4 000 SOEs (Tremlett 2012). Sweden also introduced new guidelines regarding remuneration of executives of SOEs. During 2009, Finnair paid its executives bonuses worth about €2.8 million through special bonuses, even though the company had undergone deep cutbacks to reduce the amount of red ink in its books (Sanomat 2012: 1).

Closer to home, in Botswana, a parliamentary committee found that CEOs, senior managers, and most staff of parastatals were overpaid, with hundreds of millions of pula, which the government invests in these entities, going towards substantial salaries and benefits. Based on this, the committee recommended that the Botswana government institute investigations into the over-remuneration of staff (Benza 2012).

SOEs, unlike private companies, receive the greater part of their revenue from the national treasury (who collects from the taxpayer), and are supposed to serve the public. However, the remuneration of top executives in SOEs seems to be competing with that of private companies. A result of this is that consumers pay high tariffs for the products and services of SOEs such as Eskom, while consumers should be benefiting from the funding paid to Eskom by South Africa's (SA's) National Treasury (Ngwenya & Khumalo 2012).

1.2 PROBLEM STATEMENT

Executive remuneration is a serious problem in the global financial world, with several investors, shareholders, and the public becoming outspoken about the levels of remuneration of executives (Okasmaa 2009). Particularly in the spotlight are companies that disclose poor performance, but whose executives still receive excessive remuneration, and dismissed CEOs who received large severance packages (Dommisse 2011).

Increases in CEO remuneration in the private sector and in SOEs have been the subject of intense discussions and sensational media reporting. This excessive remuneration is not aligned with the performance of the SOEs (21st Century Pay Solutions 2012). Two cases in point are the R7 million total remuneration that Brian Dames, a former Eskom CEO, received during 2012 (Massie, Collier, & Crotty 2014) and the 109% salary increases paid to Eskom executives for the financial year ending 31 March 2011 (Webb 2011). To add fuel to the situation, payouts to unsuccessful CEOs of South African SOEs have cost the taxpayer R262.1 million over the past ten years (Staff Reporter 2010).

The main problem, which informed the present study, is therefore the excessive remuneration packages that CEOs in SOEs receive, despite the poor performance, and government "bailout" of some of these SOEs. This has placed South African SOEs in the public eye in recent years (Khumalo 2009). The purpose of this research will therefore be to analyse the relationship between CEO remuneration and company performance of Schedule 2 SOEs in South Africa. If there is no relationship, it would justify the criticism that these CEOs' remuneration is excessive, because it means that, when considering the performance of SOEs, the CEOs probably earn more than they deserve.

1.3 RESEARCH OBJECTIVES

Executive remuneration remains a controversial topic (Wray 2008; Okasmaa 2009; O'Reilly & Main 2010; Bouwmeester 2011), and has, especially in the last few years, attracted a lot of public attention, often for the wrong reasons (Ozkan 2011). The aforementioned statement is supported by findings from the South African Country Review of Collective Bargaining (2010), which reported that, during 2010, the average annual remuneration for a CEO was R10 227 997. To put this into context, a low-wage worker would have to work 255 years to earn this amount of money (South African Country Review of Collective Bargaining 2010: 34).

The main objective of the present study will be to determine and analyse the relationship between the remuneration of CEOs and company performance in all

Schedule 2 South African SOEs. Given the poor performance of some SOEs with highly remunerated CEOs, the question is whether CEOs in South African SOEs deserve the high levels of remuneration they receive.

In order to achieve this objective, it would be necessary to consider, amongst others, the following issues:

- whether there is a relationship between CEO remuneration and SOE performance for the period 2006 to 2014;
- whether the relationship between CEO remuneration and SOE performance strengthened in the period 2006 to 2014;
- the nature of the relationship between CEO remuneration and SOE performance for the periods 2006 to 2010 and 2011 to 2014;
- whether SOEs' CEO remuneration is affected by age, tenure, gender, race and level of education of the CEO; and
- whether the size of the SOE has an effect on the CEO's remuneration.

1.4 RESEARCH QUESTIONS

The primary question for this study will be:

Is there a relationship between CEOs' remuneration and the performance of South African Schedule 2 SOEs?

The proposed study will be guided by the following specific research questions and sub-questions:

Research Question 1:
Is there a relationship between CEOs' remuneration and the performance of SOEs for the period 2006 to 2014?

Sub-question 1.1: Is there a relationship between CEOs' *fixed pay* and SOEs' performance?

Sub-question 1.2: Is there a relationship between CEOs' *short-term incentives* and SOEs' performance?

Sub-question 1.3: Is there a relationship between CEOs' *total remuneration* and SOEs' performance?

Research Question 2:

Did the relationship between CEOs' remuneration and SOEs' performance strengthen over the period 2006 to 2014?

Sub-question 2.1: Did the relationship between CEOs' *fixed pay* and SOEs' performance strengthen over the period 2006 to 2014?

Sub-question 2.2: Did the relationship between CEOs' *short-term incentives* and SOEs' performance strengthen over the period 2006 to 2014?

Sub-question 2.3: Did the relationship between CEOs' *total remuneration* and SOEs' performance strengthen over the period 2006 to 2014?

Research Question 3:

What is nature of the relationship between CEOs' remuneration and the performance of Schedule 2 SOEs before and during the global financial crisis (2006 to 2010) and afterwards (2011 to 2014)?

Sub-question 3.1: What is the nature of the relationship between CEOs' *fixed pay* and SOEs' performance for the periods 2006 to 2010 and 2011 to 2014?

Sub-question 3.2: What is the nature of the relationship between CEOs' *short-term incentives* and SOEs' performance for the periods 2006 to 2010 and 2011 to 2014?

Sub-question 3.2: What is the nature of the relationship between CEOs' *total remuneration* and SOEs' performance for the periods 2006 to 2010 and 2011 to 2014?

Research Question 4:

Is the remuneration of CEOs of South African SOEs affected by the variables age, tenure, gender, race, and education?

Sub-question 4.1: What is the effect of the variables age, tenure, gender, race, and education on the *fixed pay* of CEOs of SOEs?

Sub-question 4.2: What is effect of the variables age, tenure, gender, race, and education on the *short-term incentives* of CEOs of SOEs?

Sub-question 4.3: What is the effect of the variables age, tenure, gender, race, and education on the *total remuneration* of CEOs of SOEs?

Research Question 5:

Is there a relationship between CEOs' remuneration and the size of the South African SOEs?

Sub-question 5.1: Is there a relationship between the fixed pay of the CEO and the size of the SOE?

Sub-question 5.2: Is there a relationship between the short-term incentives of the CEO and the size of the SOE?

Sub-question 5.3: Is there a relationship between the total remuneration of the CEO and the size of the SOE?

Given the background provided, as well as South Africa's exceptional corporate context, the link between executive remuneration and company performance could be expected to be unlike what has been reported for developed countries and other developing countries (Ntim, Lindop, Osei, & Thomas 2013).

1.5 RESEARCH CONTEXT

The scope of this study will be limited to SOEs in South Africa. For the purpose of the present study, an SOE is defined as an entity that operates as a business enterprise, with the main shareholder being the South African government (Otieno 2011).

According to the Public Finance Management Act, Act 1 of 1999 (PFMA), there are 87 SOEs in South Africa. However, not all of these SOEs meet the criteria of the definition, or have the characteristics of, a government business enterprise (Otieno 2011: 11), which are:

- being financially and operationally independent;
- able to operate according to ordinary business principles; and
- being self-funding (PFMA 1999).

Given the above characteristics of a government business enterprise, 21 SOEs meet these characteristics, and are listed as Schedule 2 public entities in the PFMA. The present study will be conducted within (and will be limited to) Schedule 2 SOEs in South Africa. Examples of these SOEs are: Eskom, Transnet, South African Airways, and Denel.

Schedule 2 SOEs are major entities that should generate profits and declare dividends. In terms of Section 66 (3) (a) of the PFMA, Schedule 2 SOEs may borrow money through their accounting authorities, which implies that they also have extensive borrowing powers (PFMA 1999).

As will be discussed in Chapter 3, SOEs play an important role in the South African economy, but their performance, as well as the remuneration of their CEOs, has been highlighted and slated by the media. Considering the importance of SOEs in South Africa and the past performance of entities such as Eskom, public scrutiny of SOEs was to be expected.

Research has found either a positive or a negative relationship between company performance and CEO remuneration. Therefore, one would expect a greater understanding of the relationship between company performance and CEO remuneration in SOEs. However, little attention has been devoted to this phenomenon within an SOE environment in South Africa. Therefore, the proposed study will aim to address this gap in the body of knowledge by investigating the

relationship between South African SOEs' performance and their CEOs' remuneration.

1.6 IMPORTANCE AND BENEFITS OF THE PROPOSED STUDY

Despite the widespread research interest in company performance and CEO remuneration, insufficient attention has been dedicated to explaining the link between company performance and CEO remuneration within SOEs, especially in the South African context. This oversight could be detrimental, considering the significant role that SOEs play in the economy (Govender 2010).

In view of the fact that South Africa's disproportional executive payments have been criticized by government, business, trade unions, academics, and the public (Business Wise 2012), a better understanding of the link between executive remuneration and company performance in the South African context is essential from both an academic and a business perspective. Furthermore, considering that it is unclear what role executive remuneration plays in contributing or detracting from the success or failure of SOEs, and in light of what Minister Gordhan called for, it is important to improve understanding of the relationship between company performance and executive remuneration in South African SOEs. The proposed study is important for the reasons discussed hereunder.

From a theoretical perspective, the proposed study will make two valuable contributions to the extant body of knowledge on the relationship between executive remuneration and company performance. Firstly, unlike previous studies in this field, which tended to focus mostly on international companies, the proposed study will provide insight into this phenomenon within the South African context. Secondly, this study will add to the knowledge on executive remuneration and company performance within South African SOEs by using two measures to never used before to test for company performance.

With the wide media debate and increased interest from academia and the popular press in this topic, the proposed research could benefit various stakeholders in

South Africa, namely the management of organisations, organised labour, government, private and public companies, and SOEs. The findings could assist the aforementioned stakeholders to identify the main problems with executive remuneration, and to verify whether there is indeed a problem with executive remuneration in South Africa, especially in SOEs. Furthermore, given the fact that the Presidential Review Committee on State-owned Entities was established to investigate CEO remuneration in SOEs, this study could add further value to the findings of the Committee.

The findings could assist private and public companies to compare the remuneration of their CEOs with that of CEOs in SOEs. They could therefore determine their market competitiveness, as CEOs from SOEs are most likely to be attracted from private companies. In addition, public companies could use the results to determine how the remuneration of their executives compares to the remuneration of executives in SOEs.

Furthermore, this study will add value to the debate on excessive remuneration of executives that has been prominent over the last few decades in many countries. Knowledge regarding relationship between company performance and executive remuneration could be used to determine whether the salaries paid to executives in SOEs are excessive. A better understanding of the type of relationship that exists between company performance and executive remuneration can bring additional insight into this problem. If there is no significant relationship between executive remuneration and organisational performance, it is unlikely that the billions of rands injected into SOEs are being administered effectively.

Government as the shareholder of Schedule 2 SOEs may be interested to know whether the remuneration of CEOs is aligned with the SOEs' performance, with regard to safeguarding the principal's interests. Moreover, government could use the findings from this study to determine appropriate remuneration frameworks for CEOs of SOEs.

1.7 RESEARCH METHODOLOGY, ANALYSIS, AND DATA COLLECTION

The study will make use of a non-empirical, quantitative method, where the objective will be to describe the relationship between the following constructs: *Company performance* and *CEO remuneration*. A literature survey will be used to identify the methodology that other researchers have applied in their research on the questions to be addressed in this study. Using a similar methodology will facilitate both a comparison with other studies, and provide assurance that the methodology to be used in the present study is statistically sound (Bradley 2011: 4).

The present study will be a desktop study, archival in nature, where the researcher will gather information from a variety of secondary sources. This *ex-post facto* methodology focuses on reporting the characteristics of the variables, rather than playing any role in manipulating them (Blumberg, Cooper, & Schindler 2008). The researcher will collect the information from SOEs' annual reports. As a result, the data will be considered credible, having been subjected to a financial audit. Miller (1995) indicated that the most authoritative studies of executive remuneration rely upon secondary data, as are considered to provide valid and reliable data (Attaway 2000).

For the purpose of the present study, secondary data will be collected from the annual financial statements in the annual reports of each SOE. Legislation (Reporting by Public Entities Act, Act 93 of 1992, as amended by Act 30 of 1997) requires government business enterprises to compile annual financial statements. The variables considered will be the components of the CEOs' remuneration and the components of company performance (as will be determined by this study) of each entity, denoted in rand value, for each year of the period specified for the proposed study (2006 to 2014).

The entire population of Schedule 2 SOEs will be used in the study. Organisational performance will be compared to the remuneration of the CEO, to determine statistical significance.

The collected data will be analysed statistically, using SPSS and EViews, to determine the correlation between the key constructs *CEO remuneration* and *SOE performance*. "Pooling performance data into four to five years' average reduces variables, provides a long-term indicator, and provides a more trustworthy and valid measure of company performance than annual measures" (Gomez-Mejia, Tosi, & Hinkin 1987).

1.8 RESEARCH VARIABLES

The research variables to be used in this study are briefly discussed in this section.

1.8.1 *CEO remuneration* components (dependent variables)

Data on CEO remuneration will be obtained for a nine-year period, from 2006 to 2014 (inclusive). The data will be obtained from the selected SOEs' annual reports.

Because of strict disclosure requirements in South Africa, it is mandatory for companies to disclose, inter alia, the CEO's remuneration. The researcher anticipates that certain aspects of CEO remuneration will have a stronger relationship with aspects of company performance than others. The researcher therefore deems it necessary to divide the constructs *CEO remuneration* and *Company performance* into components. This is discussed in greater detail below.

The components of *CEO remuneration* will be the dependent variables, because the intent will be to determine if these vary according to company performance.

Remuneration is an all-encompassing word that includes a variety of reward components. As indicated by 21st Century Pay Solutions (2010), remuneration includes the following.

- ***Fixed pay*** is the guaranteed base pay that executives receive, which is normally a risk-free monthly payment (Ellig 2007).

- ***Benefits*** refers to all financial benefits (pension, medical, and car allowance, among others).
- ***Guaranteed package*** refers to all components of remuneration that are guaranteed, including fixed pay and benefits.
- ***Incentive pay*** includes all components of remuneration that are variable and accrue to an individual based on satisfactory achievement of measures of performance. Incentive pay is made up of short-term and long-term incentives, and is also known as *variable pay*.
    - ***Short-term incentives*** (STIs) are all cash-based payments that accrue to an individual, based on company performance for a 12-month period. They are usually formula-driven and have some performance criteria attached depending on the role of the executive.
    - ***Long-term incentives*** (LTIs) are all monetary and equity awards that accrue to an individual, based on company performance over a period longer than 12 months.
- ***Total remuneration*** includes fixed pay plus short-term incentives, and is also known as *total cost of employment*; and
- ***Total earnings*** consist of fixed pay plus incentive pay (short- and long-term), and is also known as *total cost to company*.

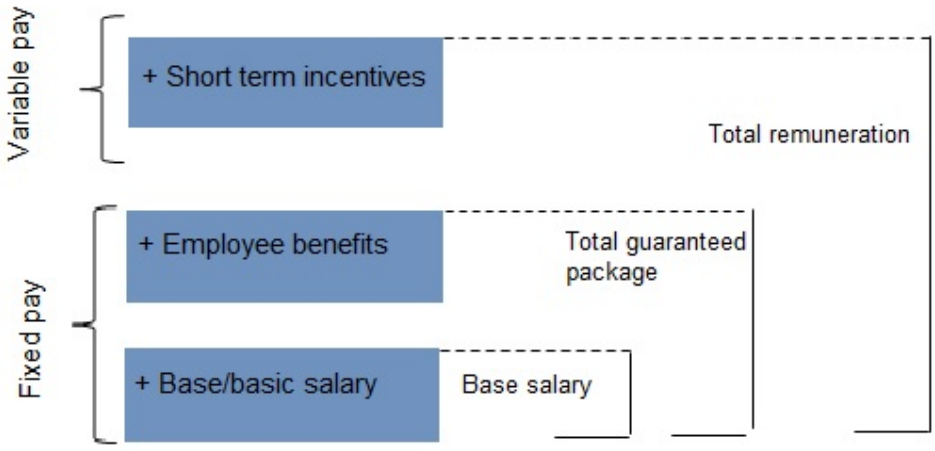
Based on past research, the CEO remuneration components that will be analysed in the present study are fixed pay, STIs, and total remuneration. In his study, Bradley (2011) used the same three remuneration components. Including these categories does not mean that other types of remuneration, such as benefits for executives, perquisites, and even provisions for severance pay are less important, but it is important to focus on the most common components of CEO remuneration (Okasmaa 2009).

In the present study, a distinction will be made between the components fixed pay and STI. The present study assumes that STIs will be more variable than fixed pay, and should therefore be separately analysed. LTIs will not be taken into consideration for this study, as SOEs are not listed on the Johannesburg Stock Exchange (JSE), and few have LTI schemes. Bradley (2013) posits that most other

research on this topic excluded the value of LTIs. LTIs were also excluded in the studies by Theunissen (2010b), Shaw (2011), Scholtz and Smit (2012); Oberholzer (2014), and Theku (2014By excluding LTIs from the present research, the findings will be easily comparable to those of other studies (Bradley 2013). Further, LTIs is not only complicated to define, but difficult to report on given the different schemes companies have implemented over the years (PwC 2016).

Figure 1 sets out the CEO remuneration components to be used in this study.

Figure 1 Components of CEO remuneration



Source: Adapted from Bussin (2012: 105)

The definitions for the variables adopted for this research are:

- fixed pay — basic salary and employee benefits;
- variable pay – STIs (annual cash bonuses); and
- total remuneration — fixed pay plus STIs.

1.8.2 Company performance components (independent variables)

In this study, the company performance components will be the independent variables. Mainly accounting measures will be used to determine company performance, because the data are “verifiable and widely understood” (Murphy

1999: 2490). In addition, no market-based measures (such as Tobin's Q, Market Value Added, Dividend Yield, Price-Earnings Ratio) are relevant to the present study. Furthermore, external auditing checks bring more fairness and accuracy to these measurements of performance (Xu 2013).

Murphy (1999: 2490) states that "the primary determinant of executive compensation is accounting profits." This study will use the following measures to evaluate company performance:

a) turnover/revenue;
b) operating profit (OP);
c) net profit (NP);
d) return on equity (ROE);
e) return on capital employed (ROCE);
f) liquidity ratio (LR);
g) solvency ratio (SR);
h) irregular, fruitless, and wasteful expenditure (IFWE); and
i) audit opinion (AO).

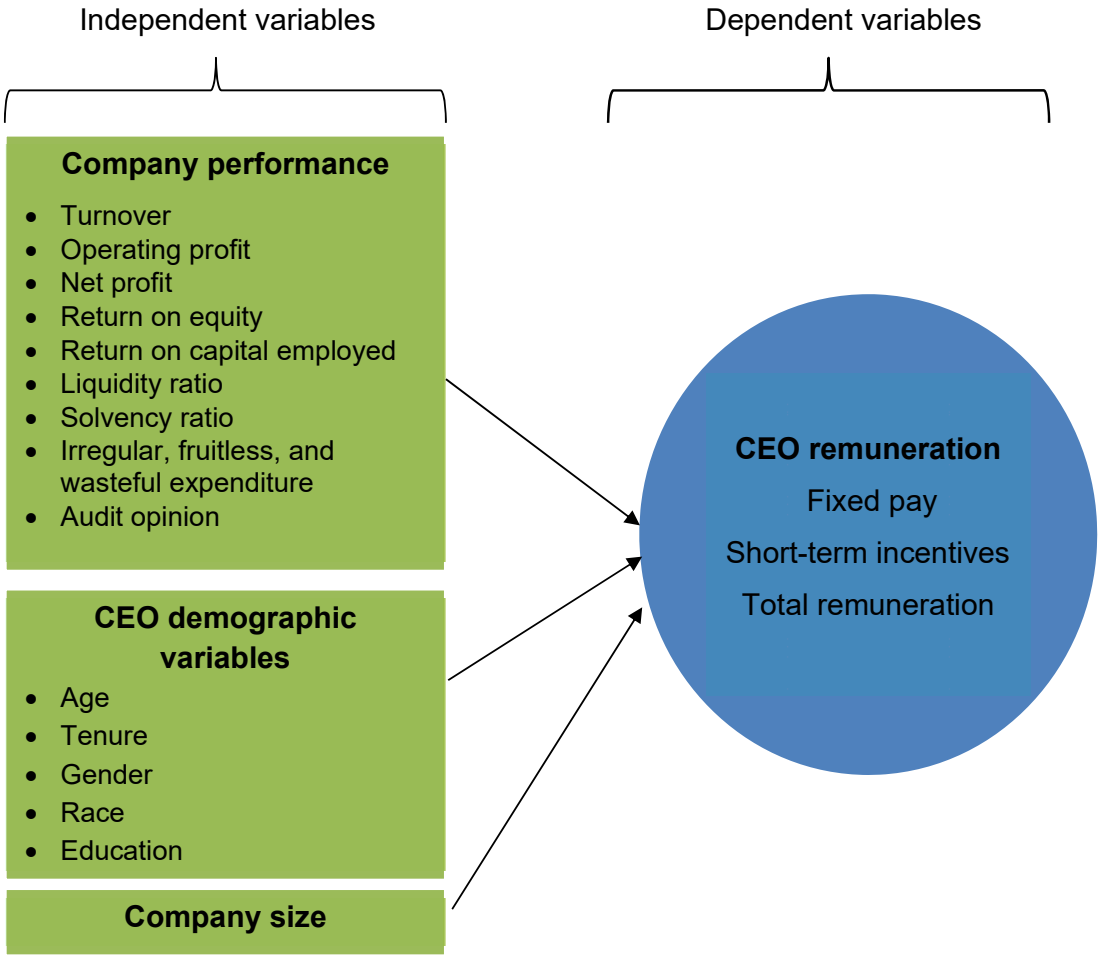
It is important to note that the last two measures have not been previously included in any study. It therefore contributes to the uniqueness of the present study. Individual performance analysis will be limited to the CEOs of the chosen SOEs.

Data will be collected from databases containing historical company performance information. The researcher will use McGregor BFA as the primary source of annual reports. Where data are not available in the database, the researcher will use individual company annual reports to collect the relevant data. If annual reports or data are not available on either McGregor BFA or the SOEs' websites, the researcher will contact the company secretaries to obtain the necessary information.

1.9 PROPOSED THEORETICAL FRAMEWORK

Based on the research variables discussed in Sections 1.8.1 and 1.8.2 the theoretical framework that will be used in the present study to investigate the relationship between CEO remuneration and SOEs' performance from 2006 to 2014 is shown in Figure 2.

Figure 2 Theoretical Framework



The reason why fixed pay, STIs, and total remuneration are included in the model is to establish if there is a difference in each variable before and after adding *Fixed pay, STIs and Total remuneration.*

1.10 ETHICAL CONSIDERATIONS

The statements containing details of the CEOs' remuneration and the organisations' financial performance are readily available as public disclosure documents in the annual reports of the SOEs. This research will investigate CEOs' remuneration in relation to company performance, but no reference will be made to a specific individual or SOE.

Because the information required to conduct this study is publicly available from the annual reports of the SOEs, permission to utilise the data is not required. However, the University of South Africa provided ethical clearance for the use of secondary data for the purpose of this study. In addition, the researcher will not tamper with the data obtained from the various annual reports, which will be analysed using appropriate statistical techniques. The researcher will report on the results in full.

1.11 POSSIBLE LIMITATIONS OF THE STUDY

The proposed study has several limitations related to the context, constructs, and theoretical perspectives. Firstly, the study will be limited to the major SOEs (Schedule 2) in South Africa. This study will therefore exclude all SOEs not classified as Schedule 2 entities. Secondly, the study will focus on the remuneration of CEOs. Therefore, the researcher will not consider the remuneration of other executives of the SOEs.

Other possible limitations are as follows.

- The study will only refer to the specific relationship between performance and pay, and will not provide information on other casual factors influencing the relationship.
- The standards set by the International Accounting Standards Board could have changed during the period 2006 to 2013. This could have had an effect on the SOEs reporting, and impacted the data analysed for this study.
- As mentioned earlier, the researcher will obtain data on company performance vis-à-vis CEO remuneration from the SOEs' annual reports. While there may

be motivation to manipulate these figures, it is presumed that these figures are trustworthy. This is due to the rigorous accounting practices that govern the preparation of financial reports, and the fact that the companies selected are all audited by independent professionals (Bradley 2011: 12).

1.12 ASSUMPTIONS

This study will make several assumptions:

- All Schedule 2 SOEs report the CEO's remuneration, as required by the PFMA and the third King Report on Corporate Governance in South Africa (King III). King IV that was released on 1 November 2006 will come into effect for financial years commencing from 1 April 2017. King IV builds on King III.
- The SOE aims to maximize their profits and dividends.
- The SOEs act in an ethical manner, and obey all local and international laws and regulations where applicable.
- The data collected for analysis are accurate and true.
- The measures utilised for measuring company performance will be applied across all industries — it will therefore not be industry-specific.
- In analysing and interpreting the data from the annual reports, the following will apply across all industries/sectors of SOEs:
  - ❖ Where amounts are re-stated, the actual amounts as reported in the annual report will be used, and not the re-stated amounts. The reason for this is that the actual amounts were used to calculate bonuses.
  - ❖ If CEO remuneration is not finalised at the year-end of a specific year, the following year's comparatives will be used.
  - ❖ Permanent government funding forms part of the SOEs' share capital.
  - ❖ Where investments under resale agreements are settled in less than 12 months, these will be regarded as current assets.
  - ❖ Where funding under re-purchase agreements is settled in less than 12 months, it will be regarded as a current liability.

- The performance of the pension/provident fund does not have a direct link with company performance. The researcher will therefore not consider pension fund performance.

The choice of research methodology was guided by the research objectives and the limitations identified, and is discussed in subsequent chapters.

1.13 TERMINIOLOGY

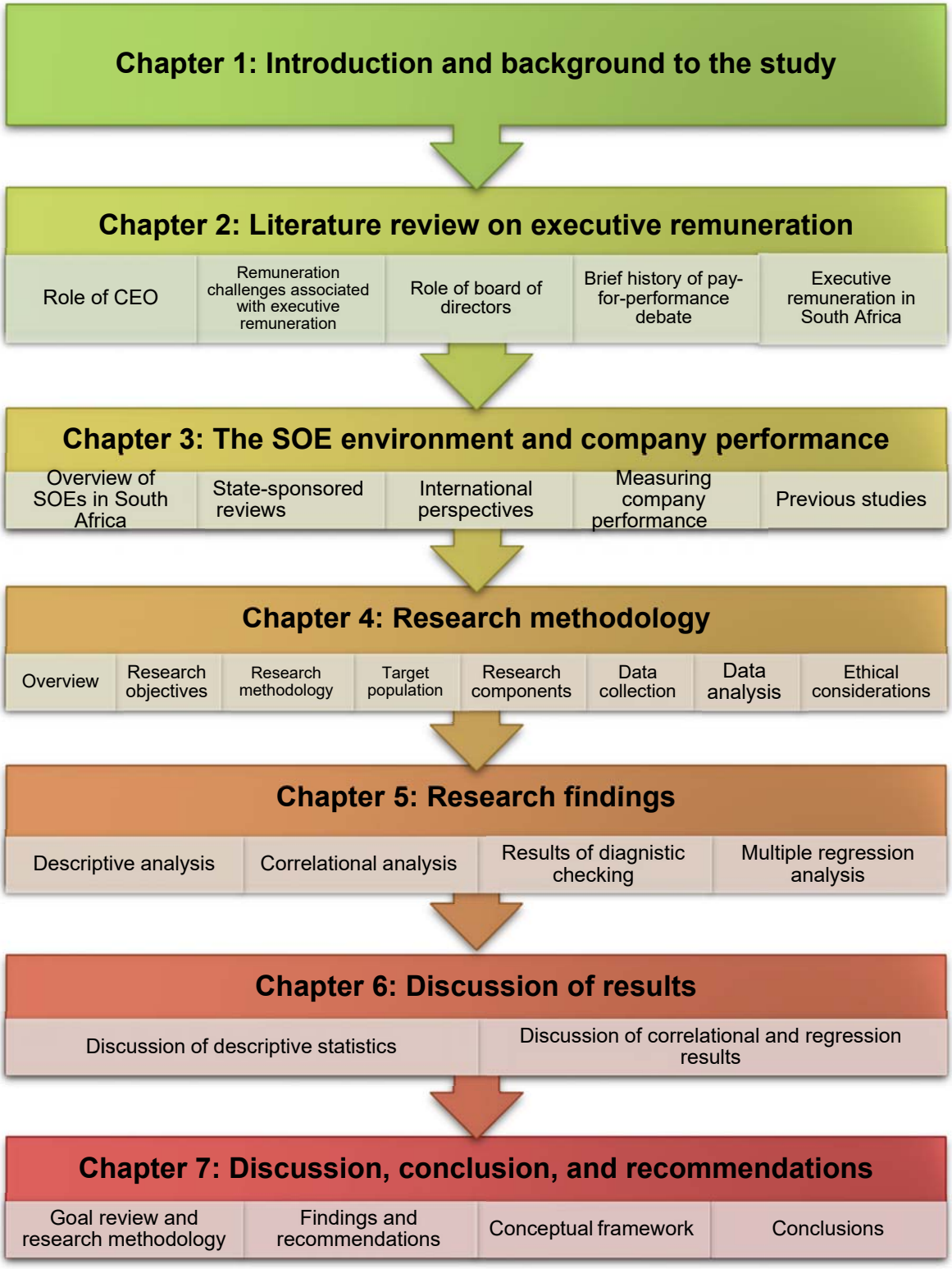
Term	Definition
CEO	Top executive responsible for a company's overall operations and performance. The CEO is leader of the company, serves as the main link between the board of directors (the board) and the company's various parts or levels, and is held solely responsible for the company's success or failure. One of the major duties of a CEO is to maintain and implement corporate policy, as established by the board. Also called President or managing director (BusinessDictionary.com 2017).
Discretionary bonus	A discretionary amount that bears some relationship to the individual's performance (Bussin 2011: 413)
Government	Government refers to the body or bodies responsible for governing the State. In common usage, the term "government" is often used to refer to any part of the State and public administrative apparatus (Theunissen 2000).
Other benefits	The cost of additional guaranteed perquisite benefits (allowances), such as housing, low-interest loans, club fees, professional fees, subscriptions, cell phone allowances, computer allowances, or any other similar benefits (Bussin 2011: 412)
PFMA	The Public Finance Management Act, 1999 (Act No. 1 of 1999) (as amended by Act No. 29 of 1999); the Act promotes the objective of good financial management in order to maximise service delivery through the effective and efficient use of limited resources
LTIs	All cash and equity-based awards that accrue to an individual based on company performance over a period longer than 12 months (PwC 2016:3)
Remuneration	A broad term that encompasses a range of reward components (Shaw 2011); the terms *remuneration* and

	compensation can be used interchangeably (*remuneration* will be used in the present study)
Schedule 2 SOEs	Major public entities that are supposed to generate profits and declare dividends; these entities have the most autonomy of all the public entities, as they operate in a competitive marketplace and are run in accordance with general business principles. In terms of Section 66(3) (a) of the PFMA, Schedule 2 public entities may also borrow money through the accounting authority of that entity, which implies that they also have extensive borrowing powers (PFMA 1999).
SOEs	Also known as state-owned enterprises, parastatals, public sector entities, or public entities. SOEs are independent bodies partially or wholly owned by government. They perform specific functions and operate in accordance with a particular Act (Wendy Owens and Associates 2003).

1.14 STRUCTURE OF THE STUDY

This study will be divided into seven chapters, as illustrated in Figure 3. Chapter 1 provides the introduction and background to the research. Chapter 2 will critically review the existing literature on executive remuneration. Chapter 3 will focus on company performance and provide insight into the SOE environment in South Africa. Chapter 4 will deal with the empirical part of the research, describing and justifying the research methodology and process. Chapter 5 will present the findings of the research. Chapter 6 will provide a discussion of the findings of the research, linking these to findings of previous studies. Finally, Chapter 7 will conclude the thesis by returning to the research questions, describing and reflecting on the contribution of the thesis, and provide suggestions for future research.

Figure 3 Structure of the study



1.15 CHAPTER SUMMARY

In summary, the remuneration of CEOs is an issue that has attracted significant interest over the past couple of years from stakeholders, business groups, and the wider community. Across different sectors and within various countries, concerns have been put forward concerning excessive CEO remuneration practices. Locally and internationally, various interventions were implemented (or are in the process of being implemented) to address the issue of high executive remuneration.

Substantial growth in executive remuneration from the 1990s until recently, and cases of large payments regardless of poor company performance, have increased community concerns that executive remuneration is uncontained. The South African context is no different. In 2008, the then Minister of Finance, Trevor Manuel indicated that government was concerned about pay levels, specifically where there was no relationship to the performance of the company and the executives' remuneration. The concerns regarding excessive remuneration packages have become a prominent focus of community unease regarding the widening gap between the remuneration of executives and other employees, together with large severance packages without explanation.

With inadequate academic contributions to the body of knowledge on the remuneration of CEOs and executives in South Africa, there exists an opportunity and a need to further develop the understanding of the relationship between company performance and CEO remuneration. This study will therefore contribute to the on-going discussion of and limited literature on company performance and CEO remuneration in South Africa, specifically within the SOE environment.

The relationship between components of *CEO remuneration* (*Fixed pay*, *STIs*, and *Total remuneration*) and two variables not previously used in studies of this nature, *AO* and *IFWE* (as reported by the Auditor-General of South Africa (AGSA)) will be used in analysing *Company performance*. It is reasonable to assume that there would be a positive relationship between these two variables and the components

of *CEO remuneration*. In the following chapter, the literature review provides a discussion of executive remuneration in general.

CHAPTER 2: LITERATURE REVIEW

"Excessive CEO pay is the mad cow disease of American boardrooms. It moves from company to company, rendering directors incapable of applying common sense."

J. Richard Finlay, Chairman, Centre for Corporate and Public Governance, 2002

2.1 INTRODUCTION

The primary purpose of this study was to determine the relationship between company performance and CEO remuneration of Schedule 2 SOEs in South Africa. This chapter will provide an overview of the role of CEO, executive remuneration, and the underlying principles of the determination of remuneration for CEOs in the current business environment. The literature review will then continue with a discussion of problems associated with executive remuneration. The chapter will conclude with a brief discussion on the history of the pay-for-performance debate, followed by a discussion of executive remuneration in South Africa.

2.2 ROLE OF THE CEO

Shaw (2011) posits that a number of academics, ranging from financial economists to organisational behaviourists, have contributed to the understanding of the field of executive remuneration. A number of prominent academics, e.g., Jensen and Murphy (2010), Edmans and Gabaix (2009), Yanadori and Milkovich (2002), and Tosi and Gomez-Mejia (1994), have confined their attention to executive remuneration to specifically the remuneration of the CEO.

A CEO's job is extremely complex (Core & Guay 2010). CEOs are often considered "superstars in both academia and the business environment" (Ayaba 2012: 6). The CEO is responsible for the overall management of organisational activities, by providing strategic direction and leadership in execution (Andrews 1980). Andrews (1980) describes a CEO as the architect of organisational purpose, an organisational leader, and a personal leader. CEOs have to provide different forms

of leadership — strategic, moral, and human — and strike a balance between the three (Edersheim 2007). All leaders have three major functions to fulfil in an organisation: setting direction; aligning organisational goals, strategy, and processes; and motivating people (Farkas & Wetlaufer 1996). Leadership requires charisma and vision, as well as the ability to cope with rapid change (Kotter 1999). In a study conducted by Glick (2011), the data supported the notion that the leadership role is one of the most important roles of a CEO, influencing all other roles within an organisation.

As leader, the CEO has a significant effect on the performance of the company. This is believed to be the reason for the significant growth in executive remuneration over the past several decades (Montino 2008). Furthermore, as the CEO performs one of the most important and powerful roles in an organisation in the midst of the turbulence of the 21st century, CEOs' performance today is more important to the organisation than ever (Edersheim 2007; Glick 2013).

Hambrick and Quigley (2014) maintain that CEOs have more flexibility than other executives, as their decisions can affect the entire company, instead of just a unit. The CEO plays a fundamental role in creating value and ensuring business continuity (Conlon & Smith 2010). The CEO also plays an important role in shaping corporate policies (Tian 2013). Moreover, the CEO is uniquely positioned to ensure that a company's purpose, values, and standards are relevant to its business environment (Lafely 2009).

To maintain a competitive advantage and growth, the CEO must ensure that the company competes with the competitors who matter most. Jim (2009: 42) compares the role of today's CEO to that of "an airline pilot navigating through stormy skies. Even if they know that the ride will be rough, they recognize that employees, like passengers on the edge of their seats, are waiting for the reassuring voice over the loudspeaker."

The CEO, who is appointed by the board of directors, acts as the manager of the executives, and is responsible for leading the organisation in the delivery of corporate goals (Shaw 2011). The CEO is the only one held responsible for the

performance and results of the company — not just its own objectives, but also the measures and standards of various, and often opposing, external stakeholders (Lafely 2009). Shaw (2011) supports this view. According to Core and Guay (2010), the CEO is the individual that is ultimately responsible for the company's strategic investments, operating activities, human resource management, financing decisions, and overall company performance. Moreover, because the CEO has specific knowledge that is useful for decision-making that is costly to transfer, it is problematic (or impossible) for the board or shareholders to give the CEO thorough, systematic directives on how this job should be carried out (Fama & Jensen 1983).

Mascarenhas (2009) suggests that, over and above the core role(s) of CEO, CEOs of large companies must fulfil eight key responsibilities. These are: developing growth avenues, raising productivity, competing for talent, managing diverse risks, tightening corporate governance, incorporating sustainability, creating innovation models, and building new infrastructure. While Mascarenhas's research focused specifically on multi-national companies, it is likely that the findings have widespread applicability (Shaw 2011).

Taking the role of the CEO into consideration, based on the above discussion, these responsibilities are difficult, and require skills and competencies of well-educated and knowledgeable individuals. Such talent is scarce. To attract and retain CEOs, they have to be properly rewarded (Kim, Kogut, & Yang 2013).

2.3 EXECUTIVE REMUNERATION

There is no topic in business as controversial as the remuneration of executives, and commentators, as well as executives (Ulrich 2010), often misunderstand the term. Ulrich (2010) posits that a possible reason for this is due to the use of alternative terms such as *compensation*, *pay*, and *reward*. *Executive remuneration* refers to the fixed pay, STIs and LTIs, and related benefits awarded to those who occupy the most senior decision-making positions in private- and public-sector enterprises (Bussin 2011).

The next section examines the origins and development of executive remuneration, and on the consequent composition of executive remuneration packages.

2.3.1 Origins and nature of executive remuneration

Executive remuneration refers to the remuneration paid to CEOs and other senior executives of an organisation, including fixed pay, and STIs and LTIs. The remuneration of executives, identified as a key management challenge, found its way into economic thinking as early as the 1930s (Shaw 2011).

According to Murphy (2012), executive remuneration has developed over time. This is in response to changes in both the economic and the political environment. Frydman and Jenter (2009) theorise that the level and structure of CEO remuneration have changed noticeably over time. The post-WWII era can be divided into at least two distinct periods. Before the 1970s, low levels of pay, and only moderate levels of equity remuneration were observed. From the mid-1970s to the end of the 1990s, the components of some executives' remuneration increased dramatically, and pay disparities between executives and across companies increased (Frydman & Jenter 2009).

Shaw (2011) suggests that the first discussions regarding the remuneration of executives in the context of the modern business environment have widely been attributed to Chester Barnard's book *The Function of the Executive* (Laffont & Martimort 2001). In this pioneering work, Barnard points out that financial incentives are an important factor in encouraging individuals to provide their discretionary effort (Shaw 2011).

This challenge of providing executives with some form of financial and non-financial incentive has developed and evolved over the decades, and the emergence of the principle-agent theory arose as the underlying economic principle driving executive remuneration (Shaw 2011).

The next section will focus on the different components of executive remuneration and the way in which these can affect executive decisions.

2.3.2 Structure and components of executive remuneration

Remuneration structure refers to the relationship between fixed pay and the performance-based, variable components of pay. The structure of executive remuneration packages is used increasingly as a strategic tool to attract, motivate, and retain executive skills in a globally competitive labour market. Walker (2010) concurs with this notion, and postulates that companies can attract the best executives by providing a competitive remuneration package.

Diamantopoulos (2012) postulates that the components of executive remuneration vary, and each component has its own, individual effect on the total remuneration that the executive will receive. He further states that executive remuneration contains various elements, depending on the corporate governance of the company and the contract between the CEO and the board of directors.

Executive remuneration packages usually consist of basic salary, benefits, STIs, and LTIs, therefore, a combination of fixed and variable pay (Bussin 2012). Executives of listed companies often receive a fixed monthly or annual salary. The fixed portion includes salary and other benefits not linked to performance, whereas the variable portion differs according to the results of various measures of company performance (21st Century Pay Solutions 2010). According to Frydman and Jenter (2009), considerable heterogeneity in pay practices exists across companies, and most CEOs' remuneration packages comprise similar basic components. The relative importance of these remuneration elements, to executives and the company alike has, however, changed significantly over time.

Huang (2010) posits that the structure of a CEO's remuneration is more complicated than just a base salary plus a bonus. It is, furthermore, important to understand the special structure of CEOs packages before considering whether CEOs are overpaid (Huang 2010).

Ellig (2007) postulates that the design of an executive's remuneration package will follow the path where it is the easiest for the executive to qualify for a payment. Should STIs be difficult to obtain due to factors outside the control of the CEO, the structure of the remuneration would lean towards a guaranteed cost to company or

fixed pay. The contrary is also true; should STIs be easier to obtain, the structure of remuneration will lean towards more incentive pay (Nel 2012).

WorldatWork's Total Rewards Model positions remuneration as one of six key factors of a total rewards structure that collectively define an organisation's strategy to attract, motivate, retain and engage employees (WorldatWork 2015). These factors are:

- **compensation (remuneration)** provided by an employer to its employees for services rendered and included both fixed and variable pay tied to performance levels
- **benefits** are used to supplement the cash remuneration employees receive. This provide security for employees and their families;
- **work–life effectiveness** is a specific sect of organisational practices, policies and programmes that help employees achieve success at both work and home;
- **recognition** can be formal or informal, that acknowledge or give special attention to employee performance and support business strategy by reinforcing behaviours that contribute to organisational success;
- **performance management** includes establishing expectations, skill demonstration, assessment, feedback and continuous improvement; and
- **talent development** provides the opportunity and tools for employees to advance their skills and competencies in both their short- and long-term careers.

WorldatWork deems remuneration as one of many benefits that a company has to offer in order to attract, retain, and motivate employees (WorldatWork 2015). This model is influenced by the characteristics and culture of the organisation, and include programmes, practices, elements and dimensions that organisations can use to offer and design a value proposition that benefits both the organisation and the employee (WorldatWork 2015). Figure 4 provides a graphic representation of the Total Rewards Model.

Figure 4 Total Rewards Model

Source: WorldatWork (2015)

In the present study, it was important to consider the components of remuneration individually, in order to determine the most common types of CEO remuneration options (see Otieno 2011: 26). The reason for this is that it would be expected that salaries and bonuses constitute the greatest part of the CEO's remuneration variable. A clear distinction needs to be made between the following components of a CEO's remuneration package.

The **fixed pay (or base/basic salary)** is the reward offered to the CEO for taking responsibility as the manager of the company (Swatdikun 2013). Ellig (2007) regards it as the cornerstone of a remuneration programme. Performance is not linked to this remuneration component, and it therefore remains fixed (Ulrich 2010). The fixed pay is usually determined in line with industry norms of aligning salary levels within hierarchical level and functional areas, with consideration to the size of the company (Xu 2013). Ellig (2007) argues that a fixed pay is a function of the

responsibility and workload of an individual. Generally, the annual fixed pay signifies a small percentage of a CEO's total remuneration (Martocchio 2013). In addition, an increase in the basic salary will have a positive influence on many other remuneration components (Murphy 1999), because, for example, bonuses are often calculated as a percentage of the fixed pay (Xu 2013).

A bonus is a form of remuneration based on individual, group, or corporate performance, and is single payments for performance companies use to reward employees for attainment of specific, extraordinary goals (Martocchio 2013). For most executives, it is based on group performance. To encourage the achievement of short-term objectives, executives are awarded annual bonuses (Murphy 1998). Jensen and Murphy (2004) state that one advantage of bonuses is that these are quite accurate indicators of the actual performance of executives, because bonuses are awarded in respect of the achievement of operational objectives that lead to value creation. On average, a CEO's bonus is equivalent to approximately 50% of his or her fixed pay (Jensen & Murphy 2010). However, Andersson, and Andersson (2006) posit that previous research indicate that bonuses do not make a difference for the performance of a company. For example, Weinberg 1995 found no relationship between CEO bonuses and company performance. Resnick (2013) suggests that South African CEOs' bonuses are somewhat higher than in other countries, regardless of executive remuneration, overall, being lower than that of many other countries.

Four types of bonuses are common in executive remuneration (Martocchio 2013).

- **Discretionary bonus:** This is awarded to executives on a voluntary basis; the board of directors weighs four factors in establishing the amount of a discretionary bonus: company profits, the financial situation of the company, business circumstances, and predictions regarding the future of the company.
- **Performance-contingent bonus:** This is paid when the CEO's performance meets specific criteria. The performance appraisal system for determining bonus awards is often the same system used for establishing merit increases or salary increases.

- **Predetermined allocation bonus:** This is calculated using a fixed formula. The amount available to pay as bonuses depends on company profits.
- **Target plan bonus:** This is linked to the CEOs' ability to meet targets, and is thus directly linked to their performance. The bonus amount increases to match performance. In theory, executives do not receive bonuses when their performance is lower than minimum acceptable standards.

For the purposes of the present research, all four types of bonus were considered.

Executives are paid STIs to recognise their progress toward fulfilling the strategic goals of the company. These STIs are designed to reward CEOs for meeting intermediate performance criteria (Martocchio 2013).

Executive remuneration comprises a fixed and a variable portion. The fixed portion comprises the fixed pay and other benefits not linked to performance, whereas the variable portion varies according to specific measures of company performance (21st Century Pay Solutions 2010).

According to Resnick (2013), the large number of components that make up remuneration packages makes the executive remuneration structure in South Africa complex. This author furthermore indicates that research by Debert, Torres, and Papadakis (2008) revealed that these components are regularly integrated into salary packages and additional incentives.

Various research contributions point out that, in remuneration, the following variables are considered to be significant: fixed pay, benefits, STIs, LTIs, *ad hoc* or other payments, and share ownership (Shaw 2011: 22). Within the framework of the pay-for-performance relationship, fixed pay (the sum of base pay and benefits), STIs, and LTIs are the measures that appear to be the most widely used. *Ad hoc* or other payments are hardly ever included, as they are, by their own admission, unrelated to performance. (Shaw 2011: 23). Despite a bonus being considered performance-based remuneration, it is often inadequately tied to performance. Bonuses are often based on easily achievable performance targets that do not reflect good performance relative to that of peer companies (Bebchuk & Fried 2003).

Although Van Blerck (2012) posits that LTIs should ideally be integrated in studies on CEOs' remuneration and companies' performance, Lippert and Porter (1997) observe that several studies have only utilised fixed pay and STIs as measures of remuneration, due to time constrains (Murphy 1985). LTIs will not be included in the present study. Shaw (2011) noted that several credible studies have focused on fixed pay and STIs, and that the validity of these studies were not compromised by the exclusion of LTIs. Moreover, Bradley (2013) stated that most other research on this topic left out the value of LTIs from the data set. Omitting these from the current research, the findings are comparable with those of other studies.

2.3.3 Key issues in executive remuneration

While any discussion on executive remuneration seems to invite controversy, a few major issues have recently attracted much attention, such as the perceived excessive remuneration of CEOs compared to company performance (Surve 2008). De Wet (2012) concurs with this, stating that the media regularly reports a growing number of remuneration practices where there is no alignment between executive pay and company performance. Okasmaa (2009) posits that, despite the large number of studies on the topic of executive remuneration, it remains difficult to explain. One reason for this is the almost "inexistent" link between performance and pay, making it uncertain what economic logic remuneration packages have (Okasmaa 2009: 43). Kirkpatrick (2009) posits that, although the academic world notes the risks of excessive CEO remuneration, these are not widely discussed and analysed.

Few CEOs would concede, at least openly, that they are overpaid. Concern regarding executive remuneration has, however, been growing for some time. It is a delicate matter for many CEOs and for the boards of the companies that employ them (Morrow 2012). The remuneration of CEOs has been a topic of much interest for journalists and academic researchers over the last 30 years, due to the sharp increase in CEO remuneration since the late 1980s (Diamantopoulos 2012: 4). This trend is best illustrated by a Forbes study that revealed that, in 1986, USA's Top 10 highest paid CEOs, in aggregate earned US$57.88 million. In 2012, the top ten CEOs in terms of remuneration earned US$616.4 million, which was ten times as much as the 1986 total (after taking inflation into account) (Sforza 2013).

Newspapers often report on the disproportionate pay of executives compared to the salary of general employees (Diamantopoulos 2012).

According to Bussin (2011), the three issues that continuously emerge in public remarks on executive remuneration are: Do executives deserve the amounts they are paid? Are the variable components linked to suitable measures of performance? Is the overall remuneration structured in a way that is justifiable and trustworthy to shareholders, the business media, and the community as a whole? By far the most controversial issue is the amount of remuneration that executives receive (Surve 2008).

The main criticism against executive remuneration is the widening gap between executive remuneration and that of other employees. Ulrich (2010) states that nobody should earn more than five times the wage of an ordinary worker, while Drucker, as far back as the mid-1980s, argued that the difference should not be greater than 20 times, and that the growing gap may threaten the credibility of business leadership. Interestingly, in South Africa, executives earn more than 400 times the salary of an ordinary employee (Ulrich 2010).

Bussin (2011) asks whether the amounts paid to executives are warranted. There is the concern of supply and demand. There is general concurrence that rare capabilities and skills are required to succeed in organisational leadership roles. This poses a challenge, as the available talent pool is small, and a number of business situations require highly specialised skill sets that are not easily obtained (Bussin 2011).

Apart from high executive remuneration, another key issue is the different ways in which executives are paid. If executives were paid a fixed pay only, it would be straightforward to assess salaries paid to executives (within a company, or across companies, industries, and countries). It would then also be possible to identify the highest salary, to ascertain how executive pay changed over time, and how executive pay compares to wages paid in other occupations. However, the following needs to be considered (Murphy 2012: 6).

- Executives receive remuneration in an array of forms, consisting of fixed salaries, annual bonuses, LTIs, restricted stock, performance shares, and retirement benefits, amongst others.
- Several of these types of remuneration are calculated using performance measures over a single or multiple years, and it is not always clear how (or when) these were calculated.
- Executives receive lump-sum amounts at different points in time, such as signing-on bonuses when joining a company, and severance payments upon departure. Additionally, some payments 'earned' while employed (such as defined benefit pension payouts) are not paid until long after the executive has departed and his remuneration is no longer reported. It is not clear how, or when, to measure these aspects of remuneration.

Hayes and Schaefer (2009) present the 'Lake Wobegon Effect' as a possible reason for the surge in CEO pay. According to radio host Garrison Keillor, all the children in his fictional home town of Lake Wobegon are above average, all the women are strong and all the men are good-looking. The Lake Wobegon effect is the tendency of people to overestimate their abilities and performance in relation to those of others (Van Vugt 2013: 2). This seems to be the case with CEOs (Theunissen 2012). Hayes and Schaefer (2009) claim that no company wants to concede to having an inept CEO, so each company wants its CEO's remuneration to put him/her above the median pay level of comparable companies. Hence, when one company's CEO receives an increase, another (competing company's) CEO gets one too, irrespective of performance (Hayes & Schaefer 2009). The result is an endless benchmarking exercise, with companies pushing CEO remuneration ever higher, without taking their companies' specific conditions into consideration (Theunissen 2012).

2.3.4 Theoretical perspectives on executive remuneration

This section examines different theories on executive remuneration by uniquely combining various management theory lenses. Mustapha (2012: 52) postulates that "theory acts as the basis to identify and raise research problems." It, furthermore,

helps to identify relevant factors, concepts, variables, and relationships, and aids interpretation and understanding of observations and data. (Mustapha 2012).

A number of theories were developed over time to explain executive remuneration. However, due to the ever-changing nature of the field, there is not yet a faultless theory (Ulrich 2010). Snieder (no date) posits that a few theories have been influential in this regard, namely agency theory, the managerial power approach, and stewardship theory. However, most of the studies on executive remuneration adopted multiple theories to explain executives' remuneration (Sun, Zhao, & Yang 2010; Mustapha 2012).

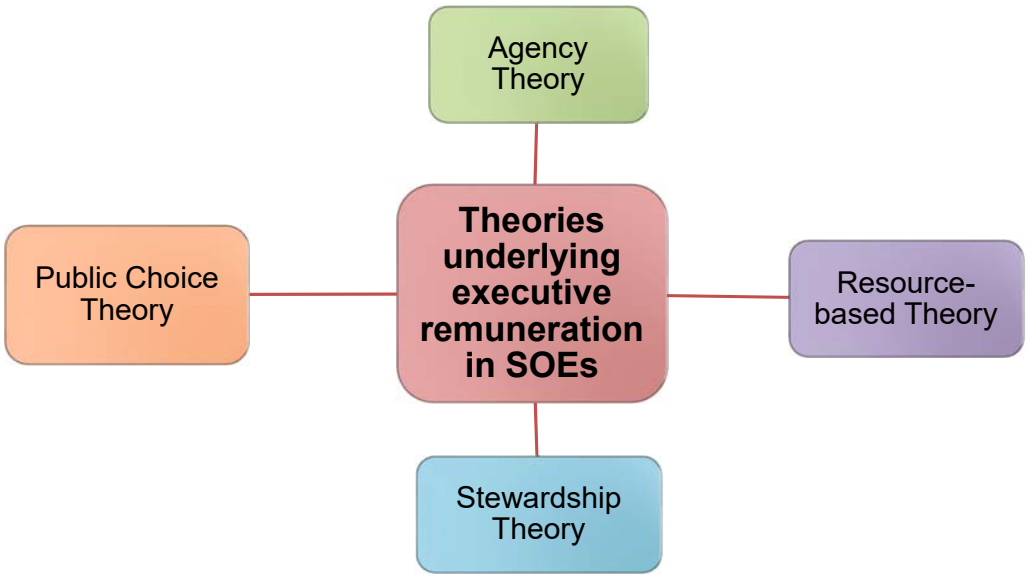
South African studies have used the following theories: agency theory, social comparison theory, stakeholder theory, managerial power theory, and the tournament theory (Ulrich 2010). In Otieno's (2011) study, the focus was on the relationship between financial performance and executive remuneration from an agency theory perspective. Shaw (2011) discussed the managerial power theory, labour market theory, optimal contracting theory, and principal–agent (or agency) theory. Van Blerck (2012) discussed principal–agent theory, optimal contracting theory, and the managerial power approach/theory.

Mbo and Adjasi (2013) examined the fundamental drivers of SOEs' performance in Africa. These authors concluded that SOE performance could be explained in terms of the following organisational theories: resource-based theory, agency theory, stewardship theory, and the public choice theory. Mbo and Adjasi (2013) suggest that the factors affecting and influencing SOEs' performance are varied, and that there is no particular theory to best clarify or predict the relationship between SOEs' performance and executives' remuneration. In fact, in his article, Bussin (2014) contests the idea that there is one central theory that underpins CEOs' remuneration.

For the purpose of the present study, only the theories found by Mbo and Adjasi (2013) that explains SOE performance, and illustrated in Figure 5, will be discussed, The reason for including these theories are, due to the fact that that Mbo and Adjasi (2013) found that SOEs' performance could be explained in terms these theories.

Second, the remuneration benchmarking theory provides a possible explanation of the theoretical CEO remuneration framework. Annexure A lists more comprehensive explanations of the different theories that explain the composition and importance of executive remuneration packages.

Figure 5 Overview of Theories of Executive Remuneration



2.3.4.1 Agency theory

Agency theory considers a contracting problem between principal and agent with competing interests (Jensen 1983). It describes a principal-agency relationship as an agreement in which one or more people employ and delegate there authority to another to manage business on their behalf (Jensen & Meckling 1976). Shareholders are viewed as the principals, and management is considered the agents (De Wet 2012). In the case of SOEs, the CEOs are the agents. According to De Wet (2012: 59), agency theory is the 'golden thread' that governed previous research on executive remuneration and company performance. This theory addresses the potential conflict of interest between shareholders and management, which are referred to as agency problems (Theku 2014). Otieno (2011) posits that the agency problem has received attention because the costs associated with it can reduce the value SOEs and, consequently, reduce shareholder wealth.

In large organisations, the agents who control the company operations are separated from the shareholders who invest their money in the firm (Diamantopoulos 2012). The shareholders (in the case of SOEs, it is mostly government) delegate day-to-day decision-making in the company to the CEO and directors, who are the agents. This is where a problem arises. Agents do not necessarily make decisions in the best interest of the principal (the shareholder), because of conflicting interests. CEOs set as their primary goal the pursuit of their own personal ambitions, such as high bonuses. On the other hand, shareholders aim to maximise their wealth (Diamantopoulos 2012). In practice, managers therefore focus on company investments that provide high short-term profits, because their remuneration depends on these profits. Diamantopoulos (2012) states that these actions occur at the cost of the maximization of shareholders' wealth that is achieved by long-term growth and prosperity.

In addition, in the case of SOEs, the difficulty of defining the ultimate principals of SOEs impedes the development of suitable procedures for aligning the agent's interest with those of the principal (Mbo & Adjasi 2013). This problem, also noted by Toninelli (2000), leads to executives in SOEs being 'agents without principals.' As much as the owner of an SOE is the government, there is often confusion with regard to who is representing government. Is it the central government, local government, bureaucrats, or the public (Mbo & Adjasi 2013)? Li and Xia (2007) highlighted the importance of the agency problem in the case of SOEs and questioned the ability of the principal to monitor the agent. This inability creates more opportunities for SOE executives to participate in wasteful projects to their own advantage, for instance, empire building at investors' cost (Li & Xia 2007).

Although the agency theory has been the prevailing rationale in linking executive remuneration and company performance, some researchers have questioned the soundness of this view (De Wet 2012). Mengistae and Xu (2004) examined the extent to which the agency theory explained CEOs' remuneration in SOEs in China during the 1980s. They found that the ability of the CEO's remuneration to influence company performance decreases with the variance in performance. Mustapha (2013: 58) postulates that the agency theory is criticised mostly because of its "unrealistic assumptions." Mustapha mentions, for example, that the agency theory

adopts a causal relationship between the executives' actions and company performance, disregarding the effect of other factors. This theory has also been criticised as under-socialised, due to its failure to explain cross-country differences (Bruce, Buck, & Main 2005; Filatotchev & Allock 2010).

Toninelli (2000) suggests that the agency problem remains in SOEs, because it may not be clear who exactly represents the principal. Nonetheless, there have been instances where politicians, acting as the principal, have applied pressure on an SOE and put in place incentives and policies to encourage agents to act in the principal's interest (Mbo & Adjasi 2013). Notwithstanding the above arguments, Mwaura (2007) and Fudanga and Mwaba (2006) ascribed the failure of some SOEs to the agency problem itself.

2.3.4.2 Resource-based theory

According to the resourced-based theory, a company derives a competitive advantage from its unique resources and capabilities. Resources include capital in various forms, land, employees with special skills, and other types of resources, whereas capabilities are a company's ability to integrate and utilise its resources to gain a competitive advantage (Li & Xia 2007). Resource-based theory proposes that a company develops its strategy based on its specific resources and capabilities.

The resource-based theory was popularised by, among others, Hamel and Prahala (1994), who visualised organisations as bundles of assets, which, dependent on how these assets are utilised, make one company perform better than the next (Mbo & Adjasi 2013). Consistent with this suggestion, Grant (2003) holds the view that a company's resources are its primary source of good performance.

Mbo and Adjasi (2013) posit that SOEs present a thought-provoking example with regard resource-based theory. These authors posit that it is very noble that resources offer extraordinary performance if they are exceptional and imperfectly imitable. However, in many cases, SOEs remain monopolies under legislation providing them with exclusive rights to own and operate specialised assets. Classic

examples include power transmission assets owned by electricity corporations, such as South Africa's Eskom.

2.3.4.3 Stewardship theory

The stewardship theory offered by Donaldson and Davis (1989; 1991) holds that executives, instead of being motivated by individual goals, act as stewards whose efforts are aligned with the expectations of shareholders (Cao, Lemmon, Tian, & Pan 2009). This theory presumes that executives do not always act in self-interested ways, and, if a situation of a conflict of interests arises, they often place the interests of the company above their own (Sun *et al*. 2010). According to Donaldson and Davis (1991: 51) this theory holds that the executive wants to "do a good job, to be a good steward of the corporate assets. As a result, stewardship theory maintains that there is no inherent, general problem of executive motivation."

According to the stewardship theory, there is no need to monitor or control the CEO using techniques such as bonuses (Grahan & Högfeldt 2010). Jensen and Meckling (1976) furthermore argue that a company will perform better if the CEO has a more independent role, as the CEO is the person who knows the company the best. Donaldson and Davis (1991) propose that the stewardship theory holds that differences in performance result from whether the structural situation in which the executive is placed enables effective action by the executive. De Wet (2012), in addition, postulates that managers, according to this theory, focus on intrinsic rewards that are not easily measured.

2.3.4.4 Public Choice theory

Public choice theory is a subdivision of economics that advanced from studies on taxation and public spending. It was developed in the 1950s, and received extensive public attention in 1986, when James Buchanan, one of its two leading designers (the other was his colleague Gordon Tullock), was awarded the Nobel Prize in economics (Shaw 2008).

Public choice takes the same philosophies that economists use to analyse people's actions in the marketplace and applies them to people's actions in collective decision-making. Economists who study behaviour in the marketplace assume that

people are motivated mostly by self-interest. While most people align their actions with their concern for others, the dominant motive for people's actions in the marketplace —— is self-interest. Public choice economists have the same opinion — that even though people acting in the political sphere have some concern for others, their primary consideration, irrespective of their roles, is self-interest (Shaw 2008).

The public choice theory assumes that, even if political leadership has some concern for the interest of others, such concern is minimal, as the most important interest they serve is their own (Mbo & Adjasi 2013). SOEs are government's own vehicles for service delivery, and since politicians run governments, it follows that politicians may have control over the direction of SOEs (Mbo & Adjasi 2013).

According to the public choice theory, economic efficiency of SOEs is challenged by the fact that the politicians do not have a personal equity stake in these entities (Mwaura 2007). Consequently, they have no financial incentive to ensure that executives effectively manage SOEs. This theory therefore assumes that SOEs will operate in line with the interests of politicians, and not necessarily according to the executives' interests. This undermines the core principles of the agency theory, resulting in poor performance (Mbo & Adjasi 2013: 8).

Moreover, the public choice theory appears to be in conflict with the view that stakeholder interests can be considered, as it clearly considers political interests as having a supreme influence, to the disadvantage of good performance (Mwaura 2007).

2.3.5 Determinants of executive remuneration

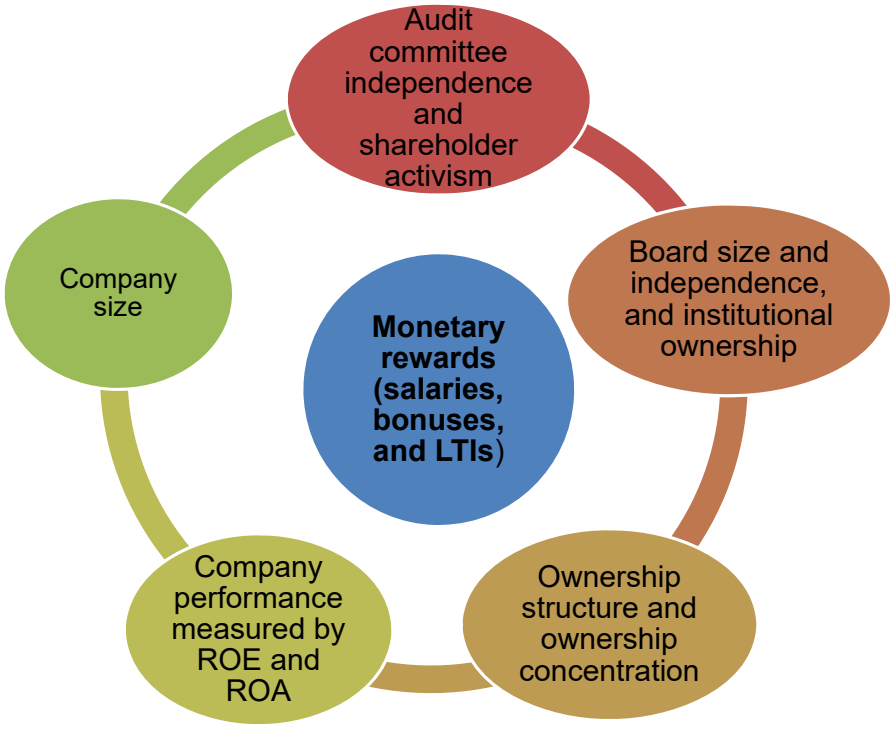
A number of studies have examined the determinants of executive remuneration and the relationship between executive remuneration and company performance. As shown by Murphy (1999) in his broad review of the literature, most empirical papers have focused on CEOs' pay in the USA, and used data sets that were collected from samples consisting of listed private companies (Menozzi, Erbetta,

Fraquelli, & Vannoni 2011). The literature on SOEs from a South African perspective is sparse.

Examples of studies focusing primarily on the determinants and/or effects of CEO- and top management remuneration are those by Gibbons and Murphy (1990), Jensen and Murphy (1990), Tosi, Werner, Katz, and Gomez-Mejia (2000), Aggarwal and Samwick (2003), Jensen and Murphy (2010), Grund and Kräkel (2012), and Kampkötter (2012). Prior research, when examining the pay–performance link, found that determinants differ across the various components of remuneration (McKnight & Tomkins 1999).

According to Shah, Javed, and Abbas (2009), a number of factors play a key role in determining CEO remuneration, as illustrated in Figure 6.

Figure 6 Model of Determinants of CEO Remuneration



Source: Adapted from Shah *et al*. (2009)

The model in Figure 6 offers an outline of the determinants of CEO remuneration, including a corporate governance view, as well as the company's size and a performance view.

A study conducted by Lee (2010) investigated three different categories of remuneration, namely guaranteed pay, STIs, and LTIs, and the determinants that are currently utilised in setting these categories (from a South African perspective). Lee's findings suggest that the most popular determinants are: complexity of work, job size, executive track record, affordability (for the purpose of Lee's study, *affordability* refers to whether or not the company has the funds for executive remuneration), and organisational growth. To determine the executives' STIs, the most popular determinants taken into consideration are affordability, organisational growth, economic value-add, and shareholder return. Table 1 presents the different determinants/variables of executive remuneration obtained from the literature.

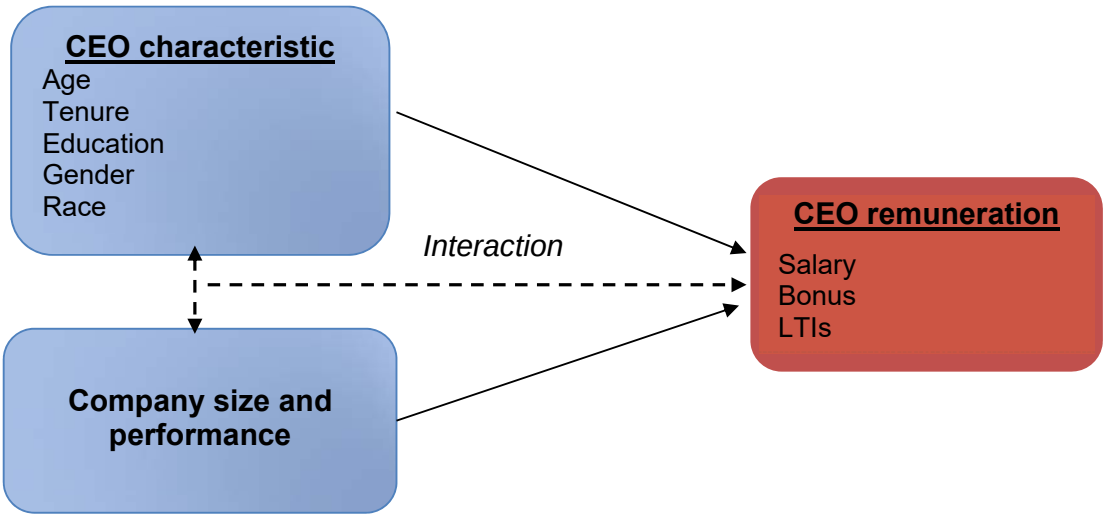
Table 1 Determinants of Executive Remuneration

1.	**Organisation size**	Turnover, number of employees, and value of assets
2.	**Organisation performance**	Profitability, return on investment, and value added
3.	**Executive-specific factors**	Age, tenure, and education
4.	**Organisational structure**	Holding, subsidiary or single-unit organisation, capital- or labour intensive
5.	**Job- or position-specific factors**	Level of decision-making, consequences of error, and organisational level
6.	**Job complexity**	The size if the job, measured by job-sizing instruments

Source: Adapted from Bussin (2011)

From Table 1, it is evident that different determinants/variables are used in setting executive remuneration. Figure 7 illustrates that the CEO's age, the organisation's size, and the organisation's performance may have a direct influence on the CEO's remuneration. These are briefly discussed below.

Figure 7 CEO and Company characteristics and remuneration



Source: Adapted from McKnight, Tomkins, Weir, & Hobson (2000)

Various theoretical approaches are used to develop hypotheses regarding determinants of remuneration, which are typically categorised into three different dimensions, namely job-, employee-, and organisational characteristics (Kampkötter 2012).

According to Sharma and Fayyaz (2000), previous research found four classes of relevant variables, namely (1) company size, (2) company performance, (3) industry, and (4) human capital attributes (i.e. education and tenure). For the purpose of the present study, the focus will be on CEO characteristics (age, tenure, gender, race and education), and company size and company performance as company characteristics. Interestingly, however, Falk, Murphy, Shirreff, Volkart, and Widmer (2004) posit that cases of excessive executive remuneration are difficult to explain using the traditional determinants of executive remuneration, such as the company's performance, its size, etcetera. These authors investigated a key determinant of excessive executive remuneration — conflicts of interests within boards. This aspect is discussed in Section 2.4.

2.3.5.1 CEO characteristics as determinants of remuneration

In an organisation, the CEO is first among equals. A CEO's characteristics in terms of for example age, and education, have been found to have an important

relationship with his or her remuneration (Sarkar 2013). The literature advocates that a number of CEO-specific characteristics have an effect on a CEO's remuneration (Sarkar 2013; Pereira Alves, Couto, & Francisco 2014).

Sharma and Fayyaz (2000) categorise employee characteristics as human capital variables. The logic underlying the link between human capital variables and pay levels is that individuals who make personal investments in job-relevant skills and experience should earn a premium (Sharma & Fayyaz 2000: 82). The profile and personal attributes of an executive have a link with his or her level of remuneration, but it is difficult to measure to what extent which attribute has an impact (Okasmaa 2009). In this regard, Gomez-Mejia, Paulin, and Grabke (1995) state that personal attributes play a greater role in setting the fixed pay than in setting variable remuneration.

(a) CEO's age

Age is a proxy for experience, and has been the subject of much research in labour economics (Cole & Mehran 2008: 10). CEOs with more experience should have more knowledge, skills, and experience (Baptista 2010). However, previous research provided varied results with regard to CEOs' age (McKnight & Tomkins 2009: 28). The reason for these contradicting findings may be partially clarified by the fact that prior research has, in general, depended on a single measure of CEO remuneration — total of fixed pay plus bonus (McKnight &Tomkins 2009).

Deckop (1989) argues that a CEO's age has little effect on his or her remuneration, whereas Finkelstein and Hambrick (1989) found an inverted u-shaped relationship between CEOs' age and their remuneration. The results of their study indicate that CEO cash remuneration increases until the age of 59 years, where after it starts to decline. McKnight *et al.* (2000) further support this where their findings also indicate that CEO remuneration positively relates to a certain age, but it starts to decline from the age of 53 as the personal preferences of CEOs towards the mix in pay components change. This is in line with the notion that the need for cash will weaken as one gets older because of a decrease in human life-cycle related obligations and dependencies (e.g. siblings) (McKnight *et al*. 2000).

Conyon and Murphy (2000) propose a significant, concave CEO age-earnings profile for cash (fixed pay), turn downward after the age of 55, and for total remuneration, after the age 43. However, Conyon and Murphy used data for only one year. Nulla (2014) posits that the aforementioned relationship is consistent with the view that earnings over time are in line with CEOs' need for cash, which tends to decrease as expenditures such as child-rearing expenses are no longer a consideration.

On the other hand, Bradley (2013) found that bonuses positively correlate with age. For every year by which the CEO's age increases, the bonus payable to the CEO increases. Bradley (2013: 560) explains that, while not likely, it is possible that older CEOs can demand greater bonuses, solely owing to their increase in rank and status within the company. Lin, Kuo, and Wang (2013) found that older CEOs receive higher fixed pay This finding offers support for the argument that a CEO's age relates to the CEO's ability to influence the board's pay determination process (Lin *et al*. 2013: 38).

(b) CEO's tenure

Tenure has also received some attention from CEO remuneration researchers. Researchers measure tenure by the number of years the executive has served as CEO (Shah *et al*. 2009), and can be seen as a proxy for entrenchment (Baptista 2010). Lengthy tenure increases the chances of the CEO influencing the selection of board members, and it generally leads to stronger relationships with board members. Because board members play a significant role in the determination of a CEO's remuneration, tenure could explain a CEO's remuneration (Banghøj, Gabrielsen, Petersen, & Plenborg 2010; Baptista 2010). McKnight and Tomkins (2004) state that, through increased tenure, the CEO may gain control over the pay-setting process and, in turn, be able to design remuneration schemes to suit his/her preferences.

In the literature, the empirical evidence of the relationship between tenure and CEO remuneration is mixed. Finkelstein and Hambrick (1989) found a curvilinear relationship between executive pay and tenure (if graphically depicted, will show a U-shaped curve), whereas O'Reilly, Main, and Crystal (1988) found a negative

association. Hill and Phan (1991) maintained that tenure has little or no effect on CEO remuneration. Attaway (2000) found a positive association, whereas Randhøy and Nielsen (2002) found no association between tenure and level of pay. Carothers (2004) found that CEO pay significantly relates to the number of years a CEO remains with the company. This is supported by Bertsch and Mann (2005) who found a strong relationship between CEO pay and tenure. Baptista (2010) found that tenure significantly influences the cash remuneration (basic salary, director's fees, cash bonus, benefits in kind and director's fees) of CEOs, and that CEOs are paid more as their tenure increases. Baptista (2010: 24) explains this as follows: "This fact can be explained by increased ability from CEOs to influence the Board of Directors, the Remuneration Committee or the HR department as they spend more time managing the company. On the other hand, the higher pay can also be compensation for their higher knowledge of their company's resources and business."

Bradley (2013) found that CEOs' bonuses negatively correlate to years of service (tenure). Thus, for every year of service, the CEOs' bonuses decline (Bradley 2013). A possible explanation is that is the period in which the study was conducted. Because bonuses are variable in nature and dependent on the performance of the company, these would have decreased because of the decline in the global economy. Bradley furthermore found that CEOs' cash salary positively correlate to years of service. Bradley postulated that, as CEOs' experience increases, their worth to the company increases, which results in them being able to demand higher salaries.

Rankin (2006) suggests that, while CEO tenure relates to the level of fixed pay and total remuneration, there is no relationship between tenure and either STIs or LTIs. Aaron, McMillian, and Dunn (2015) posit that CEOs with a longer tenure will perform better when offered a greater portion of fixed remuneration relative to performance-based remuneration. Interestingly, Henderson, Miller, and Hambrick (2006) postulate that the positive or negative influence of a CEO's tenure is industry-specific.

In addition, Shah *et al.* (2009) and Banghøj *et al*. (2010) suggest that earlier empirical studies do not provide convincing evidence that CEO tenure relates to CEO remuneration. From the literature, it is clear there is no agreement on the matter.

(c) CEO's education

Human capital theory (Becker 1974) holds that employee characteristics such as educational attainment increase remuneration over a lifetime. It has also been suggested that the effect of a CEO's educational background on company performance varies across industries (Wasserman, Nohria, & Anand 2001).

A CEO's education theoretically affects a CEO's abilities in three similar, non-exclusive ways. Firstly, education could, in theory, contribute to the CEO's knowledge and comprehension of technical and abstract concepts. Secondly, a higher education could be a sign of the CEO's intelligence and ability to persist in challenging intellectual activities. Finally, the social networks created in college and graduate schools can, in future, be helpful professionally (Bhagat, Bolton, & Subramanian 2010). In addition, the higher a CEO's educational level is, the higher his/her expertise will be, justifying higher remuneration (Finkelstein 1992; Ramaswamy, Veliyath & Gomes 2000).

Berkeley (1991), in his study using a sample size of 224 companies, found a positive relationship between a company's performance and the educational level of the CEO. Chung and Pruitt (1996) found a positive but insignificant relationship between educational level and executive remuneration. However, Jalbert, Rao, and Jalbert (2002) found that CEOs without a college degree earn more than those with a college degree. Cole and Mehran (2010) found a significant positive relationship between CEOs' level of education and their remuneration in private companies. Banghøj *et al.* (2010) found that educational level is an important differentiator in executive remuneration. This indicates that there seems to be a positive relationship between executives' educational level and their remuneration.

Aron and Matthew (2010) investigated whether the educational background of the CEO had any effect on company performance. They found no proof supporting the

notion that a company managed by a CEO who had an MBA performed better than companies headed by CEOs who possesses liberal arts degrees or law degrees. Their study also failed to find any evidence that companies managed by CEOs with a postgraduate degree performed better than companies managed by CEOs with an undergraduate degree. In addition, Bhagat *et al.* (2010) found no statistical relationship between CEO education and company performance, signifying that a CEO's education may be an insufficient proxy for CEOs ability.

The results of a study conducted by Ayaba (2012) indicated that a CEO's educational level has a limited effect in accounting for differences in company performance. Ayaba's (2012) results show that, while the CEO may bring to the company specific educational skills, these skills may progressively be redefined to meet the challenges of the environment.

This finding is comparable to those of Bhagat *et al.* (2010) who found that the CEO's educational level could sway CEO selection. It does not, however, have an effect on the long-term performance of the company. This therefore suggests that, when companies are considering candidates for the CEO position, environmental and business challenges (contingency factors) play an important role (Ayaba 2012).

(d) CEO's gender

Although previous studies suggest that diversity has a positive impact on the bottom line, the link between gender diversity and a company's financial performance has not been firmly established (Catalyst 2004). In this regard, Khan and Vieito (2013: 56) postulate that the relationship between the CEO's gender and company performance is a "relatively new area of inquiry." Further, even though practitioners assert that female executive systematically receive lower pay levels than their male counterparts (e.g. Catalyst 2000; Hay Group 2010), the academic evidence substantiating these gaps is mixed (Carter, Franco & Gine 2017).

According to a report by the South African Board for People Practices (SABPP) in 2015, South African women earn 15% less than their male counterparts (Scheepers 2015). Gender equitable remuneration practices has been the subject of many academic research papers over the past five years, and a large economic literature

on gender pay differentials is available. However in this section, and for the purpose of this study, the researcher discusses studies examining gender pay gaps across female CEOs/executives, as they are most comparable to this study

In their study, Cole and Mehran (2008) found that female CEOs are paid less than their male counterparts. This is consistent with the findings of for example Muñoz-Bullõn (2010) as well as Cole and Mehran (2016).

Smith *et al*. (2006) observed the relationship between management diversity and company performance in Danish companies. After controlling for factors that are traditionally considered to influence company performance (company age, size, etcetera), Smith *et al*. (2006) found a positive gender–company performance relationship, using a selection of accounting-based performance measures. They, however, warn that any outcome is closely tied to the characteristics of individual female executives.

Muñoz-Bullõn (2010) found that a large percentage of the gender pay gap in total remuneration was attributable to differences in variable pay between the genders. They found that this difference in variable pay accounted for much more of the difference in average total remuneration between the genders than did fixed pay (roughly 90% vs 10%).

Statistics from the South African Revenue Service (SARS) indicate that, for the 2011 tax year, women, overall, earned a taxable income of R160 702, and were liable for tax of R26 919, at an effective rate of 16.8%. Men, on the other hand, earned an average taxable income of R223 550, and were liable for tax of R50 885, at a nominal rate of 22.8%. Women, overall, earn 28.1% less than men, as measured through taxable income (BusinessTech 2013).

In a more recent study, using a sample of executives from ExecuComp from 1996 to 2010, Carter *et al.* (2017) found that female executives receive significantly lower salaries and total remuneration levels compared to male executives. After controlling for job responsibilities and other personal- and company-level

determinants of pay, these authors found salary and total remuneration gaps of about 7% and 15% respectively.

(e) CEO's race

Research on CEO remuneration and the CEO's race from a South African perspective seems to be scant. The majority of the studies on CEOs' race and remuneration were conducted in the USA (Barret 2014). Various studies show that the probabilities are against previously disadvantaged individuals progressing to the top levels of executive management and being paid remuneration similar to that of their white male colleagues (Barret 2014: 27).

One of Barret's (2014) research objectives was to determine the degree of remuneration equity between black African and white CEOs in South Africa. Barret found no significant differences between the level and structure of remuneration between black African and white CEOs, pointing to the existence of remuneration equity between black African and white CEOs. Unfortunately, Barret only focused on two race groups, namely black and white.

Another interesting finding by Barret (2014) was that black CEOs' mean total remuneration in 2013 was R8 751 000, having grown annually by 9.7% since 2008. On the other hand, white CEOs' mean total remuneration was R8 278 000 in the same year, and experienced a slower growth rate (7.3% per year) over the 2008 to 2013 period (Barret 2014).

2.3.5.2 Company characteristics as determinants of CEO remuneration

(a) Company performance

Company performance is considered the most significant determinant of CEO remuneration (Shah *et al*. 2009). The "economic argument" for this statement is obvious (Sharma & Fayyaz 2000: 82). As the CEO is, in general, the individual responsible for the performance of the organisation, his or her rewards should be dependent on company performance (O'Reilly III, Main, & Crystal 1988). Ngwenya and Khumalo (2012) state that economic literature demonstrates that the remuneration received by CEOs should be linked to company performance for

economic reasons. However, because of the high salary increases executives receive, shareholders believe that there is no link between executive pay and company performance (Attaway 2000).

The literature emphasises that executive remuneration should be based on company performance. Performance in academic research is measured by different profit-related variables (Shah *et al*. 2009). Although the argument is logical, as Sharma and Fayyaz put it, findings regarding a clear link between company performance and rewards are mixed.

Deckop (1998) defined company performance as profits and revenue, and found that these had a positive relationship with the total remuneration of executives. Firth, Tam, and Tang (1999) also found a positive association between a company's profitability and executives' total remuneration. However, Minhat and Abdullah (2014) conducted a study with the aim of investigating the characteristics of, inter alia, executive pay and the pay–performance relationship in government-controlled companies in Malaysia, and found no evidence of a relationship. Cambini, De Masi, and Rondi (2014) concur with this finding. These authors found that executive remuneration decreases when a company is under the control of the state. Moreover, Tariq (2010) found a weak negative relationship between CEOs' remuneration and company performance. This negative relationship can have unfavourable consequences for the company and the shareholders, as it implies that the CEO is not being paid for high performance (Tariq 2010). Research on company performance is discussed in depth in Chapter 3.

(b) Company size

Researchers believe that there is a correlation between executive remuneration and company size (Menozzi *et al*. 2011; Morton & Blair 2013). This is a reasonable notion, as one would expect that a larger company would be in a stronger financial position to offer top-level staff attractive remuneration (Morton & Blair 2013). Sharma and Fayyaz (2000) postulate that there are numerous studies linking company size to CEO remuneration.

Van Blerck (2012) postulates that empirical evidence suggests that CEOs' remuneration is strongly associated with the size of the company. The rule of thumb is that the CEO's pay increases by 3% for every 10% increase in company size (Van Blerck 2012). In addition, company size is likely to affect the expertise required of the CEO (Rankin 2006). According to Lin *et al.* (2013: 39), company size is "the most important determinant of CEO remuneration."

Throughout much of the literature (Finkelstein & Hambrick 1996; McKnight 1996; Canarella & Gasparyan 2008), the relationship between a company's size and the CEO's salary is maintained. One explanation for this is that a company's size is associated with job complexity (Agarwal 1981; McKnight *et al*. 2000). Job complexity can be defined and measured according to the span of control (number of persons directly supervised), number of functional divisions, number of management divisions, and the geographical diversity of the company (Agarwal 1981).

In his study, Agarwal (1981) found that the four job complexity measures mentioned above were positive and significant, confirming that, as executives' jobs become more complex, they receive higher levels of remuneration (Rankin 2006). Agarwal's findings therefore confirm that company size is closely linked to, for example, job complexity, and that this variable succeeds in capturing the variance in executive remuneration accounted for in prior studies. Menozzi *et al*. (2011) posit that the complexity of the job, the skills required, and the number of hierarchical structures managed lead to large companies paying their executives more.

As an organisation grows larger and becomes more complex, the level of knowledge and understanding required for the position of CEO becomes more challenging (McKnight & Tomkins 2009). A company's size therefore reflects the demand for a high-quality CEO, which, in turn, relates to the level of the CEO's remuneration (Rankin 2006).

The management of complex organisations places significant demands on the executive, and calls for more skills and experience, compared to the management of smaller, simpler organisations (Hallock 2002). In the same way, large

organisations require higher-calibre executives to run their operation competently; therefore, in order to attract and retain these high-calibre executives, a company will have to table a competitive offer, which often equates to higher levels of remuneration (Core, Holthausen, & Larcker 1999; Morton & Blair 2013).

Studies by various researchers (Ciscel 1974; Finkelstein & Hambrick 1989; Chalmers, Koh, & Stapledon 2006) revealed that company size is considered the strongest determinant of CEO remuneration when measured in terms of total assets. However, Agarwal (1981) argues that, even though prior research found a statistical relationship between company size and executive remuneration, it is unclear what aspect of company size relates to the level of executive remuneration. Lambert (1991) found weaker relationships between company size measured by sales and executive remuneration than suggested by previous researchers, and argues that organisational size is not the primary determinant of CEO remuneration (Shah *et al*. 2009). In their study of the South African banking sector, Deysel and Kruger (2015) found no correlation between CEO remuneration and company size.

In conclusion, the literature revealed several determinants that are positively related to CEOs' total remuneration, namely company size, company performance, and the CEOs' age, education, gender, and race. The next section contains a discussion of challenges associated with executive remuneration in South Africa and abroad.

2.4 CHALLENGES ASSOCIATED WITH EXECUTIVE REMUNERATION

It is evident that previous research on executive remuneration and performance has produced varied and inconclusive results, and that there is a need for sound and innovative remuneration policies that will support the long-term strategies of companies. De Wet (2012) believes that company performance will continue to be an important factor in explaining executive remuneration.

There have been heated debates about excessive executive remuneration damaging a company and its stakeholders, as well as worker morale and the economy in general (Ulrich 2010; Swatdikun 2013). Hill (1997) contends that the

main concern regarding executive remuneration is the potential conflict of interests in determining executive remuneration packages. This conflict of interests is between executives being responsible for the company's performance and, as board members, being able to propose higher CEO salaries, which will lead to higher remuneration for themselves. The board, based on recommendations made by its remuneration committee, generally determines executive pay. This conflict is discussed in greater detail hereunder.

2.4.1 Excessive executive remuneration

Research on executive remuneration is not a new phenomenon. As Florin *et al*. (2010) indicate, it can be traced back to the work of Roberts (1956), and even as far as that of Berle and Means (1932). Papers by Masson (1971), Lewellen and Huntsman (1970), Coughlin and Schmidt (1985), and Jensen and Murphy (1990), among others, also discuss this matter. Florin *et al.* (2010) are of the opinion that Murphy's study in 1985 can be regarded as a landmark study — data were obtained from 461 executives in 71 firms from 1964 to 1981. Murphy introduced 'fixed-effects' models, and found a strong relationship between executive pay and company performance.

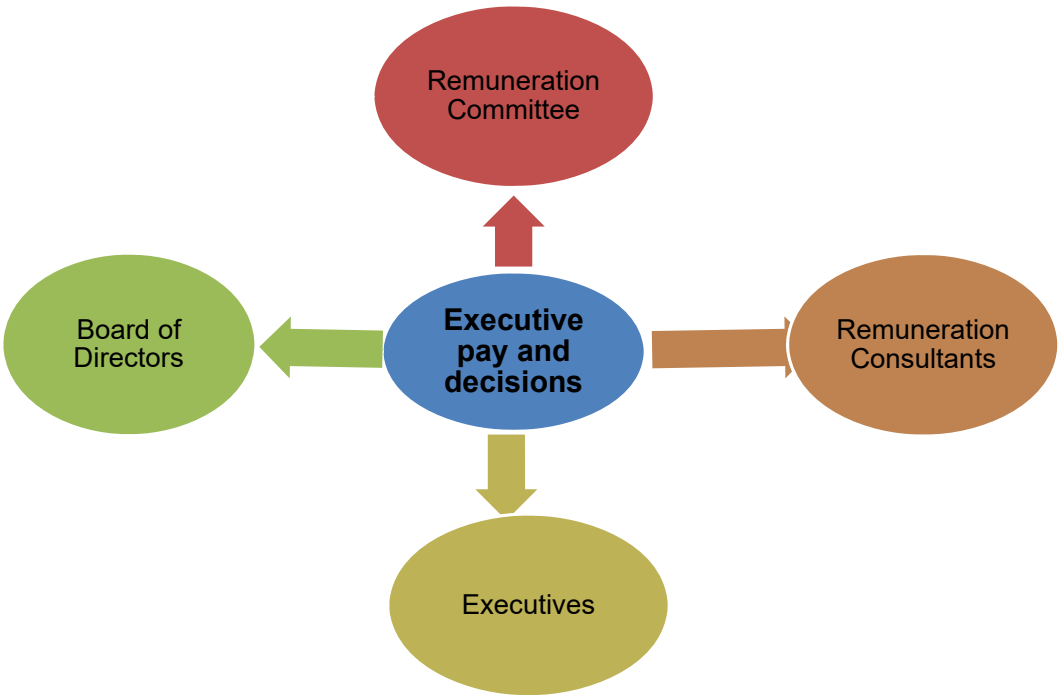
Executive remuneration has been the focus of much discourse, and has led to disagreement in both the business world and academia (Nichols & Subramaniam 2001). Despite the large number of studies conducted on executive remuneration, it is noteworthy how difficult it is to explain executive remuneration as research results are remarkably incoherent (Okasmaa 2009). Most people who voice an opinion on executive remuneration seem to think that it has become excessive, which opinion is grounded in arguments regarding equity or fairness. These arguments often are either (1) that executive pay is inequitable relative to other workers' pay, or (2) that the amounts are unjustified when compared to the company's or the SOE's performance (Nichols & Subramaniam 2001). However, Ulrich (2010: 112) states that "the controversial issue of excessive executive remuneration is not a phenomenon of the modern era." In support, Ulrich (2010) mentions as an example the remuneration of the president of Bethlehem Steel, which was US$1.65 million in 1929, which translates to more than US$15 million in 2003 (Grant 2003).

Szondy (2003) believes that excessive executive remuneration, which has been a general trend since the 1990s, is fuelling immense investor anger towards executive greed whereby executives, instead of adding value to organisations, destroy it. He further argues that excessive executive remuneration does not support the interests of shareholders. This phenomenon is described as an unparalleled crisis (Szondy 2003). These arguments are based on the widespread view that executive remuneration levels are excessive compared to the salaries paid to ordinary workers, which often bear no relationship to the performance of the executives (Ulrich 2010).

2.4.2 Conflict of interest

The main problem with executive remuneration has traditionally been assumed to be the conflict between the interests of shareholders and those of self-serving executives (Hill 2006). To understand this conflict of interests, it is essential to look at the key role players in determining CEO remuneration. Figure 8 illustrates these role players.

Figure 8 Key role players in determining CEO remuneration



The mere fact that there are so many role players involved in determining CEO remuneration creates various possible conflicts of interests (Martocchio 2013), which are highlighted below.

a) **Board of directors**: The board of directors is supposed to represent the shareholders and serve their interests. Members of a board of directors generally include: (1) CEOs and executives from the company, (2) prominent community leaders, (3) well-regarded professionals, and (4) executives of other companies. The board of directors is responsible for the final approval of recommendations made by the remuneration committee. A conflict of interests arises when CEOs use remuneration to co-opt board members' support and nominate candidates for board membership who will support their own interests (Martocchio 2013). Martocchio (2013) posits that there is a statistical relationship between how highly the CEO is paid and how highly other members of the board of directors are paid. Collier, Idensohn, and Adkins (2010) posit that the relationship between board members and the company's CEO, who may be actively involved in the selection of board members, is regarded as a potential source of a conflict of interests in setting executive pay. In addition, this conflict of interests seems to be an important factor in explaining recent cases of excessive executive remuneration (Falk *et al*. 2004). Falk *et al*. (2004) note that, for example, CEOs also acting as board chairmen of large boards with many external directors who are appointed by the CEO, or boards' agendas being set by the CEO, may have an inflationary effect on the level of executive remuneration.

b) **Remuneration committee**: A remuneration committee comprises members of the board of directors from within and outside of the company. External board members also serve on remuneration committees, in order to minimise the effects conflicts of interests. External directors normally hold most of the committee's authority (Martocchio 2013).

c) **Remuneration consultants**: Remuneration consultants normally provide recommendations regarding pay packages. The independence of remuneration consultants may be compromised, because they are paid by

companies to assist with the determination of executive remuneration. This could result in peer group pay recommendations, rather than performance-based recommendations (Collier *et al*. 2010). This could lead to higher recommended levels of CEO remuneration, due to the consultants' desire to "cross-sell" their services through the board member from other companies and to secure "repeat business" (Murphy & Sandino 2010: 1). Conyon, Peck, and Sadler (2009) found that the use of pay consultants is associated with higher levels of total CEO remuneration.

Martocchio (2013) also mentions the issue of remuneration consultants' intentionally recommending higher remuneration than is warranted for executives, in the hope of gaining their favour and other consulting opportunities. However, Cadman, Carter, and Hillegeist (2009) found no evidence suggesting that this phenomenon is a primary driver of excessive executive pay. Murphy and Sandino (2010), on the other hand, found evidence in the USA and Canada that CEO remuneration is higher in companies where the remuneration consultants also provide other services. They furthermore found that remuneration is higher in Canadian companies when the fees paid to the consultants for other services are large relative to the fees for their services related to executive remuneration.

d) **Executives** are strategically involved in the remuneration-setting process, resulting in a positional conflict of interests (Hill & Yablon 2002). Neither the increased use of independent directors on remuneration committees, nor specialist remuneration consultants, is a "complete panacea to management's strategic priority in the pay-setting arena" (Hill & Yablon 2002: 22). The influence of executives can also lead to pay packages being tailored to prevailing stock market conditions. During a bear market, for example, it is normal to see executives' pay reflecting a higher share of fixed pay, rather than share options, compared to a bull market.

From the above discussion, it is clear that numerous recent studies have postulated that the problems with performance-based pay go further than the structure thereof. Even cautiously designed remuneration packages will often afford business

managers incentive to use their strategic advantage within the company to favour their own gains at the cost of shareholders' interests.

Determining best practices in remuneration has been an attempt to align competing interests through different methods of incentivisation (Ulrich 2010). Allcock and Pass (2006), who advocate mechanisms to motivate executives to align their own interests with those of shareholders, support such attempts.

2.4.3 Determining executive pay

Bussin (2012) is of the opinion that CEO remuneration is more complex than it appears. A strategic perspective on remuneration calls for research that looks further than purely how much CEOs earn (Bussin 2012). Jensen and Murphy (1990) chartered the thinking about the underlying process of setting CEO remuneration (Shaw 2011). This was continued by numerous other academics, who focused on understanding the *'How?'* and not the *'How much?'* of executive remuneration. Recent studies have shown that CEOs have a significant ability to influence the decision-makers involved in setting and evaluating CEO remuneration (Shaw 2011). Stabile (2000) is of the opinion that current executive pay-setting processes do not sufficiently regard shareholders' interests.

Ulrich (2010) states that there is merit in Stabile's view, but that it does not address whether the executive pay-setting process represents the interests of other stakeholders in the organisation, which are at least as important as the interests of shareholders.

Ferrarini, Moloney, and Vespro (2003) believe that the process of setting executive remuneration takes place in an inherently confrontational arena consisting of executives and shareholders, where both parties wish to advance their own interests. The potential conflict situation is aggravated in dispersed ownership organisations and where the board has surrendered control to powerful executives. Under such conditions, the pay-setting process could easily turn into a wealth-skimming process, where pay negotiations do not take place at arm's length (Ulrich 2010). According to Bebchuk, Fried, and Walker (2002), one of the significant

problems in setting a CEO's remuneration is the pervasive influence of the CEO on the pay-setting process.

Ferrarini *et al*. (2003) suggest that current pay-setting practices are characterised by a number of structural defects that make it possible for self-serving executives to hide enormous wealth transfers from shareholders.

2.5 ROLE OF THE BOARD OF DIRECTORS

The directors of a board each has responsibility for the management of a specified portfolio. In the majority of cases, executive remuneration is delegated to a remuneration committee. This remuneration committee makes recommendations regarding remuneration of executives, and submits these to the board of directors for final approval. Normally, the board will implement a multi-year remuneration programme for executives (Bebchuk *et al.* 2002).

Although the board of directors acts on the recommendations made by the remuneration committee, the board is ultimately accountable for any decisions made in respect of remuneration policies and levels (Ulrich 2010). Ulrich (2010) states that various governance guidelines and practices have been established to address the issue of responsibility, but, in practice, it has been found that even the most noble of intentions in board governance are at risk of being manipulated by self-interested executives.

The overall role of the board of directors is to focus on the bigger picture and make sure that the policies and strategies needed for the company's optimum performance are in place (Bebchuk *et al.* 2002). The board of directors and the remuneration committee both play a significant role in linking executive pay to company performance, as well as in aligning the interests of managers with those of shareholders (Sun & Cahan 2009).

It is of crucial importance for a company to set its CEO pay correctly. The reason for this is on the one hand, the company needs to attract, motivate and retain good executives while tough corporate governance and media attention places

remuneration decision-makers in a difficult position as pay needs to be fair and equitable (Bussin 2013).

2.6 BRIEF HISTORY OF THE PAY-FOR-PERFORMANCE DEBATE

The issue most often discussed with regard to executive remuneration literature is the relationship between CEO remuneration and company performance. The topic has been under scrutiny for more than seven decades, resulting in the literature covering more than 300 studies (Barkema & Gomez-Mejia 1998). Therefore, summarising the considerable amount of literature on the CEO pay-for-performance debate is not an easy task (Florin *et al*. 2010).

Creating an effective link between pay and performance is an important issue for executives, shareholders, and the remuneration committee. This link is, above all, difficult to determine. As the world attempts recover from the credit crisis and the economic collapse in 2008, the matter of executive remuneration has received more attention than ever (Crafford 2012). This contentious issue has also received growing attention in South Africa, especially when the strike in the platinum sector during 2014 entered its fifth month.

Bevan (2013) states that one of the public's concerns about executive remuneration is that CEOs' remuneration does not always mirror company performance or, even worse, keeps increasing while company performance declines. Bevan (2013) asks the following question: "Is executive remuneration and company performance disconnected?" His response to this question is that "it depends on for example, the measures of performance used, the time-period over which the measures were made and the component of the reward package being examined" (Bevan 2013: 6).

Executive remuneration is a popular topic of discussion in magazines and newspapers. Salaries and substantial bonuses received by top executives worldwide are regularly published. These large amounts spur criticism from political, social, and economic players. Some observers consider executives' remuneration to be excessive, compared to their companies' performance (Okasmaa 2009).

Organised labour often expresses disgruntlement at the irregularities in bargaining unit remuneration management compared to that of executives. These frustrations result in increased industrial unrest, leading to protests, 'go-slows' and full-blown strikes, which, in turn, lead to lost working days and declining productivity (Crafford 2012).

An example of the above is the mining strike of 2014, which lasted for almost five months. Relative inequity was mentioned as the source of the fury of employees in gold-, platinum-, and coal mines (De Wet 2014). In early May 2014, while employers were trying to persuade employees to end the crippling strike, the platinum sector announced the details of the bonuses and incentive schemes for its directors. The company concerned announced rewards of R76.45 million in total, to be paid to 12 individuals (De Wet 2014). Although these directors would have to wait three years to obtain cash from the company shares awarded to them, it would take employees in this sector more than 40 years, uninterrupted by strikes, to earn the average bonus of the directors. The latter would only be possible if employees realised the R12 500 per month basic salary they demanded (De Wet 2014).

In addition, shareholder unease and important changes in corporate governance in the UK, the USA, and even South Africa ignited significant academic debate regarding the determinants of the remuneration paid to CEOs and, in particular, the relationship between CEO pay and company performance. As reported by PWC (2011), it is proposed that flaws and discrepancies in these measurements play a part in the vague weak link between executive pay and company performance.

According to Florin *et al.* (2010), there are many methodological issues regarding determining the relationship between pay and performance. For instance, researchers do not use the same data sources, companies have diverse remuneration and business strategies, and there are numerous factors that are not easily measured. However, according to Florin *et al*. (2010), methodological issues are one of the reasons why this debate has not yet been resolved.

2.7 THE FINANCIAL CRISIS AND EXECUTIVE COMPENSATION

The global recession of 2008 – 2009 was marked by global economic decline that began in December 2007, and for the most part, took a sharp downward turn in September 2008 (Colander 2010). The role that incentive remuneration played in causing the financial crisis is evident in the significant corporate governance and regulatory changes that have occurred since the economic recession of 2008 (Bussin 2014).

Globally the discontent with remuneration received by executives gained momentum as a result of the 2008 Global Financial Crisis that began in United States (US) and spread across many global economies (Modau 2013). At the centre of the issue is the perceived weak relationship between company performance and CEO remuneration. In South Africa, and indeed many other emerging economies, the financial system has not experienced the level of financial losses seen in more developed economies (Bussin, Shaw & Smit 2013).

Van Veenen (2012) investigated the impact of the global financial crisis on the remuneration of CEO's of listed firms in the Netherlands. From the research it becomes clear that the level of total remuneration has declined since 2008. This decrease can be attributed to the variable compensation and the stocks/options, since the level of fixed compensation has rarely seen any change over the period 2006 to 2011. During the crisis years, 2008 and 2009, both the variable remuneration and stocks/options declined since the targets, on which the remuneration was based, were not achieved.

In his study, Modau (2013) found that there have been some structural changes that have occurred to the total remuneration of CEOs after 2008. He further found that fixed pay slowed down during the recession period. Barret (2014) found that mean total remuneration of black CEOs decreased slightly during the global recession years of 2008 to 2009. However, for white CEOs, he found that mean total remuneration continued to increase over the recession period, decreasing slightly in 2010.

In addition, Kuboya (2014) found some evidence that the level of total remuneration and variable bonuses for CEOs in JSE-listed companies decreased during the economic recession period (2007 to 2009), although not significantly. His results further showed strong evidence of a decline in bonus' payments and growth during the economic recession. Further, base salary for CEOs indicate a constant upward trend during the economic recession. Vemala, Nguyen, Nguyen, and Kommasani (2014) found that financial crisis has a small but significant effect on CEO remuneration.

2.8 EXECUTIVE REMUNERATION IN SOUTH AFRICA

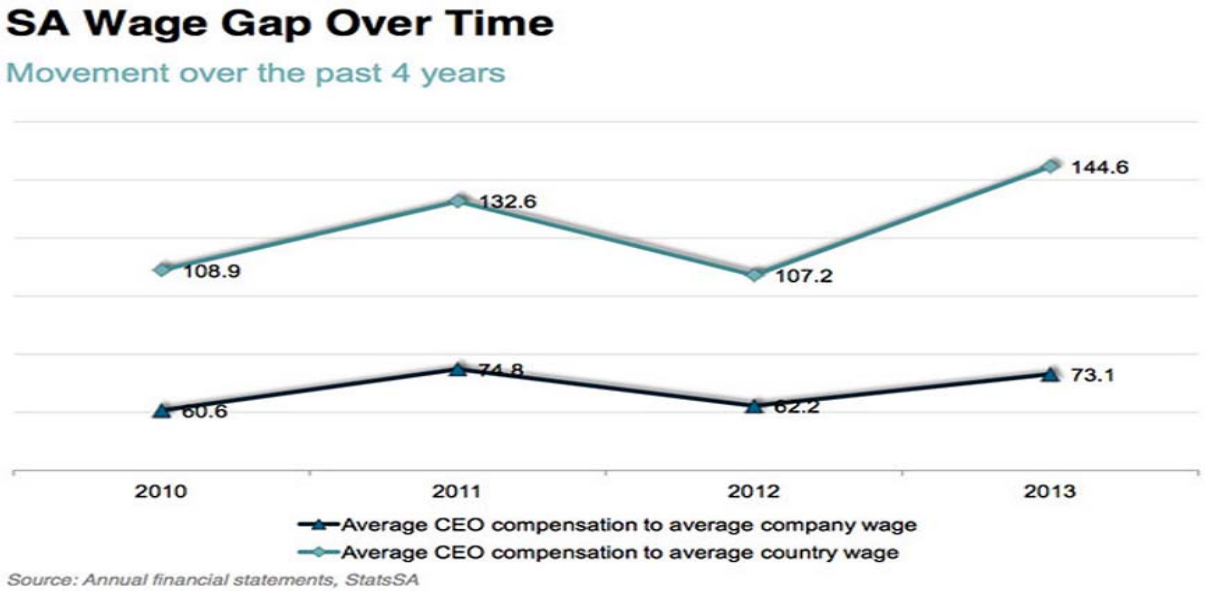
The literature pertaining to the remuneration of CEOs and executives in the South African context is limited (Shaw 2011: 39). Crotty and Bonorchis (2006) attempted to uncover some of the issues related to executive pay in South Africa. Shaw (2011) noted that some of the criticisms of Crotty and Bonorchis (2006) regarding the apparently excessive levels of CEO pay are applicable to the South African context.

In South Africa, the platinum sector strike in 2014, the election manifesto of the new Economic Freedom Fighters party, and public statements in the press and on other platforms have resulted in the gap between executives' and entry-level workers' pay coming under the national spotlight (PwC 2014). Remuneration practices within SOEs are noticeably responsible for deepening inequality, despite SOEs assuming a public mandate to align executives' and general workers' remuneration and bonuses (21st Century Pay Solutions 2012).

The wage gap continues to be a challenging problem in South Africa's unequal society. In 2014, Mergence Investment Managers conducted an analysis of pay practices at the top ten JSE-listed companies. Their research showed an upward trend over the last five years, with the gap between total remuneration and average employee remuneration increasing from just under 120 times in 2009 to over 140 times in 2013 (Lamprecht 2014). Figure 9 illustrates the development of the wage gap over time. It should be noted that the CEOs' total remuneration included base pay, benefits, cash, bonuses, and share-based payments. The trend seems to have

been driven by real increases in remuneration packages, instead of just variability in bonuses and share grants (Lamprecht 2014).

Figure 9 South Africa's wage gap over time



Source: Lamprecht (2014: 1)

Inequality has become a source of concern internationally, as high levels of inequality are detrimental to economic growth and limit the eradication of poverty (PwC 2014).

Crotty and Bonorchis (2006) studied the seemingly excessive levels of CEO pay, and indicate that the wage gap continues to be a particularly challenging dilemma in an unequal society. The authors refer to the Gini coefficient, a measure of inequality in a society, indicating that South Africa has one of the highest inequality scores in the world (Crotty & Bonorchis 2006). South Africa's Gini coefficient was recorded at 0.65% according to the World Bank's calculations (PwC 2016a).

A study conducted by Prophet Analytics (2012) of 212 listed South African companies revealed that 41% of CEOs were overpaid in relation to their equals, of which 31% were overpaid by more than R1 million per annum, and 9% were overpaid by more than R5 million per annum. The ten most overpaid CEOs

represented almost 47% of the overall amount of excess CEO remuneration for the 2011 financial year (Prophet Analytics 2012).

Moreover, over the last decade or so, CEOs' incentive remuneration has increased substantially in South Africa. Incentives, together with bonuses and share awards, previously averaged around 60% of their guaranteed packages. However, in 2013, it stood at almost 200% (PwC 2013).

Mergence Investment Managers' analysis of variable remuneration packages in 2012 and 2013 furthermore showed that approximately 50% of CEOs in the sample received 100% or more of the value of their fixed pay as variable remuneration. The other half received between 0% and 100%. During 2013, 26% of CEOs received variable pay of more than 200% of the value of their fixed pay, with 74% receiving 50% or more (Lamprecht 2014).

The above is alarming, as it may indicate that the targets for variable pay and bonuses might not be demanding enough, as it appears that CEOs could receive variable remuneration without any great effort (Lamprecht 2014).

In addition to the remuneration issues mentioned above, the increasing role of governance in the South African context must be recognised (Shaw 2011). King III is a comprehensive framework for good corporate governance, comparable to the UK's Corporate Governance Code (Collier *et al*. 2010).

An important aspect of King III is the condition that remuneration of the CEO and executives be linked to measures of corporate performance (Institute of Directors of South Africa 2009). This is stated in practice guidelines for all the components of CEO remuneration, including fixed pay, STIs, and LTIs. King III operates on a 'comply or explain' basis, where the company has to clearly articulate the reason(s) for non-compliance (Collier *et al*. 2010). However, King IV (to be implemented 1 April 2017) assumes application of all principles, and requires SOEs to explain how the principles are applied – thus, apply and explain. While the King Report on Corporate Governance does not constitute formal legislation, it seems to be having

a noteworthy effect on the way in which CEO remuneration is calculated (Shaw 2011).

Whereas King III included provisions regarding the remuneration policies of organisations, King IV addresses the contentious issue in a more concise manner by requiring that remuneration policies in detail include arrangements towards ensuring that the remuneration of executive management is fair and responsible in the context of overall employee remuneration in the organisation (Myburgh & De Costa 2017).

The Companies Amendment Act, Act No. 3 of 2011, which came into effect on 1 May 2011, contains specific requirements pertaining to CEOs' and executive remuneration (PwC 2011). The trend over the past decade has been a significant move towards more comprehensive governance. At the same time, formal regulation in some form or other, generally with respect to disclosure of executive remuneration, is becoming part of the South African CEO remuneration context (Shaw 2011).

Prophet Analytics (2012) posits that two factors contributed to increased CEO remuneration in South Africa: immigration laws, which created a scarcity of talented company executives, and new technologies that elevated the need for scarce executive skills. However, no other previous studies have observed these factors, and it may be a recommendation for future research (Prophet Analytics 2012).

Notwithstanding the discussions in the above paragraphs, a survey in 2007 uncovered that South African executive earn less (in US dollars) than their counterparts in the USA, Australia, Hong Kong, and the Netherlands (Ebert *et al*. 2008).

2.8 CHAPTER SUMMARY

This chapter focused on the role of the CEO and executive remuneration, as well as the underlying principles that drive the determination of remuneration for CEOs

in the current business environment. The main role players in the determination of executive pay, as well as the challenges faced by companies when determining executive pay, were also discussed. This chapter then focused on problems associated with executive remuneration. The next chapter will focus on company performance and the different measures of company performance. The relationship between CEO pay and company performance will also be discussed. The chapter will end of with a discussion of SOEs in South Africa.

CHAPTER 3: THE SOE ENVIRONMENT AND COMPANY PERFORMANCE

3.1 INTRODUCTION

This chapter starts with an overview on SOEs in South Africa. The discussion then focuses on the issues and challenges with regard to remuneration of SOE executives, and outlines the state-sponsored reviews of their CEOs' remuneration and the frameworks applied. An international perspective on remuneration in SOEs is also provided. This is followed with a discussion of the company performance measures used in the present study. Finally, a discussion of the relationship between executive remuneration and company performance will refer to general research and report on previous studies conducted on SOEs.

3.2 OVERVIEW OF SOEs IN SOUTH AFRICA

SOEs are autonomous bodies, in part or exclusively owned by government, and play an important role in the South African economy (Western Cape Government 2013). These entities are an extension of the public sector, and perform specific functions in accordance with South African legislation (Rabushka 1997; Wendy Owens and Associates 2013).

3.2.1 Understanding SOEs

Arries (2014) states that SOEs differ from other companies, in that they maintain an equivocal position between the public environment and the corporate environment, having their own dynamics. In addition, unlike other areas of the public sector, SOEs are legal entities, with the government being both the supervisory body and a stakeholder. SOEs perform profit-making activities and pursue financial objectives to generate returns on investment through dividends (PwC 2015).

As SOEs make use of state funds, it is understandable that SOEs should be answerable to the taxpayers of the country. However, at the same time, SOEs cannot be "cast in the same category as the arms and organs of state or other similar public entities that are also accountable to the same taxpayer" (Presidential Review Committee on State-owned Entities, 2013: 15). The reason for this difference is that the level of skills required to manage a large SOE are similar to

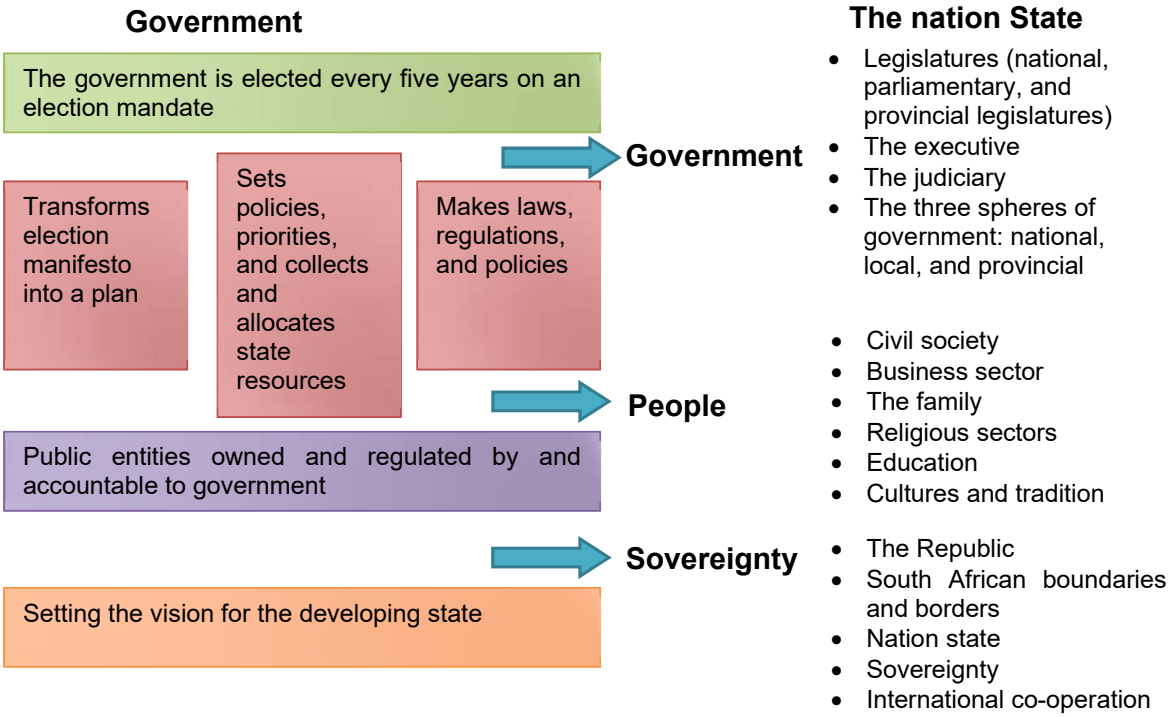
the level required to manage a JSE-listed company. SOEs recruit executives from both the public and private sectors. Therefore, remuneration has over the years, been set at rates comparable to those of the private sector. These rates currently exceed, for example, the remuneration of the president of South Africa. In many cases, it also exceeds private-sector remuneration (Presidential Review Committee on State-owned Entities 2013).

SOEs are not conventional commercial businesses. They have a directive to attain longer-term strategic economic objectives (even though there are foreseeable short-term losses while capabilities are being built). This requires a fine balance — if the strategic purpose challenges commercial discipline, the business will fail, but if commercial considerations outweigh strategic purposes, government objectives will be conceded (Gigaba 2012).

In line with international trends, corporatisation (the transformation of state assets or agencies into state-owned corporations) in South Africa was introduced in some sectors. The reason for this was to promote more effective and efficient service delivery following the 1994 democratic elections. All over the world, using public authorities rather than full privatisation (the transfer of ownership of property or businesses from a government to a privately owned entity) is seen as taking advantage of private-sector efficiencies while maintaining public accountability (Wendy Ovens and Associates 2013).

An understanding of the nature of SOEs is important, and should be grounded in an understanding of the notion and structure of the state, as illustrated in Figure 10. Misconceptions often occur when the government and the state are seen as the same. A clarification on the difference between the state and the government helps to clarify the ownership of SOEs by the state.

Figure 10 Configuration of the State



Source: Adapted from Presidential Review Committee on State-owned Entities (2013: 32)

The term *state* represents a broad concept that encompassess all social formations, such as the government and people, underpinned by the concept of autonomy. Government's roles in an SOE are complex, as these are diverse and often conflicting, including (Massie *et al.* 2014):

- owner;
- shareholder;
- maker of policies that impact on the environment in which the SOE operates; and
- enforcer of policies.

Government is ultimately responsible to the public for delivering on its mandate. Government's involvement in an SOE means that the SOE is essentially protected from concerns such as insolvency and takeovers. This can result in a self-righteous board and management team, often comprising suspect appointments made on the

basis of political support rather than ability. Good governance is therefore critical (Massie *et al*. 2014).

3.2.2 Brief history of SOEs in South Africa

Prior to 1994, the South African government's approach to SOEs was to utilise some of them as instruments to help the Apartheid state survive sanctions and embargoes. Table 2 provides an overview of the history of SOEs in South Africa from 1880.

Table 2 History of SOEs in South Africa

Political environment	Rationale	Examples
1880 – 1910 This period is characterised by economic self-sufficiency, during which monopoly businesses were afforded to private citizens.	Sovereignty and economic self-sufficiency of the Afrikaner	South African Railways
1910 – 1940s This was a period of high unemployment that witnessed the creation of a number of key state-owned corporations.	Strategic industries Job-creation	Eskom, Iscor, and IDC, and South African Post Office
1948 – 1970s The government used state instruments to enhance the living standards of a few. After 1960, with growing isolation, the focus was on self-sufficiency.	Upliftment Strategic industries Self-sufficiency	Aventura, South African Bureau of Standards, Sasol, Science Council, Land Bank
1976 – mid-1980s The Soweto Uprising and conflict in Angola motivated the development of the state security establishment. In addition, the government formed entities to side-step sanctions. In the mid-1980s, the government followed a trend of fostering the private sector and privatising some key state industries.	Avoid parliamentary scrutiny Negating sanctions Privatisation	Central Energy Fund, Denel, Armscor, Mossgas, Iscor and Sasol)

Political environment	Rationale	Examples
Late 1980s – early 1990s Political change became unavoidable. Government used the instruments of state to "win the hearts and minds" of the new voters.	Working around the existing structure of government	Independent Development Trust, Eskom and Telkom
1994 – present New government concentrated on poverty relief, developing a competitive economy, and improving the functioning of government. A strong emphasis on creating independent bodies to carry out new functions, and a tendency to move functions out of government to "create something new" or influence "transformation."	Regulatory functions independent of government A move away from privatisation	National Energy Regulator of South Africa, Nuclear Regulator, Competition Commission, SA National Parks, Museums, water boards, etc.

Source: Adapted from Presidential Review Committee on State-owned Entities (2013)

In 1994, there were more than 300 SOEs, which employed approximately 300 000 people. However, during their investigation, the Presidential Review Committee (2013) estimated that there were approximately 715 SOEs (including subsidiaries), trusts, and Schedule 21 entities.

Post-1994, SOEs in South Africa were tasked with delivering quality services to all citizens, and with strengthening the apartheid-era economy and driving economic growth (News24 2014).

When the ANC government took over in 1994, they continued to commercialise some of the state's assets and to sell large sections of its equity in some SOEs. For example, a 30% share in Telkom was sold to SBC Communications (an American multinational telecommunications conglomerate) (18%) and Telkom Malaysia (12%). Black empowerment groups purchased an additional 3%. In 2010, SOEs had grown in number, had generated jobs to reach an expected total employment of about 150 000 people, and had combined assets of R175 billion (Presidential Review Committee on State-owned Entities 2013: 38).

South African SOEs currently face wide-ranging objectives. They must attend to the needs of capital-intensive industry, provide continuous employment, help government to implement and learn from implementing industrial policy, and remedy disparities in access to water, sanitation, and electricity (Arries 2014: 7). The importance of these entities makes it essential that they operate efficiently and in the public interest over the long term (Presidential Review Committee on State-owned Entities 2013).

3.2.3 Importance of SOEs in South Africa

State-owned entities are independent bodies that are partially or wholly owned by government (Western Cape Government 2013), and play a significant role in the South African economy. Schedule 2 SOEs play an important role in the economy, contributing more than 8% of South Africa's gross domestic product (GDP) (Presidential Review Committee on State-owned Entities 2013).

SOEs[1] are of extreme importance throughout South Africa (Corporate Governance of State-owned Enterprises in Africa 2009) because:

- they are functioning in significant infrastructure and service industries, such as water, energy, financial services and transportation;
- these services are important to the welfare of all;
- many South African citizens are employed by the major industrial sectors such as mining and textiles; and
- SOEs are funded by means of taxpayers' contributions.

The important role that SOEs play can be seen through, for example, their total assets. During the 2009/2010 financial year, the total assets of all SOEs amounted to over R450 billion (Business Report 2010). However, during the same period, Eskom, Alexcor, Broadband Infraco, and Denel declared losses totalling a combined loss of R310 million.

[1] SOEs are also referred to as *parastatals* or *public entities*. For purposes of this study, the term *state-owned entity* will be used. Where necessary and appropriate, however, use will be made of the terms *parastatal* or *public entity*.

Globally, SOEs account for 20% of global investments and 5% of total employment, and up to 40% of total output in some countries (Mbo & Adjasi 2013: 3). The importance of SOEs is felt particularly in infrastructural development, with the majority of infrastructural services being delivered by SOEs, ahead of the 20% to 25% contribution by the private sector (Vagliasindi 2008). Therefore, determining and understanding the link between executive remuneration and company performance in SOEs is very important.

Further, SOEs are important stakeholders in and contributors toward supporting and promoting urban growth and development (Wendy Owens and Associates 2013). Moreover, SOEs are significant to economic growth, job-creation, building the capability and technical capacity of the state, international co-operation, meeting the basic needs of the people, and, in the long term, building a successful, non-racial society (Presidential Review Committee on State-owned Entities 2013).

The state's enterprises should not play a role as "employer of last instance". They should play an important role in upgrading labour skills and raising social standards through appropriate policies of corporate responsibility. Their importance is further compounded by the fact that they tend to be focused on 'strategic' sectors. These include infrastructure and utilities (air and rail transport, electricity, gas, water supply, broadcasting, natural resource extraction, and telecommunications), and finance (banking and insurance), which are fundamental to the competitive position of the private-sector economy (Balbuena 2014).

The 'big four' South African SOEs — Transnet, Denel, Telkom, and Eskom — once accounted for 91% of the assets of the top 30 SOEs, and employed 77% of SOE employees (Southall 2007). The economic importance of SOEs is concentrated in the top 30 companies, with four accounting for 91% of SOE assets, 86% of turnover, and 77% of SOE employment (Government of South Africa 2011). Because SOEs play an important role in providing critical services for urban development, there is concern around the poor performance of some SOEs, for example, Eskom's poor performance in terms of building infrastructure. This has led to an escalation in the

cost of its new power stations and their completion being delayed by almost four years.

Furthermore, a growing number of Eskom's power stations has been breaking down more regularly, with breakdowns topping 30% of capacity at one time during a five-month period. This imposed rolling blackouts that became an almost daily occurrence in South Africa (Mantshantsha 2015). The consequence of these blackouts was a decline in South Africa's economy, as many businesses had to close for hours at a time. It also dealt a devastating blow to an economy whose growth averaged 5% in the five years before the recession, but has weakened to below 2% since. It also limited foreign investment (Reuters 2015).

The performance of SOEs is frequently under public scrutiny for two reasons. Firstly, they often deliver services directly to the taxpayer. Secondly, taxpayers justifiably have the opinion that they are indirect shareholders of SOEs, as a great deal of the funding and equity of SOEs flows directly from the tax base of the country (Crafford 2012). Appropriately functioning SOEs with proper administration (and remuneration) practices in place are important to the "perception of the Government as servant of the people who elected it into power" (Crafford 2012: 7).

Taking into account the significance of SOEs, including, *inter alia*, the need to sustain job-creation, skills development, and retention, as well as contributing to the government's developmental and transformation agenda, it has become necessary to ensure that the link between company performance and CEO remuneration is fair and justified (Parliamentary Monitoring Group 2010).

3.2.4 SOEs' legal framework

SOEs are regulated by various specific legislative requirements. It is, furthermore, important to note that the regulatory framework for SOEs changed during the period 2003 to 2007 (Department of Public Enterprises 2001–2014). An established and sound legal and regulatory framework is an important feature of ensuring accountability of both the state acting as owner and the SOE itself, in that it establishes a clear division of responsibilities, objectives, and expectations (Balbuena 2014).

The policies, legislation, and the key terminology associated with SOEs in the three areas of national, provincial, and municipal government are summarised in Table 3.

Table 3 Policies and legislation related to SOEs

	Public entities	Policies and law	Key terms used
National public entities	Economic development Infrastructure development Education and training	• RSA Constitution • Companies Act • Establishment acts • Department protocols • Executive authority regulations	• State-owned entities • State-owned enterprises • Parastatals • Government-owned business enterprises
Provincial entities	Supporting democracy Service delivery Regulatory services Research and development	• RSA Constitution • Companies Act • Establishment acts • Provincial department policies, regulations, and protocols • Provincial legislations	• Public corporations • Public entities • Public enterprises • Municipal entities/Enterprises • State-owned companies
Municipal entities	Statutory advisory Agencies Financial intermediaries	• RSA Constitution • PFMA • MFMA • MSA • Companies Act • Council policies and by-laws	• Commercial SOEs • Non-commercial SOEs • Government-owned corporations • Government entities

Source: Presidential Review Committee on State-owned Entities (2012: 43)

The governance framework for SOEs was derived from overlapping laws, codes, and policy documents, the applicability of which would depend, in each case, on the classification of a particular SOE. Massie *et al.* (2014: 122) describe the operational environment of SOEs as "conflicting, inadequate and chaotic and fragmented." SOEs, firstly, have to conform to more legislation and laws than non-SOEs. They must adhere to (Arries 2014):

- their own enabling Act;
- the PFMA;
- the Companies Act; and

- National Treasury regulations.

Secondly, SOEs must adhere to the stipulations of King III (and from 1 April 2014, King IV). Although not legislated, its prescriptions are regarded as international best practice (Arries 2014) provide guidance on:

- principles of management of ownership;
- directors' responsibilities;
- roles of the board; and
- establishment of committees.

Despite numerous pieces of legislation, according to the Public Service Review Committee on State-owned Entities (2013), there is no dedicated, all-encompassing SOE legislation framework in South Africa.

The PFMA provides the financial framework, giving SOEs managerial and operational sovereignty. It also provides reporting mechanisms (such as the Shareholder Compact) to guide the SOE's executives in their strategic thinking (Balbuena 2014). However, not all PFMA provisions apply to all SOEs. Different types of entities with a number of commercial or non-commercial objectives are categorised according to Schedules of the PFMA. The Municipal Financial Management Act, Act 56 of 2003 (MFMA), fulfils the same role as the PFMA in the local government sphere (Balbuena 2014).

The Companies Act includes provisions relevant to incorporated SOEs, some of which are also found either in SOE's establishing acts, or in the PFMA or the MFMA. Although the Companies Act permits the development, financial administration, governance, partnerships, rescue, and termination of corporate entities in South Africa, most SOEs are not corporatized (Public Service Review Committee on State-owned Entities 2013). Those SOEs that are not companies are therefore not subject to the Companies Act, but remain bound by the PFMA and their founding legislation. The goals of the Companies Act are largely aimed at controlling the relationship between the managers who generate profit and the owners of the SOE.

SOEs are not only compelled to make a profit, they also have to deliver on social mandates that do not necessarily generate any profit (Public Service Review Committee on State-owned Entities 2013).

As can be seen from the above discussion, there is a large number of laws governing South African SOEs, and this does not seem to be an exclusively South African problem. The multiplicity of laws regulating SOEs lead to replications, repeated provisions, and opposing provisions dealing with the same issues. This means that SOEs need to reconcile diverse fragments of legislation in an effort to co-ordinate application of and compliance with these laws, while also ensuring their performance (Public Service Review Committee on State-owned Entities 2013).

3.2.5 Performance of SOEs

Even though CEOs of SOEs receive substantial amounts of money, several South African SOEs received bailouts from government to keep these SOEs afloat. Corruption and poor management have also been blamed for the billions of rands in losses these companies have recorded in recent years (Mutiso 2016). During 2009, government paid R1.4 billion to the SABC. This bailout brings the total amount of financial assistance for the SABC to R2.24 billion over four years, and the total financial assistance for SOEs amounting cumulatively to R243.25 billion during that time period (Harris 2009).

In 2015, the South African government spent nearly 10 percent of its total annual budget in servicing debts and paying money to help struggling SOEs. For example, SAA, reported a loss of R2.5 billion during 2015. Smith (2016) reports that the SAA's total bailout amounts to R29 billion in bailout funds, loan guarantees and convertible loans since the financial year 2004/2005. Broadband Infracro, responsible for providing broadband infrastructure, needed a bailout of R500 million from government during 2015 to help sustain its operations. This SOE has made losses since 2010 and only survived to date due to bailouts from government (Mutiso 2016). The South African Post Office received a R650 million bailout while being shook by fraudulent reports from the Public Protector (SABC News 2016).

3.2.6 Current issues regarding remuneration in SOEs

The performance of SOEs is continuously under public scrutiny, partly because a large portion of their funding and equity flows directly from the tax base of the country. Considering that government uses SOEs as instruments to address the developmental needs of the country, the correct functioning of SOEs, which includes rigorous remuneration practices, are important to support the view that the government is serving its citizens (Public Service Review Committee on State-owned Entities 2013).

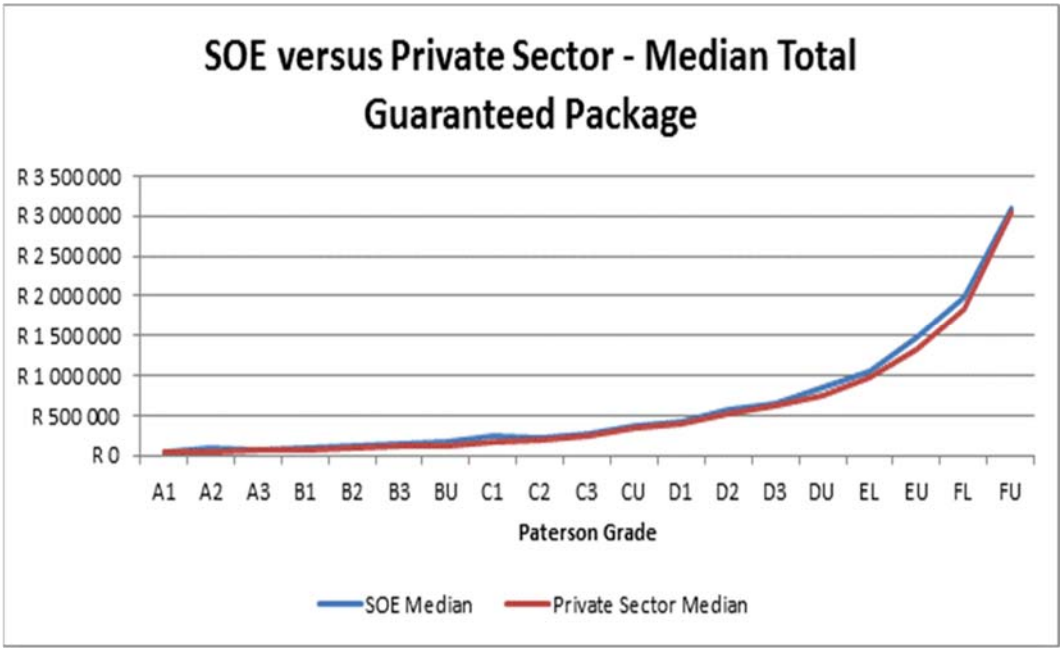
The remuneration practices of private companies and SOEs continue to be a contentious issue in many countries. As the world economy attempts to recover from the credit crisis and economic collapse, the concern over executive remuneration is even more in the public eye (Public Service Review Committee on State-owned Entities 2013).

The salaries and bonuses paid to SOE executives have triggered an outcry in recent years. For example, dismissed South African Airways (SAA) CEO Khaya Ngqula received a reimbursement of R8 million. His two predecessors departed with 'golden handshakes' worth R232 million and R3.6 million respectively. Denel's 2009/2010 annual report indicated that its CEO, Talib Sadik, was being paid R5.6 million per annum (R466 666 per month). Denel declared a loss of R544 million during 2009, an improvement on the R1.6 billion lost in the year to March 2006. The trade union Solidarity protested that Denel executives had paid themselves a further R4.3 million in bonuses for the year to March 2009, despite the loss. Armscor's 2009/2010 annual report revealed that ex-CEO Sipho Thomo received a R3.27 million remuneration package (DefenceWeb 2010). This shows that executives of SOEs are playing a part in their excessive remuneration, contributing to the pay gap between executive remuneration and the earnings of the average worker in South Africa, leading to inequality in income distribution (Theunissen 2010b).

According to Crafford (2012), there are diverse views held by various shareholders regarding how SOEs should benchmark their remuneration. As will be discussed in subsequent paragraphs, the remuneration guidelines of the Department of Public Enterprises (DPE) have mostly been ignored by SOEs, who insist that they need to

be benchmarked against the private sector (Crafford 2012). As shown in Figure 11, this has steered SOEs to paying bigger salaries and wages at virtually every level of employment.

Figure 11 SOE remuneration benchmarked against private sector



It should be noted that Paterson grading used, as indicated on the *X* axis above, where *A1* (Band A, Grade 1) represents the most junior (unskilled) role, and *FU* (Grade F Upper) represents the highest end strategic management role.

Source: 21st Century Pay Solutions (2012) and Crafford (2012)

As can be seen from the figure above, SOE median total guaranteed packages are outliers when compared to those for similar positions in the private sector (21st Century Pay Solutions 2012; Crafford 2012). The outliers are especially evident for the Paterson Grades DU (*Management/Professional*) to FU (*Strategic intent*). Even though the SOE median total guaranteed packages may seem in line with that of private sector companies, this is troubling for two reasons. First, SOE remuneration is funded from the tax coffer, and, secondly, as has been previously stated, SOEs' performance is currently problematic. Therefore, remunerating SOE CEOs on par with the private sector is contentious.

Table 4 shows the comparative ratio (compa-ratio) of the median of the sample of SOEs compared to that of the private sector (focusing only on the levels E (*Strategic execution*) and F (*Strategic intent*).

Table 4 Pay medians comparison — SOEs vs private sector

Paterson Band	Example job title	Level	SOE median	Private-sector median	Compa-ratio: SOE vs Private sector
E Lower	Senior management/ Professional	Strategic execution	1 040 583	984 464	106
E Upper			1 486 246	1 331 646	112
F Lower	Top management	Strategic Intent	1 981 795	1 841 044	108
F Upper			3 104 933	3 041 555	102

Source: 21st Century Pay Solutions (2012: 28)

As an example, a compa-ratio of 112 at the E-Upper median indicates that the median is 12% ahead of the private sector median at this level. It is therefore evident that, in every instance, the SOE median is above the private sector median, which difference ranges from 2%, at the level *Strategic intent* — Paterson Band F Upper (FU), to 12%, at the level *Strategic execution* — Paterson Band E Upper EU). From a remuneration point of view, a compa-ratio below 75 and above 125 indicates areas that require investigation (Public Service Review Committee on State-owned Entities 2013; Crafford 2012). Although the compa-ratios reflected in Table 4 are not above 125, there are causes for concern when considering the poor performance of SOEs.

During 2011, the Minister of Finance, Pravin Gordhan stated in media reports that South Africa's Gini coefficient was recorded as 0.68%, ranking as one of the highest in the world. In addition, the exorbitant remuneration received by executives of SOEs could not be aligned with the performance of the relevant SOEs (21st Century Pay Solutions 2012). The Gini coefficient for SOEs (as at 2012) was 34.8 (21st Century Pay Solutions 2012), while South Africa's overall Gini coefficient was 65.0 (placing South Africa third on the list of countries) (Central Intelligence Agency 2012). Even though the SOEs' Gini coefficient is considerably lower than the rest of the country's, the sustainability of this practice is questionable (Crafford 2012). SOEs (at the median level) pay anywhere between 102% and 112% of private sector's salaries at senior and top management level (refer to Table 4, above). This suggests that, when executive remuneration increases, so too do salaries at the lower level. Eventually, the liability becomes too large for the entity to bear, who then needs to revert to the state for financial assistance (Crafford 2012).

Being mechanisms of state, SOEs need to lead the way in systemic change. If SOEs continue to pay above private-sector levels, the reaction from the private sector may be to disregard "calls for more responsible remuneration practices" (Crafford 2012: 35).

3.2.7 Challenges regarding remuneration in SOEs

Based on his review, Crafford (2012), as well as the Presidential Review Committee on State-owned Entities (2013), outlined the following challenges with regard to SOEs' remuneration.

- **Inconsistencies in remuneration in SOEs**

The remuneration of the executives and senior staff of SOEs is notably inconsistent between SOEs, and there is no clear reason why CEOs in some SOEs are remunerated at considerably higher levels than in others. The National Treasury's review of board and executive remuneration of Schedule 1, 2, 3A, and 3B entities (per the PFMA, released in September 2010) found that there were significant differences in the salary increases awarded to the CEOs of various SOEs. According to the Public Sector Search Centre, the reasons for the anomalies include a lack of clear guidelines for setting the remuneration of CEOs, executives, and senior management. Furthermore, where there are indeed guidelines, such as the DPE's remuneration guidelines, some SOEs did not follow the guidelines.

- **No standard implementation of guidelines for determining SOE remuneration**

Despite the fact that the DPE set guidelines in 2007 for the SOEs' remuneration, the implementation thereof was not consistent across SOEs. It appears that some SOEs do not to pay attention to guidelines other than those of the Department of Public Service and Administration for the public sector. The various departmental ministries apply different approaches, and, even within ministries, there appears to be a lack of common standards. Examples would be the National Treasury that deals differently with its public entities, e.g., the South African Social Security Agency (SASSA) and SARS. SASSA's remuneration structure is aligned with public

sector pay, whereas SARS's is aligned with that of the private sector (Crafford 2012).

- **Correlation between SOEs and the private sector**

SOEs generally pay more than the public sector (Crafford 2012). The statistics show that, for the measure of guaranteed pay, SOEs pay above the market in almost every job category. The private sector, however, at the upper executive level, pays higher than SOEs. A number of factors could explain this, for example company size, complexity, and industry characteristics.

- **No common mechanism with which to consider sizing and other factors influencing remuneration**

The inconsistency in SOEs' remuneration occurs in the absence of a properly developed and adopted sizing or positioning model. Without such a standard, SOEs deal with remuneration in an inconsistent manner. By not having a properly ratified model, government is placing itself at significant risk of manipulation.

As is clear from the above discussion, SOEs' remuneration practices are noticeably responsible for increasing inequality, despite SOEs having a public mandate to achieve alignment (21st Century Pay Solutions 2012).

- **The income disparity between executives and workers**

PwC conducted a study in 2010 that was commissioned by the Presidential Review Committee on State-owned Entities. It was found that the remuneration levels of executives were moving further and further away from those of workers on the lowest level. This is creating a constantly widening wage gap (Public Service Review Committee on State-owned Entities 2013).

- **Absence of a centralised authority to manage SOEs' remuneration**

Due to the lack of a centralised authority to manage SOEs' remuneration, the boards of SOEs and their CEOs are responsible for determining salaries. The result thereof

is that salaries differ considerably from the equality and market line. CEOs being involved in the determination process may be leading to them serving their own interests. Demirer and Yuan (2011: 1) posit that "managers have incentives to pursue self-serving goals that may not maximize the shareholder value." They further postulate that shareholders often do not have enough information regarding executives' activities. It is therefore difficult to verify whether executives are acting in the best interests of the shareholders.

In this regard, Bussin and Modau (2015) found that CEO remuneration contracts are influenced by the tendency of executives to enrich themselves. These remuneration contracts are therefore no longer aligned with the goals of organisations and their shareholders (Bussin & Modau 2015).

3.3 STATE-SPONSORED REVIEWS OF SOUTH AFRICAN SOE REMUNERATION PRACTICES AND FRAMEWORKS

The subject of SOE's remuneration has prompted a number of reviews by executive oversight departments, especially the DPE, as it oversees key commercial enterprises. However, it appears that the focus of the remuneration reviews is private entities, and that the large number of SOEs do not have a standardised approach or framework for remuneration. Table 5 highlights previous reviews conducted on SOEs.

Table 5 List of research initiatives on SOEs

Initiative and year	Initiator	Affected SOEs
DPE remuneration guidelines for SOEs (2007)	DPE	SOEs under the DPE
Remuneration overview for SOEs (2010)	DPE	SOEs under the DPE
Board and CEO remuneration review (2010)	National treasury	PFMA Schedule 2, 3A, and 3B entities
Presidential Review Committee on State-owned Entities (2012)	President of South Africa	All SOEs in South Africa

Source: Adapted from Crafford (2012) and Presidential Review Committee on State-owned Entities (2013)

3.3.1 DPE remuneration guidelines for SOEs (2007)

In 2007, the DPE issued guidelines for SOE remuneration, based on market data sourced from 600 South African companies. These guidelines were aimed at assisting SOE boards and remuneration committees in negotiating and determining remuneration (Massie *et al*. 2014). In these guidelines, the DPE distinguished between four broad categories within which SOEs could fall, based on size, as determined by assets and revenue. Table 6 lists the four categories.

Table 6 SOE Categorisation — assets and revenue

SOE size	Assets	Revenue	SOE category
A	>R16.3bn	>R2.54bn	Very large SOE
B	R1.55bn – R16.3bn	R243.2m – R2.54bn	Large SOE
C	R143.5m – R1.55bn	R22.8m – R243.2m	Medium SOE
D	Up to R143.5m	Up to R22.8m	Small SOE

Source: DPE 2007 (State-owned Enterprises Remuneration Guidelines: 6)

The DPE guidelines (Crafford 2012: 11) include the following:

- Guaranteed executive pay, STIs, and LTIs are not to exceed the median value of the model developed by the DPE — the median value remains the threshold throughout.

- Boards are required to obtain approval, and have to provide a strong motivation if they contravene the above.
- Written agreement by the shareholder to attest that the pay of executives adheres to these guidelines is required.
- Full disclosure of all components of executive pay shall be carried out in line with the Companies Act, the PFMA, and King IV.
- The total value of STIs and LTI's shall not exceed 125% of guaranteed annual pay of CEOs and 85% of other executives.
- The role of the remuneration committee is to ensure that there is a well-defined and direct link between remuneration and contribution to company performance. Furthermore, shareholders are fully informed on remuneration policies applied (including management of deviations from the guidelines), and the contracts with executives are to ensure that SOEs would not be at risk to pay in the event of executive failure.

Although the guidelines are relatively extensive, seemingly supported by vigorous research and analysis, the disadvantage is that these guidelines are, for the most part, focused on SOEs that report to the DPE. They are therefore not applicable to the majority of SOEs (Crafford 2012).

3.3.2 DPE-commissioned remuneration review of SOEs (2010)

The objective of the review commissioned by the DPE in 2010 was to determine the degree of compliance of SOE remuneration practices with DPE guidelines. A further objective was to assess the remuneration practices of SOEs against general market practices. If compliance was found to be unsatisfactory, the reason for this had to be determined (Crafford 2012). Noteworthy findings of the review included the following (Crafford 2012: 12):

- SOEs do not follow the DPE guidelines issued in 2007 and updated in 2009.
- SOE remuneration practices are in line with those of the private sector.
- Instances of non-compliance mostly related to guaranteed or fixed pay. Surprisingly, there was greater compliance with regard to incentive schemes.

- Although STIs and LTIs were aligned to the guidelines, corroborating evidence lacked to verify that payments corresponded to achievements.
- There was a notable absence of standardisation in the way in which remuneration was determined, with some SOEs using the guidelines, and others not. The approval process followed and the structuring of the remuneration packages also lacked standardisation.
- Employment contracts for CEOs and executives did not comply with the Basic Conditions of Employment Act, Act 11 of 2002, in terms of detailing work, job descriptions, job specifications, job outputs, and benefit components.

Table 7 shows some of the pay discrepancies of executive remuneration (at the median level) with the DPE guidelines.

Table 7 Inconsistencies in remuneration to median as per DPE guidelines (DPE 2010)

State-owned enterprise (DPE oversight)	Executive remuneration % ABOVE median	Executive remuneration % BELOW median
Alexkor		8%
Aventura	66%	
Denel	15%	
Eskom		31%
Infraco		10%
PBMR	26%	
SA Express		8%
SAA	18%	
Safcol		27%

Source: Adapted from Crafford (2012:12)

Table 7 shows that, even in this small sample of SOEs (those reporting to the DPE at the time), the inconsistency in remuneration guidelines is noteworthy (Crafford 2012).

The DPE review further highlighted a problem with the executive oversight role played by state departments. The inconsistency with guidelines points to a disappointing degree of monitoring and evaluation, caused "either by the lack of capacity, or by ignorance" (Crafford 2012: 14).

3.2.3 National Treasury's review of SOE remuneration (2010)

In September 2010, the national treasury published a review of board and executive remuneration of Schedule 1, 2, 3A, and 3B entities (per the PFMA). The period under review was 2007 to 2010 (Crafford 2012). The review was presented to the Public Sector Research Centre in the form of a presentation, and included important information about irregularities in, particularly, executive remuneration in SOEs. Noteworthy findings from this study, with reference to Schedule 2 entities, included the following (Crafford 2012: 15):

- Within a three-year period, and with no clear reason, the total remuneration of the CEO of Transnet went from R11 million to R19 million, and back to R11 million. During the same period, SAA's total remuneration increased from R7 million to R14 million, and then back to R4 million.
- The fixed pay of CEOs ranged between R2 million and R4 million. The remainder of the remuneration consisted of bonuses, expenses, and a category called 'Other'
- Eskom and Transnet are equally critical to the economy and development of the country. However, the Transnet CEO earned double what the CEO of Eskom earned.

3.3.4 The Presidential Review Committee on State-owned Entities (2013)

As indicated above, government has been active in its review of SOE remuneration policies. The Presidential Review Committee on State-owned Entities, established in 2010, made 21 recommendations in its 2012 report, one of which related to differential aspects of the remuneration policies of SOEs (Massie *et al*. 2014). The Presidential Review Committee on State-owned entities also contracted 21st Century Pay Solutions to conduct an analysis of SOEs' remuneration practices. 21st Century Pay Solutions concluded that "SOEs' remuneration practices are

demonstrably responsible for a deepening inequality and SEOs bear a public mandate to which alignment needs to be achieved, both in Executive and General pay bonuses" (21st Century Pay Solutions 2012: 22).

The Presidential Review Committee on State-owned Entities pointed out that one of the key problems with the current SOE remuneration framework was the non-existence of a centralised authority for SOE remuneration, resulting in SOE boards and the CEOs determining their own remuneration (Massie *et al.* 2014). With regard to remuneration practices, the Presidential Review Committee on State-owned Entities recommended replacing the current disjointed system with a central remuneration authority (CRA), which should:

- "be assigned a large degree of self-sufficiency along with the needed authority to develop an all-encompassing framework for remuneration in SOEs;
- make available guiding principles and parameters within which the board may apply its discretion on remuneration;
- offer direction on remuneration of SOEs' boards and executives;
- notify government on the suitability of the remuneration policies, practices and both short and long-term incentive approaches developed by SOEs;
- every so often review the significance and relevance of executive incentives or benefits paid outside the executive's total package;
- conduct benchmarking and set standards for annual remuneration; and
- deliver a SOE remuneration update on a yearly basis for government to promote transparency processes." (Presidential Review Committee on State-owned Entities 2013: 123).

The Presidential Review Committee on State-owned Entities, in addition, recommended that boards retain their discretion to act in the best interests of SOEs, but that limits for the boards' discretion be set by the CRA, and that any deviations from the CRA parameters require its approval. It was also recommended that an official from the National Treasury chair the CRA (Masse *et al.* 2014).

Massie *et al*. (2014) support the idea of a consolidated framework for SOEs encompassing a CRA. The developmental suggestions by the Presidential Review

Committee on State-owned Entities would provide SOEs with a modern, coherent, and flexible framework within which to operate. This would provide certainty to administrators and uniformity in the pay practices across SOEs, alleviate potential duplication across institutions, reign in opportunistic executives, and be to general benefit to society (Massie *et al.* 2014).

3.4 INTERNATIONAL PERSPECTIVES ON SOE REMUNERATION

In November 2011, a subgroup of the Presidential Review Committee on State-owned Entities undertook a benchmarking tour to Europe to visit countries such as Poland, Norway, Germany, Netherlands, and France. Although the group was asked to gather information on remuneration, the sharing of information by these countries was limited. It appeared that the issue of remuneration is as much a problematic, if not confusing, area for these European countries as it is for South Africa (Crafford 2012: 21). Some of the key findings of this investigation included the following:

- In the **Netherlands**, shareholders have the right to determine the remuneration policies of SOEs (within a system of three categories of SOEs, with capped upper ranges in each category). These categories are: (1) SOEs with a role in the economy and who are close to government (e.g., services), (2) SOEs with a clear public role and interest, who are also competing with private-sector companies, and (3) SOEs that are clearly private companies, e.g., airports companies.
- In **Germany**, salaries of SOEs are kept below the market average. How they achieve competitiveness is not clear.
- In **Norway**, the government's Ownership Department issued guidelines for moderation (including a limit of 50% of overall remuneration on variable pay); SOEs should submit their remuneration policy to government.
- In **Poland**, there is a draft bill to abolish capped pay for CEOs of SOEs. With this capped-pay policy, the treasury has to be notified when pay exceeds predetermined levels, even when the state holds less than 50% of the shares. The capping of CEO pay, however, means that, in some companies, about 150 people earn more than the CEO.

- In **France**, CEO remuneration levels in SOEs have to be approved by the shareholders, although the remuneration levels remain the responsibility of the board.

From these international perspectives, it can be inferred that executive remuneration in SOEs is a sensitive and concerning issue worldwide (Crafford 2012).

3.5 MEASURING COMPANY PERFORMANCE

According to Musvasva (2013), company performance is the *overall* performance of a company. The literature defines *performance* as a determining factor of executive remuneration, and looks at other possible factors that can affect the executive remuneration (Gabay 2005).

Canarella and Gaparyan (2008) hypothesise that, in the literature on remuneration, there is no accord on the ideal measure of company performance. Jeppson, Smith and Stone (2009: 82) assert that there is no consensus on the meaning of *company performance*, and that "prior studies have used a variety of financial and non-financial measures." Moreover, Sarkar (2013: 100) describes the relationship between executive remuneration and company performance as "seemingly complex."

3.5.1 Effect of executive remuneration on company performance

An important aspect of ensuring that executive remuneration is equitably and appropriately constructed is the use of company performance measures (Chen, Zhang, Xiao, & Li 2011). These company performance measures should take into account a company's long-term objectives, as a company's success is essentially explained by its performance over an extended period (Eisenhardt 1989; Jensen & Murphy 2004).

Core, Guay, and Larcker (2003) postulate that studies predicting how executive remuneration affects company performance are limited. Nonetheless, according to motivation theories, remuneration could be expected to increase enthusiasm, which

ought to influence company performance in a positive way (Swatdikun 2013). To encourage executives to exert more effort will drive not only the individual but also organisational performance. For the reason that large amount of earnings will return to the executive when they put in more effort (Fakhfakh & Perotin 2000).

Researchers have, since the earliest studies on remuneration, been conscious that it is necessary to understand whether CEO remuneration has the power to influence company performance (Heugens, Van Essen, & Van Oosterhout 2009). According to Swatdikun (2013), various authors proclaim that executive remuneration is a predictor of company performance; however, performance proxy-accounting-based versus market-based measures of performance are still under discussion. For example, Leonard (1990) finds that ROE correlates with STIs and Abowd (1990) finds that executive remuneration has links to company performance in the next year.

Swatdikun (2013) provides evidence that executive remuneration affects company performance; however, the measures of company performance are still under debate. This sentiment is echoed by Bussin (2014). In the literature on remuneration, there is no accord regarding the perfect measure of company performance, because researchers have measured organisational performance in a variety of ways (Bussin 2014).

3.5.2 Company performance

Various measures and categories of measures have been used as a proxy for company performance in studies on remuneration. The core classifications of performance measures include accounting measures, financial measures, relative performance, and subjective performance measures (Florin *et al.* 2010). A measurement of the performance of a company should enable the comparison of levels of performance over different periods (Al-Matari, Al-Swidi, & Fadzil 2014). However, no specific measurement with the ability to measure every performance aspect has been proposed to date (Al-Matari *et al*. 2014).

What is of importance is that the link between executive remuneration and company performance, to some extent, seems to be influenced by the performance measurement employed (Florin *et al*. 2010). For example, Abowd (1990) found that the link was considerably stronger for market measures than for accounting measures. Market return, accounting income, and cash-flow performance have been extensively discussed, but a definitive opinion on the use of performance assessment has not yet been found (Swatdikun 2013).

Swatdikun (2013) claims that one concern challenging researchers' understanding of the relationship between executive remuneration and company performance is researchers' understanding of the methods used to measure company performance.

3.5.2.1 Methods of measuring company performance

Researchers generally use financial performance as a measure of company performance (Demirer & Yuan 2011). Numerous studies have used accounting-based measures, such as NP, ROE, and ROA, together with market-based measures, such as stock-price and total shareholder return (Nourayi & Mintz 2008). Accounting-based measurements are generally believed to be an effective indicator of a company's profitability, and can be categorised into residual and ratio terms (Xu 2013). Market-based measurements are characterised by a forward-looking aspect, objectivity, and consideration of the expectations of the shareholders relating to the company's future performance (Swatdikun 2013).

Accounting measures have been used for many years as key indicators of company performance, with previous research detailing a noteworthy relationship between accounting-based performance measures and executive remuneration (Ittner 1997). Wang and Moini (2012) indicate the following advantages of using accounting measures for company performance: the measures generate provable data, realised returns are reported, and it is simple to implement. In addition, Xu (2013) states that accounting measures exclude factors that are beyond executives' control, such as an economic recession.

Otieno (2011) claims that another advantage of using accounting information is that it can show the productivity of the entity, thereby providing executives with a monitoring tool. Researchers often use accounting performance measures to evaluate executive performance. This is largely because of the observability and relatively high degree of correlation between accounting performance and executives' efforts (Chen, Shen, Xin, & Zhang 2012). Furthermore, accounting measures or rates of return are appropriate for both listed and unlisted entities (Otieno 2011).

Researchers have recognised that each of these performance measures has shortcomings. From a shareholder's viewpoint, return is generated from stock price variables, and is not defined in accounting terms. In principle, market-based measures are forward-looking measures of company performance, as they indicate managerial decisions that encourage future profitability (Nourayi & Mintz 2008). On the other hand, accounting-based measures of performance use historical data, and the results are thus less relevant to shareholders' (Nourayi & Mintz 2008). Murphy (1999) states that, because profits are backward-looking, managers may become too focused on short-term objectives, thereby becoming unwilling to reduce current profitability, even when it would result in improved cost-effectiveness in future. Another disadvantage of using accounting measures for company performance is that these can be influenced by accounting practices, such as the different methods applied to valuations of tangible and intangible capital (Musvasva 2013).

Otieno (2011) noted that executives can manipulate accounting profits, reporting economic income that does not reflect reported income. In addition, Alon, Adithipyangkul, and Zhang (2009) posit that accounting data are based on history and may be focused on the short term, and may therefore not encapsulate the CEO's actions that will add to long-term business success.

Despite the shortcomings of accounting measures, these remain the main tool for evaluating company performance. One reason for this is that accounting information has to be available free of charge under the requirements of commercial law (Swatdikun 2013).

Abowd (1990) found a relatively weak relationship between accounting measures of company performance and CEO remuneration (Van Blerck 2012). Contrary to this, Attaway (2000), in his study, used present ROE (an accounting-based approach), and found a small put positive relationship between company performance and CEO remuneration. Damen (2011) investigated the relationship between ROA and annual stock return, and found that ROA had a significant positive effect on CEO total remuneration in the banking industry. Sigler (2011) measured company performance using ROA and the market-based measure of annual stock return to total return on common stock, and found that ROA was insignificant in explaining CEO remuneration in the retail industry. He, however, found that market-based performance measures positively and significantly related to CEO remuneration.

Merchant (2006), however, proposes that none of these three measures is perfect, and that more studies are required on the advantages and disadvantages of each company performance measurement.

3.5.2.2 Trends in the measurement of company performance

Boards of directors use several measures that effortlessly track and measure company performance (Resnick 2013). Resnick (2013) indicates that research by Murphy (1998) showed that there is no fixed trend in the selection of performance measures and their alignment of company performance with the CEO's remuneration. Blair (2014) posits that the results of previous studies on remuneration vary widely, depending on the performance measures used. Motala and Fourie (2014) postulate that, although academics, in earlier research, documented various indicators of company performance, they hold opposing views on which indicators are most appropriate.

Murphy (1998) posits that Western countries (the USA, UK, and member states of the European Union) focus more on short-term financial performance, while Eastern nations (Japan, China, India, etc.) tend to address long-term performance and sustainability, which may be financial and non-financial. Murphy's 1998 study showed that sales growth, share-price growth, earnings per share (EPS), ROE, and

economic value added (EVA) are the most popular performance measures in Western countries.

Building on Murphy's (1985) seminal work, Tosi *et al*. (2000) extended the definition of company performance to take account of a broader set of corporate performance measures: absolute financial performance, ROE in both the short and the long term, ROA, share-price performance, market returns, and internal performance indicators.

In their study, Smith *et al.* (2006) used the following four measures of company performance: gross profit/net sales, contribution margin/net sales, operating income/net assets, and net income after tax/net assets.

Jeppson *et al*. (2009) studied 200 large public companies for the period 2007 to 2008. These researchers used the following variables to study company performance: total revenue, percent change in net income, and percent change in total shareholder return. These researchers found that company performance as measured by total company revenue was a significant factor in determining base salaries, bonuses, benefits, and the value of stock awards.

Dommisse (2011) found a strong relationship between CEO remuneration and turnover, total income, and profit margins. Otieno (2011), in determining the relationship between financial performance and executive remuneration in South African SOEs within the context of the agency theory, used NP, revenue, and total assets as measures of financial performance. Gigliotti (2012) examined the relationship between company performance and remuneration of Italian companies listed on the Milan Stock Exchange for the period 2004 to 2009 using ROE, ROA, and return on investment (ROI) to measure company performance.

In addition to using the 'traditional' performance measures of ROA and ROE, De Wet (2012) used EVA and market value-add (MVA) to test the relationship between executive remuneration and company performance. Although De Wet's (2012) findings revealed a significant relationship between executive remuneration and

EVA and MVA, the relationship between executive remuneration and results of the traditional measures (ROA and ROE) was stronger. De Wet (2012) concluded that South African companies need to shift the emphasis from traditional performance measures to value-creation measures when designing and implementing executive remuneration plans, because the former are susceptible to manipulation. These measures also do not fully point out the risk to a company related to the share price (Motala & Fourie 2014). Lee and Kim (2009) postulate EVA as an overall measure of financial performance, as it reflects a company's true performance.

In his study, Diamantopoulos (2012) used two pure accounting measures that are considered good indicators of performance, namely ROA and return on sales (ROS). The researcher then used annual holding period returns (AHPRs) as a proxy for market performance, and, lastly, a performance measure that combines accounting and market values, namely Tobin's Q. In Van Blerck's (2012) study, the research questions evaluated the relationship between executive remuneration, EVA, and equity-based measures of performance, such as ROE and share price. In his study, Nel (2012) observed the relationship between the financial performance of South African retail and consumer goods companies in terms of ROE, profit margin, asset turnover, and financial leverage.

Bradley (2013) performed a study over a period of five years on the largest 40 companies on the JSE, and found no relationship between CEO remuneration and ROE, ROA, and EPS. In his study, Resnick (2013) selected the following company performance measures: revenue, share price, NP, and net assets. A study of listed Chinese logistics companies demonstrated no linear relationship between executive remuneration and company performance when using EPS and ROE as performance measures (Fang, Ya-xuan, & Hui 2013).

Nulla (2014) investigated the effect of CEO roles with accounting performance towards CEO remuneration in the New York Stock Exchange companies for the period 2005 to 2010. One hundred and twenty companies was selected for the study. Nulla (2014) used the following accounting performance measures: ROA, ROE, EPS, cash flow per share (CFPS), net profit margin (NPM), book value per

common stock outstanding (BVCSO), and market value per common stock outstanding (MVCSO). From the study it was found that there was a relationship between CEO salary, CEO bonus, CEO total remuneration, and accounting performance.

Theku (2014) used both accounting and market measures to measure organisational performance, using data from the McGregor BFA database, such as organisations' financial statements, directors' reports, and JSE performance archives. This author used the following as company performance measures: ROE; ROA; asset turnover; revenue; earnings before interest, tax, depreciation, and amortisation (EBITDA); headline earnings per share (HEPS), change in share price, and market capitalisation.

From the above, it is clear that there is not a single, agreed-upon measure of company performance; rather a range of different company performance measures should be used to determine the performance of a company.

The company performance measures used in the present study will be discussed in detail in Chapter 4, Section 4.6.2. It should be noted that, for the present study, mainly accounting measures were used, because accounting data are verifiable and commonly understood (Murphy 1999).

3.6 PREVIOUS STUDIES ON EXECUTIVE REMUNERATION AND COMPANY PERFORMANCE

The importance of the relationship between company performance and executive remuneration has been well documented in corporate governance and other literature (Diamantopoulos 2012). Several empirical studies, especially in the last two decades, attempted to provide convincing evidence about the relationship between executive remuneration and company performance. The results of these studies are, however, not explicit, because, in most cases, only a weak pay–performance relationship was found. Contrary to these findings, other studies reported a strong pay–performance relationship, while still other studies reported a

negative relationship between executive remuneration and company performance (Grivas 2013).

Tariq (2010) postulates that various studies have tried to answer the question whether the remuneration of the CEO is related to the performance of the company, but that the results are ambiguous and, in some cases, contradictory. Despite all the research conducted, the results remain inconclusive and unclear (Bootsma 2009; Ntim *et al*. 2013).

Ebert *et al.* (2008) presented a paper indicating that a straightforward relationship between executive remuneration and company performance is difficult to establish, and that such a relationship would be country-specific. It would seem that the matter of linking executive remuneration to company performance is influenced by economic, institutional, and cultural characteristics predominant in the countries under examination (Ntim *et al*. 2013). According to Bevan (2013), the research aimed at examining the link between remuneration and company performance has been far from scientific.

The results of previous such studies, particularly in South Africa, varied, and are inconclusive. The reason for this is that previous studies did not consider whether the company performance measures chosen had relationships with executive remuneration in each industry (Blair 2014). Bruce *et al*. (2005) rightly posit that past research investigating the link between executive remuneration and company performance reveals a lack of consensus.

The findings of previous research can be separated into three categories of findings: (1) executive remuneration is positively related to company performance, (2) executive remuneration is negatively related to company performance, and (3) there is no relationship between executive remuneration and company performance.

3.6.1 Studies revealing a positive relationship between CEO remuneration and company performance

A number of researchers concluded that there is a positive relationship between CEO remuneration and company performance, for example Murphy (1985), Jensen and Murphy (1990), Brunello, Graziano and Parigi (2001), Kato and Long (2004), Mengistae and Xu (2004), Gabay (2005), Firth, Fung, and Rui (2007), Buck, Lui, and Skovoroda (2008), Unite, Sullivan, Brookman, Majadillas, and Taningco (2008), Ozkan (2011), Junarsin (2011), Zigler (2011), Demirer and Yuan (2013), Feng and Johansson (2013), Tian (2013), and Dai (2014). The bulk of these studies were conducted in the UK and the USA.

Studies conducted on SOEs, and where a positive relationship was found between CEO remuneration and company performance are those of Xin and Tan (2009), Chen, Ezzamel, Cai (2011), and Chen *et al.* (2012). Otieno (2011) and Ngwenya and Khumalo (2012) conducted studies on South African SOEs. Otieno (2011) aimed to determine the relationship between financial performance and executive remuneration in South African SOEs within the context of the agency theory. Otieno's findings revealed a positive relationship between executive remuneration and company performance. Ngwenya and Khumalo (2012) found a positive relationship between CEO remuneration (base salary) and the size of SOEs as measured by total revenue and number of employees.

Studies conducted on the subject in South Africa that found a positive relationship were those of Dommisse (2011), Shaw (2011), De Wet (2012), Scholtz and Smit (2012), Van Blerck (2012), Modau (2013), Blair (2014), and Bussin and Modau (2015). Findings from Modise's (1993) study supported the hypothesis that changes in executive remuneration are positively related to changes in corporate performance, although the effect was very small. Dommisse (2011) found a strong relationship between CEO remuneration and turnover, total income, and profit margins. Shaw (2011) found there was generally a positive relationship between CEO remuneration and company performance in the South African financial services industry for the period 2005 to 2010. De Wet (2012) found a positive relationship between CEO remuneration and company performance across all industries, but only used ROA and ROE as measures. Scholtz and Smit (2012)

investigated the link between company performance and short-term executive remuneration of companies listed on the South African Alternative Exchange (AltX). They found a strong relationship between executive remuneration and some company performance indicators, such as total assets, turnover, and share price.

Van Blerck (2012) tested the interrelationships between executive remuneration, EVA, ROE, and growth in share price in South African banks. The findings suggested a strong positive correlation between executive remuneration and the results of the performance measures, which included EVA. The correlation strengthened before the financial crisis. Modau's (2013) study of the Top 40 JSE-listed companies for the period 2006 to 2012 found a generally positive relationship between CEO remuneration and company performance. Bussin and Modau (2015) found a relationship between CEOs' STIs and company performance, using accounting-based organisational performance measures.

Blair (2014) conducted a study on the relationship between the CEO remuneration and the financial performance measures of JSE-listed companies in five industries for the period 2008 to 2012. Blair calculated total CEO earnings utilizing the Black Scholes method to determine the long-term portion of CEO remuneration. The results suggested a positive and significant relationship between CEO remuneration and company performance in four of the five industries investigated. Finally, Theku (2014) found a moderate to strong relationship between CEO remuneration and organisational performance in the South Africa mining industry. Theku studied 30 mining companies over a five-year period (2009 to 2013).

3.6.2 Studies revealing a negative relationship between CEO remuneration and company performance

A small number of previous studies found a negative relationship between CEO remuneration and company performance (Wilson, Chacko, Shrader, & Mullen 1992; Grunditz & Lindqvist 2003; Basu, Hwang, Mitsudome, & Weintrop 2007; Duffhues & Kabir 2008). From a SOE perspective, Kyalo (2015) found a weak negative relationship between executive remuneration and financial performance.

From a South African perspective, Bussin and Nel (2015) found that CEOs' guaranteed cost to company has shown no sensitivity to company financial

performance in terms of the DuPont analysis. These authors furthermore found a negative relationship between ROE and the guaranteed cost to company of the CEOs in the South African retail and consumer goods sector.

3.6.3 Studies revealing no relationship between CEO remuneration and company performance

Few researchers found either a low or no relationship between CEO remuneration and company performance (Zhou 2000; Elayan, Lau, & Meyer 2001; Abdu 2011; Zhou, Georgakopoulos, Sotiropoulos, & Vaseileiou 2011; Gigliotti 2012).

Gregg, Jewell, and Tonks (2010) confirmed an asymmetric relationship between executive pay and company performance. Diamantopoulos (2012), in his empirical study of Standard & Poor's top 500 firms for the period 2005 to 2011, obtained ambiguous results, and stated that there was not a significant relationship between CEO remuneration and the performance of large firms in the USA. Kua, Lin, and Wang (2012) propose that the weak link found between CEO remuneration and company performance may be explained by the fact that previous studies have ignored the possibility of a nonlinear-relationship between CEO remuneration and company performance.

In a South African study, Bradley (2013) investigated the relationship between CEO remuneration and company performance in the 40 largest public companies listed on the JSE for a five-year period. He found no relationship between CEO remuneration and measures of performance such as ROE, ROA, and EPS. In another South African study, Ngwenya and Khumalo (2012) investigated the relationship between CEO remuneration and the performance of South African SOEs, using data for the period 2009 to 2011. Their results indicated no positive relationship between CEO remuneration and SOE performance as measured by ROA.

Finally, Motala and Fourie (2014) investigated the remuneration structure of 19 South African retail companies for the period 2008 to 2013. The aim of their study was to identify the level of share-based awards expensed by the company. They found little evidence to support the proposition that a relationship exists between equity-based remuneration and company performance.

3.6.4 Conclusions regarding the relationship between company performance and executive remuneration

Large executive cash remuneration may attract criticism, and, as a result, SOEs will probably make use of other forms of payment to reward their CEOs (Alon *et al*. 2009: 10). Prior studies, especially in South Africa, have focused predominantly on listed public companies. The remuneration–performance relationship in SOEs in South Africa is therefore not fully understood. Furthermore, the literature regarding the remuneration practices of SOEs is inadequate, and the findings regarding the relationship between CEO remuneration and SOEs' performance remain vague (Reddy & Whang 2014)

Research conducted by PWC (2014) revealed that the relationship between executive remuneration and company performance is slowly growing stronger. PwC, in 2013, using a cross-sectional dataset of 286 listed South African companies found that 32.5% of current-year executive remuneration was based on company performance, compared to 21.1% in 2000.

Based on these studies, it is clear that the relationship between CEO remuneration and company performance is not clear (Tariq 2010). In this regard, Blair (2014: 22) noted, "It is clear that the research to support the link of CEO pay to company performance metrics is not definitive, and that the results of the research varies depending on the performance metrics that were investigated."

3.7 CHAPTER SUMMARY

After more than four decades of research, there is still no proven result concerning the nature of the remuneration–performance relationship. The issues remain unresolved for various reasons, namely the different datasets used, diversity of the methods used to analyse the datasets, heterogeneity in terms of recognised factors of countries, and the endogeneity of variables not being considered (Reddy & Whang 2014).

From the literature, it is evident that the current remuneration practices in SOEs are far from perfect. There is a clear lack of standardisation of remuneration practices across SOEs, and instances of unsubstantiated and excessive remuneration are certain to continue. Part of the problem is the inconsistent regulatory framework for SOEs, together with non-compliance with existing guidelines. The complexity of the current framework places a burden on the officers of SOEs.

Previous studies primarily focused on companies in the USA and the UK, and, as a result, literature relating to South Africa in this area is relative scarce. Despite various studies having been conducted on the pay–performance relationship in SOEs, most of these were conducted abroad. The findings of these studies were often inconclusive, and the researchers identified the different remuneration structures as the main obstacle in establishing a link between executive pay and company performance.

Although various measures and categories of measures are used as proxy for performance throughout the literature on executive remuneration, no specific measurement with the ability to measure every performance aspect has been proposed to date.

The issue of remuneration of CEOs and executives remains sensitive worldwide. It is no different in South Africa, and what gives further weight to the significance of the issue in this country is the problem of inequality. CEO remuneration is categorised by high inconsistency, significant inequality, and concerns regarding sustainability of what appears to be ‘runaway’ remuneration levels.

This concludes the discussion on SOEs and company performance measures. The next chapter provides a discussion of the research methodology of the present study.

CHAPTER 4: RESEARCH METHODOLOGY

Research is to see what everybody else has seen and to think what nobody else has thought.

Albert Szent-Gyorgyi (1893–1986)

4.1 INTRODUCTION

The aim of this chapter is to discuss the research methodology employed to determine the relationship between company performance and executive remuneration. The discussion of the research methodology is followed by a description of the research objectives and the research questions.

Having discussed the research methodology, an explanation is provided on the sampling strategy, the variables used, the data-collection process, and the measurement of the variables. This chapter concludes by looking at the limitations and ethical considerations pertaining to this study. The assumptions and anomalies relating to the data are also outlined.

4.2 OVERVIEW OF PAST RESEARCH DATA AND METHODOLOGIES

This section will provide an overview of past research data and methodologies used, mainly focusing on South African studies. Wilson *et al*. (1992: 497) claim that a number of studies, using a variety of company performance measures have found that there is "little or no relationship between executive pay and company performance." Wilson *et al*. (1992) also emphasise that the differences in the findings not only related to the relationship between executive pay and company performance, but also the methodologies and variables required to study this phenomenon.

In general, empirical research on the relationship between executive pay and company performance was typically based on econometric regression models that took into account a number of economic variables (see, for example, Barber, Ghiselli, and Deale (2006), Jeppson *et al.* (2009), Farmer, Alexandrou and Archibold (2010), and Callan and Thomas (2012).

Research on the relationship between executive remuneration and company performance has been a source of numerous debates amongst a number of researchers (Otieno 2011). One of the difficulties in comparing the immense volume of results of all the academic papers on this topic is that very few of these evaluate the same model (Florin *et al*. 2010).

During 2011, Otieno, employing a quantitative methodology, aimed to determine the relationship between financial performance and executive remuneration in South African SOEs within the context of the agency theory, for the period 2007 to 2009. Secondary data were obtained from annual financial reports of Schedule 2 SOEs, and NP, revenue, and total assets were used as measures of financial performance. Step-wise regression analysis was used to analyse the numerical data. In order to determine whether regression analysis was necessary, the correlation between the measures of remuneration and the measures of company performance were first established. In addition, given the possibility of a lagged relationship between the variables of remuneration and performance, a lagged step-wise regression analysis was conducted. This was done by lagging the performance measure by one year, and using the current year's remuneration.

Shaw (2011) used bivariate regression analysis to determine the co-efficient of determination between CEO remuneration components (fixed pay, STIs, and total remuneration) and four measures of organisational performance. The analysis was then extended to incorporate multiple regression analysis, to determine the most suitable predictors of the dependent variable (CEO remuneration), by using four explanatory variables for organisational performance). The multiple regression was hierarchical in nature, introducing variables in stages. Shaw (2011) used the F-test statistic to determine the level of significance, and secondary statistical analyses to support the primary statistical techniques of bivariate and multiple regression analysis, as well as repeated measures of ANOVA. On two occasions, a paired-sample t-test was required to analyse data by comparing one group under two different conditions. Due to the nature of the data, Shaw used a Wilcoxon signed rank test.

De Wet (2012) researched the relationship between executive remuneration and EVA and MVA of companies by making use of data supplied by McGregor BFA. The sample of the study consisted of companies listed on the JSE, and spanned a five-year period, from 2006 to 2010. De Wet used regression analysis, with total remuneration as the dependent variable, and created nine models, each with a different blend of explanatory variables. The explanatory variables consisted of standardised EVA and MVA, weighted average cost of capital, ROA, and ROE. In addition, the recommended robustness tests of endogeneity, serial correlation, heteroskedasticity, and stationary were carried out.

Ngwenya and Khumalo (2012) investigated the relationship between CEO remuneration and performance of SOEs in South Africa, using data for the period 2009 to 2011. Data was obtained from SOEs that fall directly under DPE (five) and five SOEs that do not fall directly under DPE. Secondary data was acquired from SOE annual reports. Their hypotheses were tested using Pearson Product-Moment Correlation and linear least squares regression analysis. SOE performance was measured through ROA, and CEO remuneration through total remuneration (limited to base salary and cash bonus only).

Nel (2012) investigated the relationship between the financial performance of South African retail and consumer goods companies and the fixed salaries of their CEOs. The study spanned a six-year period, from 2006 to 2011. Nel (2012) performed a simple linear regression analysis to determine the relationship between the dependent variable (guaranteed cost to company) and the explanatory variable (company financial performance). Nel's study utilised the DuPont Model in analysing the relationship. DuPont analysis is an expression that divides ROE into three parts, namely profitability (measured by profit margin), operating efficiency (measured by asset turnover), and financial leverage. Nel performed repeated measures of ANOVA to compare the means of various groups and the explained and unexplained variances. The F-ratio was used to describe the level of significance.

In their study, Scholtz and Smit (2012) explored the link between executive remuneration and company performance in South African companies listed on the

AltX. Data of 58 companies were obtained from McGregor BFA for the period 2003 to 2010. These authors performed a regression analysis, using executive remuneration as the dependent variable. The explanatory variables in Scholtz and Smits' study were turnover, EBITDA, total assets, and share price.

Bradley (2013) grouped companies into industries, which made it possible to make meaningful comparisons between sectors. Bradley (2013) used multivariate analysis to identify the independent variables that influenced the dependent variable, with the CEO remuneration variables initially assumed to be the independent variables. Data regarding CEO remuneration was obtained from the Profile's Stock Exchange Handbook for five years, from 2006 to 2010. Bradley (2013), furthermore, applied six econometric models to analyse the data, to determine the variables that may affect the relationship between CEO remuneration and company performance. Durbin-Watson (DW) statistics was applied to test for autocorrelation of the disturbances. The Breusch-Pagan Godfrey test was also used, to test for homoscedasticity of the disturbances against the alternative heteroskedasticity. Bradley also conducted the Kolmogorov-Smirnov test on residuals, to test for normality of the disturbances.

In the quantitative, archival study of Modau (2013), the purpose was to determine the link between executive remuneration and organisational financial performance for the period 2008 to 2012. The primary data source was McGregor BFA. In cases where the research data were not available on the McGregor BFA database, financial statements of the organisations were used. The dependent variables in Modau's study were fixed pay and STIs. The independent variables were company performance measures, namely market capitalisation, EPS, ROE, EVA, and MVA. The main statistical techniques used by Modau were multiple correlation analysis, bivariate regression analysis, multiple regression analysis, and stepwise regression analysis. Modau also tested for multicollinearity.

Resnick (2013) conducted a quantitative study to establish the relationship between executive remuneration and company financial performance, using the 20 largest companies listed on the JSE. Secondary data were collected for a three-year period, from 2008 to 2010. Resnick (2013) conducted descriptive statistical analysis to

describe the data set, and employed the Pearson correlation method to establish a relationship between salary payouts, board structures, and performance indicators (revenue, share price, NP, and net assets).

Xu (2013) investigated the relationship between CEO remuneration and company performance for the weak economic period of 2008 to 2012. Company performance was examined in terms of simultaneous and lagged accounting performance and stock market performance. Xu retrieved the data from Standard & Poor's Compustat ExecuComp database for the Standard & Poor's 1500 Index firms. The empirical study adopted a quantitative test of pay–performance sensitivity to investigate the relationship between CEO remuneration and company performance. Ordinary least square regressions were applied in the empirical analysis.

The purpose of the study by Motala and Fourie (2014) was to identify whether the proportion of total executive remuneration granted in the form of share-based payments had an impact on company performance for 18 companies listed on the JSE. The study spanned a six-year period, from 2008 to 2013, using data collected from annual reports. The dependent variable for this study was company performance measures, and the independent variable was share-based executive remuneration. A comprehensive regression analysis was employed in analysing the data. Motala and Fourie (2014) employed additional variables in the regression analysis as explanatory variables, namely natural log of total assets, percentage of total remuneration as share-based awards, and percentage ownership of ordinary shares by executive directors.

Theku (2014) sourced information from McGregor BFA, and used information contained in the organisations' financial statements, directors' reports, and JSE performance archives. The purpose of his study was to gain a better understanding of the relationship between executive remuneration and the performance of the South African mining industry. The study was conducted for the period 2009 to 2013. The statistical analysis techniques used in Theku's (2014) study included analysis of variance and multivariate regression. The Kruskal-Wallis test was used for comparison between the years for each of the variables, due to the smaller group sizes and high number of outliers. The Shapiro-Wilk test was also used to test for normality. The

Bonferroni adjustment was performed to minimise the probability of biased results. Other statistical techniques performed included Pearson's product-moment correlation, multicollinearity tests, and the DW and Cochrane-Orcutt methods.

Deysel and Kruger (2015) conducted a quantitative and qualitative study over a seven-year period in the South African banking sector. The purpose of the study was to determine whether there was a long-term correlation between CEO remuneration and company performance. Data were sourced from annual reports. The SPSS statistical program was used to perform a correlation analysis of CEO remuneration and each of the independent variables. The researchers also considered certain variables affecting the data during the analysis and interpretation, namely endogenous and exogenous factors.

For the purpose of the present research, the researcher followed a quantitative approach over a nine-year period, from 2006 to 2014. The researcher sourced data from audited annual financial statements in the annual reports of the SOEs under study. The SPSS statistical program was used for the descriptive analysis, while EViews, a software package for econometric analysis, was used to run multiple regression models on pooled datasets. The statistical analysis techniques used in this study were Spearman's rank order correlation coefficient test and multiple regression analysis. The researcher used three *CEO remuneration* components as the dependent variables, namely *Fixed pay*, *STIs*, and *Total remuneration*. The independent variables for the study comprised accounting measures of *Company performance* (*Turnover*, *OP*, *NP*, *ROE*, *ROCE*, *LR*, *SR*, *IFWE*, and *AO*), *CEO demographic variables*, and *Company size*. This allowed for a robust enquiry into the relationship between CEO remuneration and company performance for Schedule 2 SOEs.

4.3 RESEARCH OBJECTIVES

The main research objective was to investigate whether there is a relationship between the remuneration of CEOs and the performance of South African Schedule 2 SOEs.

The results will facilitate a deeper understanding of the relationship between CEOs remuneration and company financial performance. Specific objectives following from the main research objective include:

- To determine whether there was a relationship between CEO remuneration and SOEs performance for the period 2006 to 2014;
- To determine whether the relationship between CEO remuneration and SOEs' performance has changed in the period 2006 to 2014;
- To investigate the relationship between CEO remuneration and SOEs' performance in the period before and during the financial crisis of 2008 (2006 to 2010), and afterwards (2011 to 2014);
- To determine whether the demographic variables age, tenure, gender, race, and education influence CEOs' remuneration in South African SOEs; and
- To determine whether there is a relationship between CEO remuneration and company size.

4.3.1 Research questions

The research questions originated from the challenges that were outlined in the literature review. The literature indicates that, despite the large body of knowledge on the topic having emanated from developed economies, there is limited understanding of the relationship between CEO remuneration and company performance in South African SOEs. The research questions provided the direction in investigating this relationship.

Furthermore, given the poor performance of some SOEs with highly remunerated executives, there is a question whether CEOs in South African SOEs deserve the high levels of remuneration they receive. Given this research problem, the primary research question that needed to be addressed was:

Is there a relationship between CEOs' remuneration and the performance of South African Schedule 2 SOEs?

The study was guided by the following research questions and sub-questions:

Research Question 1:

Is there a relationship between CEOs' remuneration and the performance of South African SOEs for the period 2006 to 2014?

Sub-question 1.1: Is there a relationship between CEOs' fixed pay and SOEs' performance?

Sub-question 1.2: Is there a relationship between CEOs' short-term incentives and SOEs' performance?

Sub-question 1.3: Is there a relationship between CEO's total remuneration and SOEs' performance?

Research Question 2:

Did the relationship between CEO remuneration and SOEs' performance strengthen over the period 2006 to 2014?

Sub-question 2.1: Did the relationship between CEO's fixed pay and SOEs' performance strengthen over the period 2006 to 2014?

Sub-question 2.2: Did the relationship between CEOs' short-term incentives and SOEs' performance strengthen over the period 2006 to 2014?

Sub-question 2.3: Did the relationship between CEOs' total remuneration and SOEs' performance strengthen over the period 2006 to 2014?

Research Question 3:

What is the nature of the relationship between CEO remuneration and the performance of Schedule 2 SOEs before and during the global financial crisis (2006 to 2010) and afterwards (2011 to 2014)?

Sub-question 3.1: What is the nature of the relationship between CEOs' fixed pay and SOEs' performance for the periods 2006 to 2010 and 2011 to 2014?

Sub-question 3.2: What is the nature of the relationship between CEOs' short-term incentives and SOEs' performance for the periods 2006 to 2010 and 2011 to 2014?

Sub-question 3.2: What is the nature of the relationship between CEOs' total remuneration and SOEs' performance for the periods 2006 to 2010 and 2011 to 2014?

Research Question 4:

Is CEO remuneration in South African SOEs affected by the variables age, education, tenure, and gender?

Sub-question 4.1: What is the effect of the CEO variables age, tenure, gender, race, and education on CEO's fixed pay?

Sub-question 4.2: What is the effect of the CEO variables age, tenure, gender, race, and education on CEO's short-term incentives?

Sub-question 4.3: What is the effect of the CEO variables age, tenure, gender, race, and education of the have on CEOs' total remuneration?

Research Question 5:

Is there a relationship between CEO remuneration and the size of South African SOEs?

Sub-question 5.1: Is there a relationship between the CEOs' fixed pay and the size of the SOEs?

Sub-question 5.2: Is there a relationship between the CEOs' short-term incentives and the size of the SOEs?

Sub-question 5.3: Is there a relationship between the CEOs' total remuneration and the size of the SOEs?

4.4 RESEARCH METHODOLOGY

Because executive remuneration is not an exact science, studies using comparable material and sources will not necessarily reveal the same results (Okasmaa 2009). The present researcher believes that it is difficult to generalise findings regarding executive remuneration, because company performance involves much more than mere financial performance. Paying skilled executives high salaries does not guarantee the success of the organisation. This is why the present study did not intend to find answers applicable to any company. Corporate structure, the environment, and national culture are all reasons for caution when studying executive remuneration. Past and present trends can, however, serve as indicators for the future.

The research approach adopted is important factor in the rationality of a research study (Cresswell & Clark 2007). In a discipline that is often considered more an art than a science, due to the influence of human behaviour in complex situations, academic contributions can bring the study of executive remuneration closer to a science by utilising scientific research methodologies and processes (Ulrich 2010).

A scientific research approach was applied in the present study, as the researcher employed various analytical tools and techniques. Scientific research is characterised by the following (Cooper & Schindler 2006):

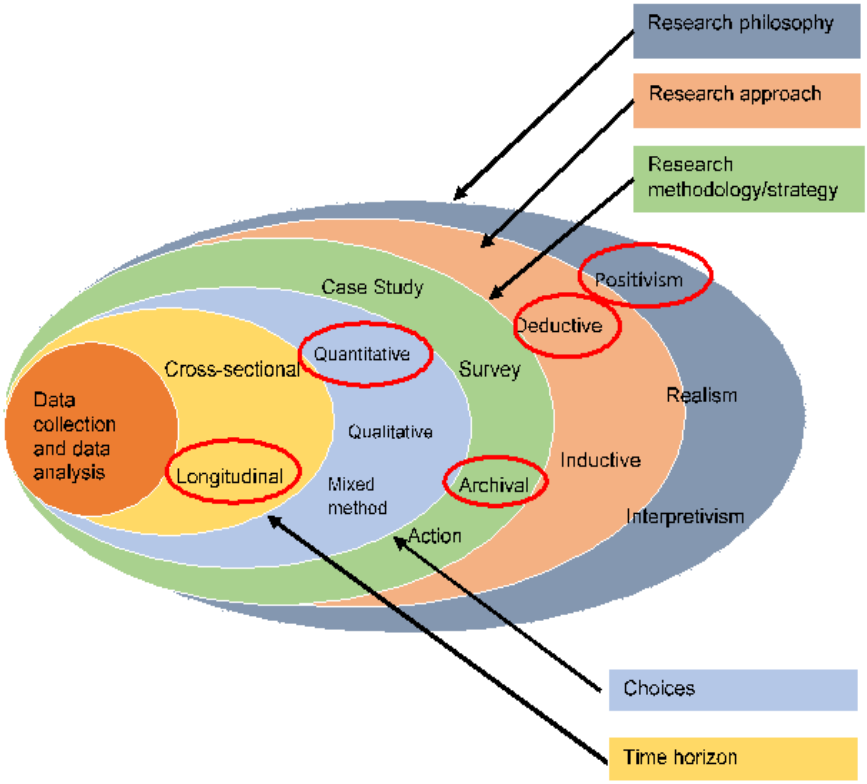
- a clearly defined research purpose;
- a detailed research process, (explained in the research proposal);
- a well-planned research design;
- clearly stated research limitations;
- adequate data analysis that exhibits relevance and significance;
- appropriate methods of data analysis;
- unambiguous presentation of research findings; and
- justifiable conclusions that are supported by the research data.

Saunders, Lewis, and Thornhill (2012) recommend that the research process be designed in the way one would peel off the layers of an onion, and that each layer

represents a particular phase before the data collection process can begin (Ulrich 2010). This approach is illustrated in Figure12. The research philosophy, research approach, research strategies, time horizons, and the data-collection method form the different layers of the onion, representing each component of the research process. The process involves peeling each layer one at a time to reach the centre, which is the main question the research aims to answer.

As illustrated in Figure 12, the first layer relates to the selection of a research philosophy. The second is the research approach that follows from the philosophy. The third layer is the research strategy. The fourth layer refers to the time horizon for the research, and the fifth layer relates to the data-collection methods.

Figure 12 The research approach



Source: Adapted from Saunders, Lewis, & Thornhill (2012)

The red circles in the research process illustrated in Figure 12 indicate how the present study was conducted. The relationship between various quantifiable variables was investigated, thus, the chosen philosophy was positivistic. The research approach was

deductive, as the research was based on earlier literature. The research methodology was, in essence, exploratory and archival in nature, while the time horizon was longitudinal. Data collection for this study was performed using a literature analysis and a desktop study for extracting the data from the annual reports of the SOEs under study. The methodology was quantitative. The research process and the reasons for selecting the above options for this study are discussed in detail below.

4.1.1 Research methodology and design

As the process illustrated in Figure 12 suggests, it was important to first develop a research philosophy, approach, and strategy, before the process of data collection, analysis, and interpretation could commence. The researcher followed the process suggested by Saunders *et al*. (2012), discussed hereunder.

4.1.1.1 Research philosophy

Saunders and Thornhill (2007) define a research philosophy as the establishment of the research background, research knowledge, and its nature. The research philosophy directs the way in which the research will be conducted and how knowledge will be developed (Ulrich 2010). Saunders and Thornhill (2007) identify three different philosophical approaches: positivism, realism, and interpretivism.

A positivist philosophy usually demands observable social realities that can be replicated through a highly structured methodology (Ulrich 2010). Statistical analysis of quantitative data is usually required in this process (Gill & Johnson 1997). For the purpose of the present study, the positivist philosophy was considered appropriate, due to the quantitative nature of the study.

4.1.1.2 Research paradigm

A research paradigm can be characterised as either deductive or inductive. With a deductive approach, the researcher develops and tests theory and hypotheses. The inductive approach calls for the collection of data, followed by the development of theory from the data analysis (Saunders *et al.* 2012). Saunders *et al.* (2012) suggest that the deductive approach is often best suited to a positivist research philosophy. The present study is characterised by the use of a deductive approach, because

financial data were used to answer the research questions. The research started with the theory that there is a positive relationship between CEO remuneration and company performance. This theory was then tested, using financial data to provide answers to the research questions.

4.1.1.3 Research strategy

This study was a desktop study, archival in nature, where the researcher gathered secondary data from annual reports. This *ex-post facto* approach focuses on reporting the characteristics of variables, rather than playing any role in manipulating them (Blumberg *et al.* 2008). Considering the fact that the researcher collected information from public companies' annual reports that had been subjected to financial audits, the data were regarded as accurate and credible. The data were longitudinal in nature, as the data were collected and analysed repeatedly over an extended period (2006 to 2014) (Blumberg *et al*. 2008).

Panel data allows the researcher to analyse cross-sectional and time series information at the same time. This has a number of advantages. More data points can be used. N (cross-sectional units) and T (time series units) allow the researcher to make use of a panel of N*T data points, which increases the number of degrees of freedom. This means that information can be analysed longitudinally (Blair 2014). However, there are also potential challenges in using a panel data set. It can be difficult to ensure that all data are collected using the same methodology, as some cross-sectional units may report in a different way to others (Blair 2014).

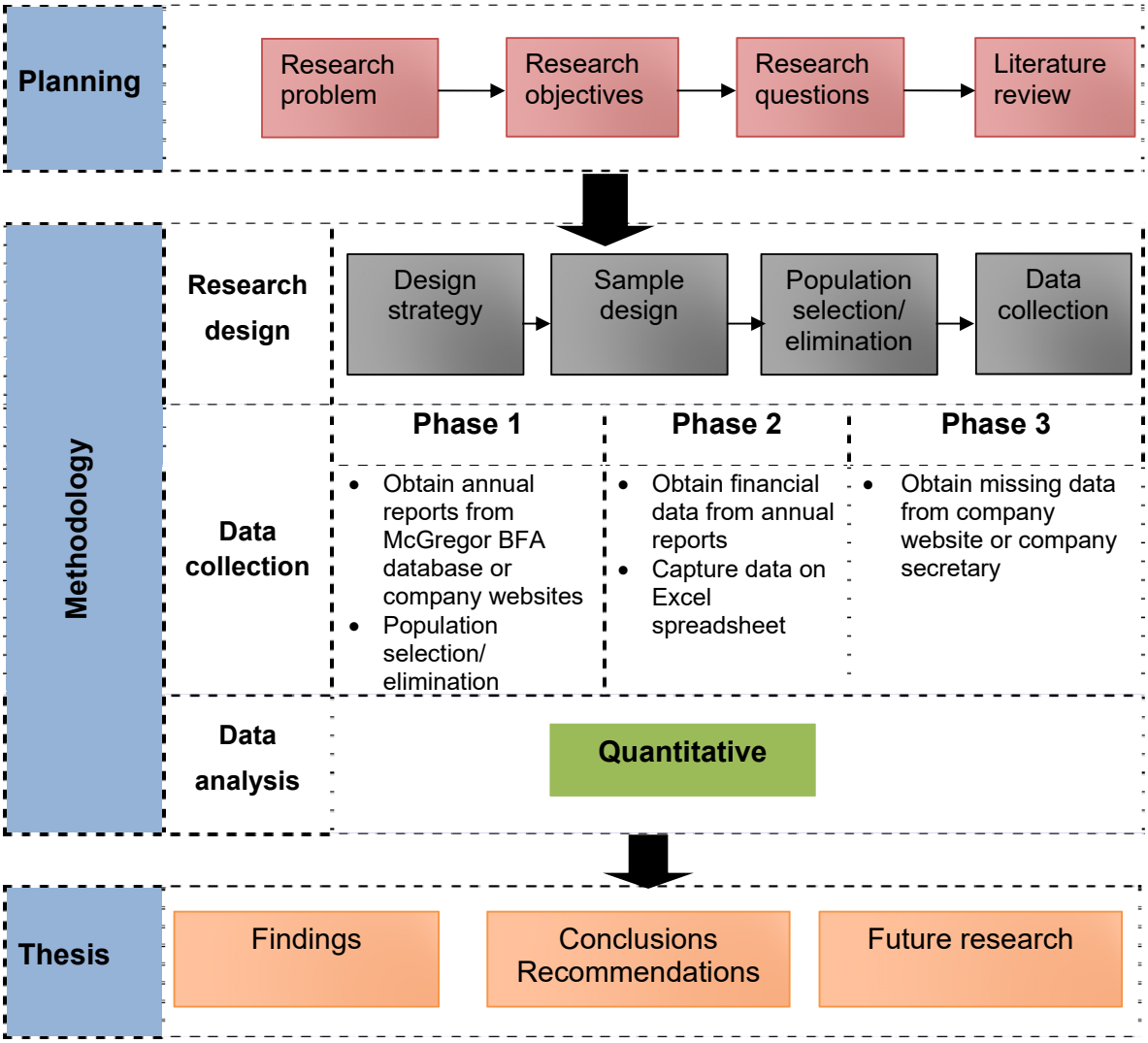
4.1.1.4 Research method

The present study followed a quantitative methodology. The purpose of quantitative research is to identify relationships among two or more variables and, based on the results, confirm or challenge existing theories or practices (Leedy & Ormrod 2015). Quantitative research expresses the relationship between variables using descriptive and inferential statistics. This enables the researcher to describe the magnitude of observed values, trends, and relationships, as well as the probability that they occurred by chance (Morlino 2008).

4.1.1.5 Research process

The research process followed in the present study is summarised and illustrated in Figure 13. In an attempt to ensure reliability, every effort was made to describe the research process in such a way that a replication thereof will produce a reliable conclusion (Oberholzer 2014). The planning phase of the study included identifying and formulating the research problem, the research objectives, and the research questions. The research objectives were formulated based on the literature review that had been performed.

Figure 13 Research process



Source: Adapted from Ulrich (2010)

After formulating the research objectives, the research methodology was developed. This, firstly, involved the design of a research strategy, which included the type, purpose, period, scope, and background of the study. Secondly, a sample frame and sample were determined from the research population. The next step was to determine the data-collection process.

The present study followed a multi-phased data collection process. In the first phase, the researcher obtained all the annual reports, followed by population selection or elimination (as illustrated in Figure 14). In the second phase, all the financial data for the SOEs and their CEOs were collected from the annual reports and captured in an Excel spreadsheet. In the final data-collection phase, the researcher personally contacted the company secretaries of the Schedule 2 SOEs, to obtain information about their CEOs regarding education and age (if the data were not available in the annual report). The researcher followed a quantitative research approach and performed appropriate statistical analyses. Finally, the researcher drafted the thesis.

4.5 TARGET POPULATION

A target population is the entire group of individuals or objects to which researchers wish to generalise the conclusions derived from their research. Bloomberg (2008) defines a population as the total collection of elements about which the study seeks to make suggestions. The population of the present study was SOEs in South Africa. These SOEs are listed in the PFMA. At the time of this study, there were 87 SOEs in existence, divided into Schedule 1, 2, and 3 public entities, with government as the main shareholder. Table 8 provides a definition for each of the different schedules of SOEs (PFMA 1999).

Table 8 Definition of Schedule 1, 2, and 3 State-owned Entities

State-owned entity type	Definition
Schedule 1	A constitutional institution that does not carry out a business activity according to ordinary business principles so as to provide goods or services
Schedule 2	A government business enterprise that has been given managerial autonomy to carry on a business activity according to ordinary business principles, in order to provide goods or services
Schedule 3	A government business enterprise that carries out a business activity according to ordinary business principles, in order to provide goods or services, but has limited managerial autonomy

Source: Adapted from PFMA (1999)

The target population for the present study was Schedule 2 SOEs. Using the definition of the PFMA, all SOEs that were not Schedule 2 public entities were eliminated, and a population was then defined. A total of 21 SOEs were identified as Schedule 2 SOEs, and were therefore included in the study. Table 9 provides a list of the Schedule 2 SOEs.

Table 9 Schedule 2 Public Entities as at 30 April 2015

Number	Public entity	Ministerial portfolio
1	South African Broadcasting Corporation Limited	Communications
2	Armaments Corporations of South Africa Limited	Defence and Military Veterans
3	CEF (Pty) Ltd	Energy
4	South African Nuclear Energy Corporation Limited	
5	Development Bank of Southern Africa	Finance
6	Land and Agricultural Development Bank of South Africa	
7	South African Airways Limited	
8	Alexkor Limited	Public Enterprises
9	Broadband Infraco Limited	
10	DENEL (Pty) Ltd	
11	ESKOM	
12	South African Express (Proprietary) Limited	
13	South African Forestry Company Limited	

14	Transnet Limited	
15	Independent Development Trust	Public Works
16	South African Post Office Limited	Telecommunications and Postal Services
17	Telkom SA Limited	
18	Air Traffic and Navigation Services Company Limited	Transport
19	Airports Company of South Africa Limited	
20	Trans-Caledon Tunnel Authority	Water and Sanitation
21	Industrial Development Corporation of South Africa Limited	Economic Development

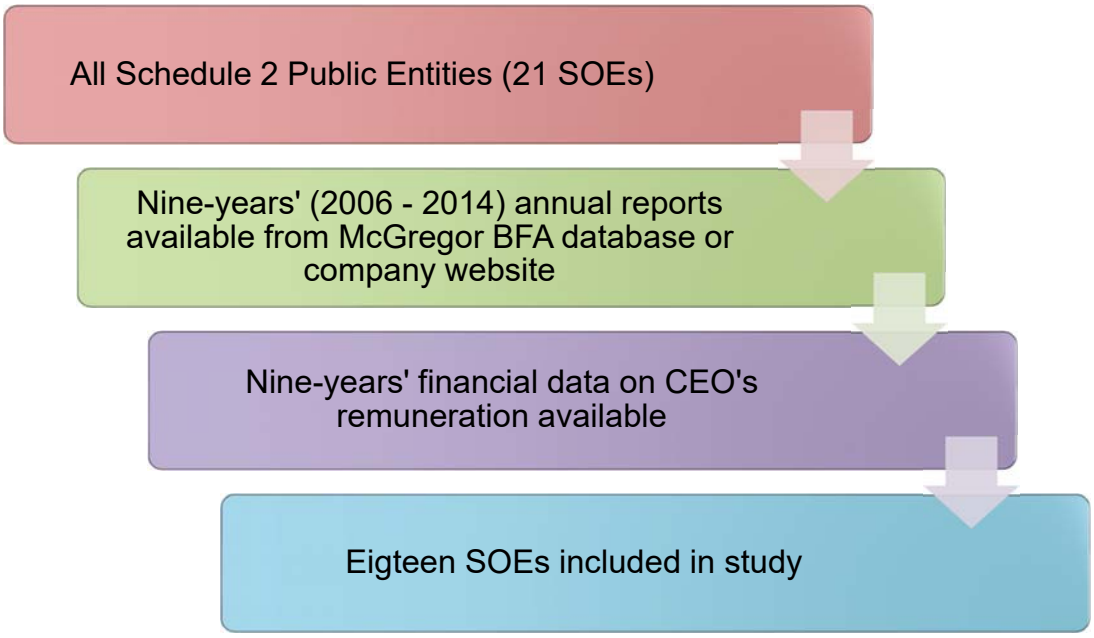
Source: Adapted from National Treasury (2015; 2017)

The researcher did not make use of sampling, due to the small target population. All 21 Schedule 2 SOEs were therefore included in this study. Such a small target population is uncharacteristic of quantitative samples; they are normally large. As can be seen in Table 9, the 21 SOEs engage in a number of different business activities in pursuit of government's objectives.

In order for government to meet its objectives and monitoring SOEs' financial performance, each SOE is required to provide certain information in its annual financial report. The requirements regarding this information are prescribed in the PFMA and Treasury's regulations. The information required includes, amongst others, the remuneration of the CEO, which information was collected for the purposes of this study.

A Schedule 2 SOE was included in the study only if two criteria were met. Firstly, the annual reports had to be available on either the McGregor BFA database or the company website. Secondly, the researcher only considered SOEs could show a nine-year financial history, which had to include the CEO's remuneration. Figure 14 illustrates the population-selection and -elimination process applied in this study.

Figure 14 Population-selection/-elimination process



There were two reasons for setting these criteria. Firstly, as is evident from previous studies (Core *et al*. 1999, Chhaochharia & Grinstein 2009; Shaw 2011; Ntim *et al.* 2013), the criteria ensured that the conditions for a balanced panel analysis would be satisfied. Secondly, the researcher was of the opinion that the examination of nine years' data with time-series properties may be useful in providing a long-term view of the perceived link between executive remuneration and company performance.

After implementing the selection criteria for inclusion of Schedule 2 SOEs, as illustrated in Figure 14, 18 of the 21 Schedule 2 SOEs were included in this study. Based on the elimination process depicted above, the researcher excluded the following SOEs from the study:

Table 10 SOEs not included in the study

SOE	Reason for non-inclusion
Broadband Infraco Limited	Only came into operation in 2007
South African Express (Proprietary) Limited	Only 5 years' annual reports were available/accessible
Independent Development Trust	

The SOEs eliminated from the study do not dominate key strategic sectors of the South African economy. They could therefore be regarded as 'smaller' role players in the South African SOE environment. The present researcher was therefore of the opinion that the exclusion of their data would not have a significant impact on the outcomes of the study, although it may limit the number of observations.

4.6 RESEARCH COMPONENTS

This section provides a discussion on the components that were used in this research. As mentioned earlier, researchers use different measures to measure company performance and CEO remuneration. Prior studies on executive pay and company performance have become more complicated over time as the number and variety of variables included in the models increase (Zhou *et al.* 2011).

The present researcher thoroughly considered the variables used to answer the research questions. There were three groups of components used in this study: *CEO remuneration*, *Company performance*, and *CEO demographic variables*.

4.6.1 Dependent variables

For the purpose of the present study, the researcher used three components of *CEO remuneration*, namely *Fixed pay*, *STIs* (variable pay/bonuses), and *Total remuneration* (fixed pay, STIs, and employee benefits, — the sum of the other types of cash payments, employers' contributions to medical aid, group life, and pension/provident funds).

$$CEO\ remuneration = Fixed\ pay, Short-term\ incentives, Total\ remuneration$$

$$CEO\ Fixed\ pay = Salary\ (Basic\ salary\ +\ Benefits)$$

$$CEO\ short-term\ incentives = Bonus/Variable\ pay$$

$$CEO\ total\ remuneration = Fixed\ pay + STIs + Employee\ benefits$$

As a rule, severance packages were not included; only the remuneration paid out during the active career of the CEOs was taken into account (Grahan & Högfeldt 2010). However, as indicated in the limitations, there were cases where the severance

payment was included in the CEO's fixed pay, and the annual report made no clear distinction between the fixed pay and the severance payment. The employer's contribution to the pension fund and medical aid fund were included, as these formed part of the total benefits of the CEOs.

4.6.2 Independent variables

For the purpose of this study, the researcher used three groups of independent variables. The first group was the SOEs' company performance measures, and the second was the CEOs' demographic variables, and the third group was company size. Year of company performance was also added, because of the structure of the panel data.

4.6.2.1 Company performance measures

Researchers have measured company performance in different ways, with some using accounting measures (Abowd 1990; Al-Matari *et al.* 2014), and others using financial and other subjective performance measures. According to Swatdikun (2013), all performance measures are, in some way, flawed. In an attempt to reduce the effect of these flaws on establishing the relationship between CEO remuneration and company performance, the present research used accounting measures. Blair (2014) posits that the two main measures of performance in South Africa are accounting-based and market-based. The present researcher used primarily accounting-based measures, because there were no market-based measures relevant to this study.

The use of multiple measures of performance ensures that the results obtained are robust and remain invariant (Gabay 2005). Using several performance measures should provide better conclusions than using a single measure (Brown & Caylor 2006). Based on this, the present study used the following financial performance measures:

(a) Turnover

Turnover is the money generated by a company through its business activities during a specific period. A company needs to collect revenue to justify the fixed and variable expenses related to operating a business. In simplest terms, zero or low revenue leads to an unprofitable business and negative financial results (Kokemuller 2014). Previous

researchers who used turnover/revenue as a measure of company performance were: Jeppson *et al.* (2009), Otieno (2011), Nel (2012), Scholtz and Smit (2012), Theku (2014), and Bussin and Nel (2015).

$$Turnover = Revenue$$

(b) Operating profit

Also termed *operating income*, operating profit/(loss) is the profit/(loss) from a company's regular primary business operations, also known as earnings before interest and tax (EBIT) or operating income. This displays the relationship between revenue earned from customers and expenses incurred in producing this revenue. Operating income is used to assess the cost-effectiveness of a company's basic or core business operations, and excludes other types of revenue and expenses (Williams, Haka, Bettner, & Carcello 2006).

$$Operating\ profit = Income = Gross\ profit = Profit\ before\ tax$$

(c) Net profit/(loss)

Several equity investors believe that NP (also termed *net income*) is the most important figure in a company's financial statements. This amount usually represents the overall increase (or decrease) in owners' equity from all profit-directed activities during the period. This measurement offers an indication of management's proficiency in controlling expenses and retaining a realistic share of its revenue as profit (Williams *et al*. 2006).

NP is one of the most closely followed numbers in finance, and it plays a large role in, for example, financial statement analysis. Shareholders look closely at NP, because it is the primary source of remuneration of shareholders of the company (by means of dividends and share buybacks). If a company cannot make enough profit to sufficiently remunerate owners, the value of the shares will drop. Krugel and Kruger (2006) used this measure in their research.

$$Net\ profit/(loss) = Profit/(loss)\ after\ tax$$

(d) Liquidity ratio

LR refers to a company's ability to pay its short-term liabilities with its current assets (Williams *et al*. 2006). The LR is also known as the *current ratio*. The LR is a projected indication of a company's ability to service its current obligations, which is important for the survival of any business. The higher the current ratio is, the more liquid the company appears to be (Williams *et al*. 2006). In general, companies' aim to maintain a current ratio of at least 1. This is to make sure that the value of their current assets cover at least the amount of their short-term obligations (Gallo 2015). A current ratio greater than 1 provides added protection against unexpected eventualities that may occur in the short term. For example, a LR of 1.8: 1 means that the company's current assets are 1.8 times the value of as its current liabilities (Williams *et al*. 2006).

$$\frac{Current\ assets}{Current\ liabilities}$$

(e) Solvency Ratio

The SR, also referred to as the *debt ratio,* is the ratio between the total liabilities of a business and its total assets. It is a measure of solvency and of creditors' long-term risk (Williams *et al.* 2006). The smaller the portion of total assets financed by creditors is, the smaller the risk will be that the business may become unable to pay its debt. From creditors' point of view, the lower the SR is, the safer their position is (Williams *et al.* 2006). A SR ranges from zero to 1. Lower values of a SR are satisfactory, and a higher value indicates that a higher portion of the company's assets are claimed by its creditors. This, by implication, means higher risk, as the business could find it challenging to obtain loans for new projects.

$$\frac{Total\ assets}{Total\ liabilities}$$

(f) Return on Capital Employed

ROCE is a financial ratio that measures a company's profitability and the effectiveness with which its capital is employed. ROCE is particularly useful for comparing the performance of companies in capital-intensive sectors such as utilities and telecoms. The reason for this is that, unlike ROE, which only reflects profitability related to a company's common equity, ROCE also takes into account debt and other liabilities.

This offers a better indication of the financial performance of companies with major debt. A higher ROCE value is indicative of the company generating higher earnings per rand of capital employed. ROCE is the most important profitability ratio to investors, and is typically seen as the bottom-line measure of company performance (Peavler 2014).

$$\frac{Operating\ profit\ (income)}{Capital\ employed}$$

(g) Return on Equity

ROE is often used as a measure of how well a company is performing. ROE is a ratio that measures an organisation's efficiency in generating profit for each unit of shareholder equity. ROE measures an organisation's profitability by showing how much profit an organisation generates with the money shareholders have invested (Modau 2013). This is important, because the financial improvements of the company are directly related to how well it is being managed by the CEO (Resnick 2013). The higher the value of the ROE is, the higher the efficiency in generating income from new investments is (Ismail, Yabai, & Hahn 2014). ROE is "most meaningful when evaluating publicly owned companies" (Siciliano 2003: 11). It is a commonly used performance measure, both in evaluating management performance and in determining executive remuneration (Pandya & Rao 1998).

Previous researchers who used ROE as a measure of company performance were: Andersson and Andersson (2006), Shaw and Zhang (2010), Bradley (2011), Shaw (2011), Sigler (2011), De Wet (2012), Nel (2012), Van Blerck (2012), Deysel (2013), Modau (2013), Motala and Fourie (2014), and Theku (2014).

$$\frac{Net\ profit\ after\ tax}{Total\ equity}$$

(h) Audit opinion

An AO is a certification of financial statements prepared by an independent auditor. The auditor's opinion will set out the scope of the audit and the auditor's opinion of the procedures and records used to generate the financial statements. It will also set out

the auditor's opinion of whether the financial statements are an accurate representation of the company's financial position. An AO is therefore a good indication of how responsibly the company applies accounting and financial controls.

- **An unqualified opinion** is often called a *clean opinion*. It is an audit report that is released when an auditor has concluded that each of the financial records provided by the business is free of any misrepresentations. An unqualified opinion shows that the financial records have been maintained in accordance with generally accepted accounting principles (GAAP). An unqualified opinion is the best report a business can receive (Henderson 2014).

- **A qualified opinion** is released when a company's financial records have not been maintained in accordance with GAAP, but no misrepresentations have been identified (Henderson 2014). If the financial statements contain material misstatements in specific amounts, or there is sufficient evidence for the Auditor-General of South Africa (AGSA) that specific amounts included in the financial statement are not materially misstated, a company will receive a qualified audit opinion (AGSA 2014).

- **An adverse opinion** is the worst type of financial report that can be issued. This indicates that the company's financial records do not conform to GAAP standards. Therefore, the financial records provided by the business contain gross misrepresentations. Although this may occur bona fide, it is often an indication of fraud (Henderson 2014).

- **An emphasis of matter** paragraph is included in the auditor's report, which refers to a matter properly presented or disclosed in the financial statements that, in the auditor's judgment, is of such importance that it is fundamental to users' understanding of the financial statements (International Standards on Auditing 706 2009).

- **Disclaimer of opinion** is where an auditor is unable to complete an accurate audit report. This may due to, for example, the company having provided

insufficient evidence in the form of documentation on which to base an AO. The lack of sufficient evidence could relate to specific amounts or a significant portion of the information contained in the financial statements (AGSA 2014).

No previous studies included the AO as a company performance measure. *AO* was tested using dummy variables, due to its categorical nature, with *AO 3* (*Adverse*) being the reference category. The following categories were used:

$$0 = Clean/unqualified\ \ audit\ opinion$$

$$1 = Qualified\ audit\ opinion$$

$$2 = Emphasis\ of\ matter$$

$$3 = Adverse/going\ concern$$

$$4 = Disclaimer$$

(i) Irregular, fruitless, and wasteful expenditure

IFWE is expenditure made in vain, which could have been avoided, had reasonable care been exercised. According to the PFMA, SOEs need to report, on an annual basis, any IFWE. The PFMA furthermore requires entities to include notes in their annual financial statements of particulars of any material losses and any IFWEs, including any significant unauthorised expenditure that occurred during the financial year, and whether this is recoverable. In most part, such expenditure is incurred because of non-compliance with legislation (AGSA 2012). This measure is classified into three categories:

- **Irregular expenditure**, as defined by the PFMA, means expenditure, other than unauthorised expenditure, that is incurred in contravention of, or not in accordance with, any applicable legislation (not just the PFMA) (South African Qualifications Authority 2013).

- **Unauthorised expenditure** is the overspending on an approved budget, spending not in line with the original approved budget item, or expenditure without the appropriate approval (South African Qualifications Authority 2013).

- **Fruitless and wasteful expenditure,** as defined in the PFMA, is expenditure that was made in vain, and could have been avoided, had reasonable care been implemented. Such expenditure may be of an operational or a capital nature (South African Qualifications Authority 2013).

4.6.2.2 CEO demographic variables, company size, and year

The CEO demographic variables (independent variables) were the CEO's age, tenure, gender, race, and education. Previous studies have included CEOs' demographic variables as independent variables (Lilling 2006). The present researcher used *Company size* as an independent variable.

- **CEO's age**

Age reflects the age of the CEO as at December of each year, and was measured in number of years. Age is readily observable, and it was, in most instances, obtained from the annual report. The determination of the age groups were done by studying the frequency tables and roughly divide them according to the cumulative percentage value (closest to a third and two thirds) into 3 groups In the regression models, the actual age of the CEO was included.

$$CEO\ age = Actual\ age\ of\ CEO$$

- **CEO's tenure**

Research by Lin and Lin (2014) suggests that there is a positive relationship between CEO tenure and CEO remuneration. This means that shorter tenure is associated with lower remuneration. Hill and Phan (1991) measured the CEO's tenure in the number of years an individual held the CEO position. Thus, for the purpose of the present study, *Tenure* was regarded as the number of years that the CEO held the position as CEO.

$$CEO\ tenure = Number\ of\ years\ as\ CEO\ until\ departure$$

- **CEO's education**

The literature postulates that the higher a CEOs education level is, the higher his or her expertise will be, therefore justifying higher pay (Finkelstein 1992). Banghøj *et al*.

(2010) found that level of education is one of the important sources of variation in executive remuneration. In the present study's regression model, *Education* was included as a dummy variable, with *Undergraduate degree* used as a reference category. *Education* was categorised as follows:

$$0 = Secondary\ education$$

$$1 = Undergradaute\ degree$$

$$2 = Honours\ degree$$

$$3 = Master's\ degree$$

$$4 = Doctorate$$

- **CEO's gender**

Although previous studies suggest that diversity has a positive impact on the bottom line of an organisation, the link between gender diversity and company performance has not been firmly established (Catalyst 2004). In this regard, Khan and Vieito (2013: 56) note that the relationship between gender and company performance is a "relatively new area of inquiry." In the present study, *Gender* consisted of the following categories:

$$1 = Male$$

$$2 = Female$$

- **CEO's race**

Research on South African CEOs' remuneration and the race of the CEOs seems to be limited. The majority of such studies were conducted in the USA (Barret 2014). In the present study's regression model, *Race* was included as a dummy variable, with *White* used as a reference category. For the purpose of this study, the researcher categorised *Race* as follows:

$$1 = Black\ African$$

$$2 = Coloured$$

$$3 = Indian$$

$$4 = White$$

- **Company size**

Gayle and Miller (2009) indicate that the design of CEO remuneration could largely be explained by the company's size. Zhou (2000) postulates that CEO remuneration increases with the growth of the company. Company size was included in the present study, due to the differences in the size of the companies in the population. In order to determine the size of the SOEs, this study used the DPE's organisation size grid categorisation, as shown in Table 11, as a guideline. Based on the organisation size grid (Table 11), the DPE classifies SOEs according to the following categories:

- Size 1 – 6 is a small SOE (It should be noted that none of the SOEs fell within this category) (*Company size 1* in this study);
- Size 7 – 9 is a medium SOE (*Company size 2* in this study);
- Size 10 – 11 is a large SOE (*Company size 3* in this study); and
- Size 13 – 16 is a very large SOE (*Company size 4* in this study).

Organisation size was included as a dummy variable in the regression analysis. Since none of the SOEs fell into the *Company size 1*, as shown in Table 11, *Company size 2* was used as a reference category. The researcher applied the following categories:

$$1 = Small\ company$$

$$2 = Medium\ company$$

$$3 = Large\ company$$

$$4 = Very\ large\ sompany$$

- **Year** of company performance was also added, because of the structure of the panel data. In a prosperous economic environment, companies tend to raise executive remuneration annually, with or without any increase in the company's performance. During an economic recession, however, companies tend to decrease their executives' remuneration, even though the executives might not have been responsible for the poor financial performance of the company (Swatdikun 2013).

Table 11 Organisation Size Grid

Revenue / Assets	R0 – R0.45m	R0.45 – R0.98m	R0.98 – R2.11m	R2.11m – R4.77m	R4.77 – R10.4m	R10.4 – R22.8m	R22.8 – R50.2m	R50.2 – R110.6m	R110.6 – R242.3m	R242.3 – R534.9m	R534.9m – R1.22b	R1.22 – R2.54b	R2.54 – R5.62b	R5.62 – R12.5b	R12.5 – R27.6b	>R27.6b
R0 – R1.22m	1	2	2													
R1.22 - R2.8m	1	2	3	3												
R2.8 - R6.0m	2	2	3	4	4											
R6.0 – R13.5m		3	3	4	5	5										
R13.5 – R29.7M			4	4	5	6	6									
R29.7 – R65.3m				5	5	6	7	7								
R65.3 – R143.5m					6	6	7	8	8							
R143.5 – R315.8m						7	7	8	9	9						
R315.8 – R694.7m							8	8	9	10	10					
R694.7m – R1.55bn								9	9	10	11	11				
R1.55 – R3.33b									10	10	11	12	12			
R3.33 – R7.42bn										11	11	12	13	13		
R7.24 – R16.3bn											12	12	13	14	14	
R16.3 – R35.78bn												13	13	14	15	15
R35.78 – R78.8bn													14	14	15	16
>R78.8bn														15	15	16

Source: DPE 2007 (State-owned Enterprises Remuneration Guidelines: 7)

4.7 DATA COLLECTION

This section will discuss the collection of data for this study.

4.7.1 Sources and nature of data

As previously stated, the researcher collected secondary data for this research from the annual reports of the SOEs under study. The compilation of annual reports by SOEs is required by law, and these are available to the public (Otieno 2011). Research conducted by Odainkey and Simpson (2013) revealed that SOEs' annual reports are useful tools in ensuring accountability. Other authors also used data from annual reports, for example Otieno (2011), Shaw (2011), Modau (2013), Resnick (2013), Theku (2014), and Deysel and Kruger (2015). The audited financial statements mainly provide quantitative data, while the rest of the information is primarily available from narratives in the annual reports (e.g. CEO age, tenure, gender, race, and education).

These annual reports contain annual financial statements of the SOEs, where information regarding company performance measures and executive management information can be found. For the purpose of the present study, the information obtained included CEO remuneration and financial performance measures of each SOE. Data on executive remuneration also provided a breakdown of the CEOs' fixed pay, total remuneration, and, in some instances, variable pay.

Certain authors are of the opinion that the annual report is the only comprehensive financial statement accessible to the public. They are further of the opinion that annual reports are fundamental mechanisms whereby the public sector is held accountable for their use of public resources (Rutherford 2000; Coy, Fisher, & Gordon 2001). However, other authors argue that the annual report is a complex report, that the quality of reporting is poor, and that it is delivered mainly to internal stakeholders (Steccolini 2004; Mack & Ryan 2007). Nevertheless, the annual report remains an important instrument for performance monitoring and evaluation of SOEs (Odainkey & Simpson 2013).

Using secondary data holds a number of advantages. Secondary data are publicly available, eliminating the problem of non-response or lack of access to data, which is normally associated with primary data. Secondary data are also readily available and inexpensive to acquire (Otieno 2011). A further advantage is that the data are higher in quality than primary data, because these have been prepared to a standard pattern, rather than for a particular objective (Swatdikun 2013). Collecting secondary data also has fewer resource requirements than primary data (Swatdikun 2013).

4.7.2 Data collection and data collection process

As previously mentioned, the primary source for the data used for this study was the audited financial statements in the published annual reports of the SOEs. The annual reports were obtained from the McGregor BFA database. In cases where the data required for the research were not available in the McGregor BFA database, annual reports of the SOEs were obtained from the SOEs' websites.

For each of the Schedule 2 SOEs, the researcher obtained the CEO's name, age (as at 31 December for each year under study), tenure (as at 31 March for each year under study), gender, race and education. The following *CEO remuneration* data were collected for the years 2006 to 2014:

- fixed pay;
- STIs — annual performance bonus/variable pay; and
- total remuneration — cash salary, STIs, and other allowances/benefits. In the present study, it further included all unusual payments that occurred during a year, such as sign-on payments, gratuitous payments, loss-of-office payments, and any other unusual payments (Shaw 2011).

The following company financial data were collected for the years 2006 to 2014: turnover, OP, LR, SR, ROCE, ROE, AO, and IRWE. The researcher selected the 2006 to 2014 period with the aim of establishing whether the global financial crisis influenced the relationship between CEOs' remuneration and the SOEs' performance.

In a few cases, despite further research and communication with the company, the researcher was unable to obtain certain CEOs' demographic data. The statistical analysis treated this data as missing, as the researcher yielded to the fact that the quantity of missing data should be minimal enough not to compromise the results. The information required to answer the research question and to provide descriptive information was collected, as described below.

Each annual report contained the financial statements of the respective SOE, as well as the income statement (statement of comprehensive income) and the balance sheet (statement of financial position). The bulk of the annual reports also contained demographic information on the SOEs' executive management in terms of their age, education, date of appointment, and, if applicable, termination of employment.

The researcher obtained the details of the CEOs' remuneration and IFWE in the notes of the financial statements. CEO remuneration details were available under the heading "Disclosure of remuneration in terms of Section 55 of the PFMA and Treasury Regulation 28.1.1." The researcher obtained the data relating to the AO from the section in the annual reports that contain the independent auditors' report.

The researcher obtained the rand amount for turnover, OP, and NP from the income statement for each of the 18 SOEs for the nine-year period. These figures were readily available in the statement of comprehensive income. There were therefore no missing entries.

From the balance sheet, the rand amount of current assets, total assets, total equity (capital and reserves), and current liabilities were obtained for each of the SOEs for the nine-year period. Again, this information was explicitly available in the balance sheet. There were therefore no missing data. Because the company performance measures used in this study were not explicitly available from the annual reports, the researcher applied the financial formula discussed in Section 4.6.2.

In terms of the definition of a CEO, it is standard practice in SOEs to refer to the head of the SOE as the CEO. In some SOEs, the CEO is referred to as the Managing Director or Chief Executive. This was assumed to mean the same as *CEO* for the purposes of the study, as they were reported to be the SOE.

The remuneration of the CEO included the sum of the CEO's fixed pay, STIs, and other remuneration, as declared in the notes of the annual financial statements. King III and the PFMA require the declaration of the CEOs' remuneration (Groenewald 2012; PwC 2016b). The fixed-salary component is the core component of the CEOs remuneration for all SOEs. The STI component of CEO remuneration was not available for all the SOEs, and, in some cases, the STI component was termed "bonus" or "incentive." The last component of remuneration was "other," which included remuneration that was not salary or bonus. Items included under "other" remuneration for some of the SOEs included pension, medical aid allowance, travel allowance, fringe benefits, Unemployment Insurance Fund contributions, and, in some cases, share-based payments. The researcher employed "other" remuneration simply for calculating total remuneration.

The narrative of the annual report provided demographic information of the CEO. This included the CEO's age, tenure, education, and gender. In some of the SOEs' annual reports, not all of this demographic information was available or complete. In such cases, the researcher contacted the company secretary of the SOE to obtain the relevant information.

Having obtained the key variables, a data table (data matrix) was set up in a Microsoft Excel document, which contained all the information collected for the nine years under study for each of the 18 SOEs. The purpose was to capture the data and to calculate the formulas/ratios as set out in Section 4.6.2.1. Actual figures from the annual reports are displayed in either thousands or millions in the data matrix. It is important to note that the researcher did not adjust the numbers for inflation, although the total remuneration was adjusted for tenure (1% per year). The data matrix was subsequently imported into SPSS and EViews 8.0 for analysis, and

arranged to represent pooled panel data. An example of the data matrix is presented in Table 12, below.

Table 12 Data matrix used for this study

Company	DBSA (R'000)								
	2014	2013	2012	2011	2010	2009	2008	2007	2006
CEO Package									
CEO salary									
CEO total benefits									
Employers contribution to medical aid, GL, Prof fund									
Other Allowances/payments and benefits									
CEO bonus/STI									
Total CEO Remuneration									
CEO Characteristics									
Race									
Gender									
Age (in years)									
Qualification									
Tenure (in years)									
Company Performance Measures									
Turnover									
Operating profit/loss									
Net Profit for year									
Profit/loss for the year (Before tax)									
Liquidity ratios									
Current assets									
Current liabilities									
Solvency ratios									
Total assets									
Total liabilities									
ROCE									
Operating profit/loss									
Total assets									
Current liabilities									
ROE									
Net profit (after tax)									
Total Equity									
Audit opinion									
Total irregular, fruitless and wasteful expenditure									
Irregular expenditure									
Fruitless and wasteful expenditure									
Material loss due to criminal conduct									

The data set consisted of a panel of 162 observations. Dougherty (2002) claims that research making use of time series data (data collected over a period) implies that one variable is tested several times within the same time interval. Panel data is a mix of cross-sectional (data collected at one point in time) and time series data (Dougherty 2002). Panel data is a special type of pooled data, in which the same cross-sectional unit is surveyed over a period, and has a space- as well as a time dimension (Gujarati & Porter 2009). In the present study, panel data were used, since the total remuneration of the CEOs of all 18 SOEs was tested against several variables during the years 2006 to 2014, and the data therefore became multidimensional (Resnick 2013).

Because of incomplete CEO demographic data for some years, the researcher adopted an unbalanced data panel approach with appropriate regression estimates, using EViews 8 software. For company performance measures, the researcher followed a balanced panel data approach.

4.7.3 Treatment of data

In order for this study to be replicable, it is important to note how some of the data were considered. The remuneration- and financial data were reflected as at 31 March of each year.

In calculating *Fixed pay* and *Total remuneration*, CEO turnover was taken into account. CEO incumbents changed during some financial years. CEO remuneration values may therefore not have been in respect of a full financial year (1 April to 31 March) or of their functions as CEO. Of the 162 observations, there were 36 cases where CEO incumbents changed. To compensate for these changes, the researcher chose the CEO who had been in the position for the longest time during the financial year, if he or she had received remuneration. In order to (a) not exclude these observations from the sample, and because the calculations involved were straightforward, and (b) for remuneration data not to be misrepresented, the researcher annualised the remuneration, to reflect a full year's remuneration. There were 39 cases where the researcher annualised *CEO remuneration* (*Fixed pay* and benefits). Baptista (2010) applied the same methodology.

In six cases, the researcher used the remuneration of the acting CEOs. In these cases, the researcher employed the unadjusted *CEO remuneration* data. There were three cases where termination payments were included in the fixed pay portion of the package. In order to not distort the remuneration data, the researcher used the fixed pay of the previous year and a percentage package increase calculated for that year. In each of these three cases, the researcher applied the expected salary increase, provided in the relevant SOEs' annual reports. This method does not generate a significant misrepresentation of the *CEO remuneration* data, because the remuneration values calculated were in line with the rest of the *CEO remuneration* data collected for the SOEs.

In one case where a CEO incumbent changed during a financial year, the remuneration and demographic details of the CEO with the longer service were reflected. Where the current and previous CEOs tenure was equal during a financial year, both CEOs' remuneration was reflected. However, in both these cases, the researcher used the demographic details of the current/latest CEO in the data matrix. This might have had an influence on the relationship between *CEO remuneration* and *Tenure*.

4.8 DATA ANALYSIS

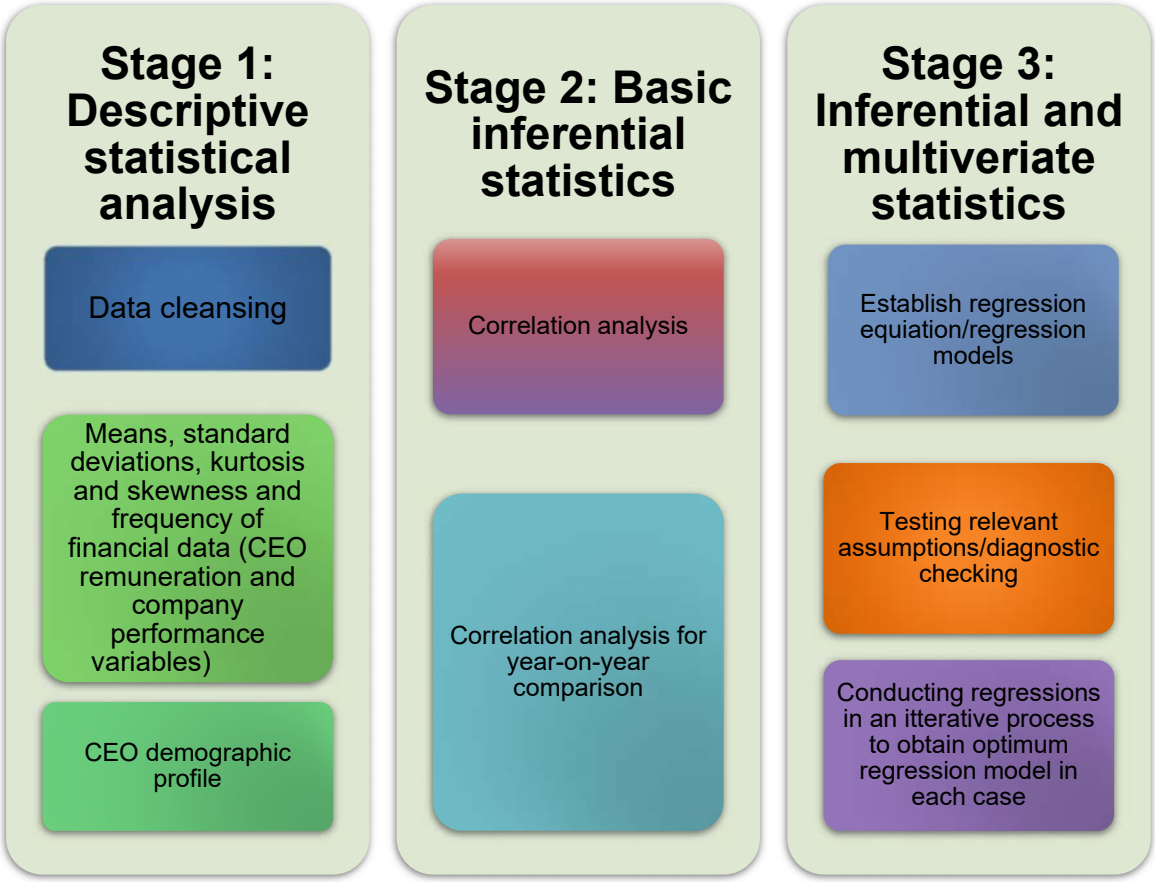
The researcher used the Statistical Package for the Social Science programme (SPSS Version 22) for the descriptive analysis of the data. EViews (Version 8), a software package for econometric analysis, forecasting, and statistics (Haley 2010), was used to run multiple regression models on the pooled dataset comprising a cross-section of 18 SOEs for a nine-year period. In his article, Polakow (2015) raised concerns regarding the use of standard statistical techniques in financial analysis that ignore autocorrelation and stationarity. Using EViews (econometric modelling) in the analysis of the present study addressed Polakow's (2015: 53) concern regarding autocorrelation and stationarity being ignored by some analysts, which contributes to "broad market inefficiency."

Data analysis can be viewed as the procedure whereby data are separated into important parts, to find answers to research questions (De Vos, Strydom, Fouché, & Delport 2011). According to Trochim (2006), data analysis typically involves the following three main stages:

(1) cleaning and organising the data for analysis;
(2) describing the data; and
(3) testing the research hypotheses and models.

In the final stage, Stage 3, the present researcher used correlational and inferential (multivariate) statistics to examine thesis statements and research questions. The conclusions from the inferential statistics were used to make deductions from the data to more general situations, and descriptive data were used only to explain patterns in the data. The data analysis for this study comprised three major stages, as depicted in Figure 15:

Figure 15 Data analysis process



4.8.1 Stage 1: Descriptive statistical analysis

Descriptive statistics is a method of statistical analysis of numerical data, discrete or continuous, that provides information on centring, spread, and, where applicable, normality of the data. The outcomes of this type of analysis can be presented in tabular or graphic layout. The descriptive statistics applied in this study for the dependent and independent variables were frequency tables, means, standard deviations, minimum values, maximum values, skewness, and kurtosis (De Vos *et al*. 2011). This stage consisted of the following steps:

(1) data cleaning;
(2) determining the means and standard deviations, kurtosis, and skewness of the continuous variables;

(3) Determining the demographic profile of the CEOs of the SOEs for the period 2006 to 2014.

4.8.1.1 Step 1: Data cleaning, accuracy of data, and missing values

The data cleaning and organising step consisted of scrutinising the data, checking the data for accuracy, capturing the data into the software program, transforming the data, and developing and documenting a database structure that incorporates the different measures.

In an attempt to ensure accuracy of the data, screening was conducted for possible incorrect capturing. Frequency statistics of each of the variables were requested (by way of the SPSS 22 frequency procedure). These were examined in terms of minimum and maximum values, along with means, standard deviations (SDs), skewness, and kurtosis. Further, the assistance of a chartered accountant was obtained to (a) assist with the interpretation of the financial statements and to (b) verify the correctness of the financial measures.

There were missing values for some of the demographic information of CEOs, namely age and education. For the purpose of this study, the missing values were not replaced, because no assumptions could be made regarding these missing values, and these were treated as such.

4.8.1.2 Step 2: Means, SDs, kurtosis, skewness, and frequency tables

Descriptive statistics was conducted for the dependent and independent continuous variables. The mean, median, SD, minimum value, maximum value, skewness, and kurtosis were investigated, to determine the distribution, as well as possible outliers/wrong values for the nine-year period. From this, several uncertainties were identified, which were verified by the researcher and corrected where needed. All variables related to these changes were also adjusted.

SD measures the extent to which a group of scores vary from the mean (Christensen 2001). A small SD shows that the scores cluster closely around the mean, whereas a large SD shows that the scores vary significantly from the mean

(Christensen 2001). In economics, SD gives, for example, an indication of a fund's volatility. A higher dispensation (indicated by a high SD) shows that the value of the asset has fluctuated over a wide range.

Skewness and kurtosis were also determined in this study. Skewness is a measure of symmetry (or lack thereof). Distribution of data is regarded as symmetrical if it looks the same on each side of a central point. An example of possible skewed data concerns income, an economic variable that is uneven in most societies, with the majority of the income being held by a few at the top (Gujarati & Porter 2009). Kurtosis measures whether data are either peaked or flat with regard to the normal distribution.

One of the main reasons why researchers construct frequency tables is to describe the distribution of scores of a variable (Tredoux & Durrheim 2002). Because *CEO demographic variables*, *AO*, and *Company performance* were categorical, the results were presented by means of frequency tables.

4.8.1.3 Step 3: CEO demographic profile

The demographic profiles of the CEOs were described in terms of *Age*, *Tenure*, *Gender*, *Race*, and *Education*.

4.8.1.4 Step 4: Test for assumptions/diagnosis checking

In most situations, the objective of research is to make valid interpretations from a dataset. The following assumptions were made in this study:

(1) testing for normality;
(2) stationary process/unit root test;
(3) autocorrelation/serial correlation;
(4) outliers;
(5) heteroskedasticity; and
(6) multicollinearity.

These assumptions provided reliability/validity of the tests, called the 'robustness test' by Barton, Hansen, and Pownall (2010). Yan, De, Ting, Bing, and Pin (2015) refer to it as 'diagnosis checking,' which is necessary to avoid econometric problems.

4.8.1.4.1 Testing for normality

A normal distribution is important, as it is a fundamental assumption of many statistical tests (Razali & Wah 2011). Deviations from normality make statistical tests inaccurate. Under the normality assumption, the Central Limit Theorem (CLT) of statistics suggests that the normal distribution of the sum is achieved as the number of independent variables increases (Gujarati & Porter 2009). The normality test is conducted to determine whether the error terms abide by the normal distribution (Yan *et al*. 2015). Parametric statistical analysis assumes a normal distribution of the data. If the assumption of normality is violated, interpretation and extrapolation might not be reliable or valid. It is thus essential to test for this assumption before proceeding with any appropriate statistical procedure (Razali & Wah 2011).

CEO remuneration and *Company performance* components were tested for normality, using the Shapiro-Wilk test. The Shapiro-Wilk test is more appropriate for small sample sizes (< 50), and is based on the correlation between the data and the corresponding normal scores (Laerd Statistics 2015a). This test assesses the normality of the distribution of the data. A non-significant result (significance value of more than 0.05) indicates normality.

4.8.1.4.2 Stationary process/Unit root test

The present researcher conducted a unit root test to test the stationarity in the data. A time series is stationary if its mean and variance do not vary systematically over time (Gujarati & Porter 2009). Because trending data are very common in economics, non-stationary data are frequently encountered (Hill, Griffiths, & Judge 1997). Non-stationary data in a time series occur when there is not a constant mean μ, no constant variance σ_t^2, or either of these properties. It can originate from, inter alia, the unit root (Ssekuma 2011).

A test of stationarity (or non-stationarity) that has become popular in recent years is the unit root test (Gujarati & Porter 2009). Unit root tests provide a basis for assessing whether a time series is non-stationary and integrated in a particular order (Hill *et al.* 1997). For the purpose of the present study, the researcher used the augmented Dickey-Fuller (ADF) test to test the stationarity of each variable used in the regression.

The ADF test adds lagged values of the dependent variable ΔY_t. The ADF test consists of estimating the following regression (Gujarati & Porter 2009):

$$\Delta \gamma_t = \beta_1 + \beta_2 t + \delta \gamma_{t-1} + \sum_{i=1}^{m} \alpha \Delta \gamma_{t-i} + \varepsilon_t$$

where ε_t is a pure white noise error term, and where $\Delta\gamma_{t-1} = (\gamma_{t-1} - \gamma_{t-2})$, $\Delta\gamma_{t-2} = (\gamma_{t-2} - \gamma_{t-3})$, etcetera. The number of lagged difference terms to include is often determined empirically. The idea is to include enough terms so that the error term indicated above is serially uncorrelated, so that an unbiased estimate of δ, the coefficient of lagged γ_{t-1} (Gujarati & Porter 2009), can be obtained. According to Gujarati and Porter (2009: 756), the null hypothesis of the ADF test is:

H_0:$\delta = 0$ (i.e. there is a unit root, or the time series is non-stationary)

versus the alternative hypothesis of

H_1:$\delta < 0$ (i.e. the time series is stationary).

4.8.1.4.3 <u>Autocorrelation/Serial correlation</u>

Autocorrelation is the error term for whichever observation is associated with the error term of the other observation (Gujarati & Porter 2009). Autocorrelation (serial correlation) may exist in a regression model when the order of the observation in the data is relevant or important. With time-series, panel-, and longitudinal data, autocorrelation is a concern. When a regression model is estimated using data of this nature, the value of the error in one period may be related to the value of the error in another period (autocorrelation), which results in a violation of a classical

linear regression model assumption (Pedace 2013). The possibility of autocorrelation should always be accommodated when time-series data are involved (Hill *et al*. 1997). Autocorrelation complicates the application of statistical tests by reducing the number of independent observations. It can further complicate the identification of significant covariance or correlation between time series (Notes_3 GEOS 2015).

Normally, autocorrelation is presumed to be characterised by a first-order auto-regression, indicated by AR(1). Generally, an autoregressive process arises any time the value available in one period can be modelled as a function of values of the same variables in previous periods. In the case of autocorrelation, the random variable displaying this characteristic is the error term (Pedace 2013). Given the statistical definition of the term, autoregressive processes and models all naturally suppose that past values have some effect on future values (About Education 2015).

In the present research, the DW test was used to detect autocorrelation of an AR(1) process. Although the DW is an old test (Hill *et al*. 1997), it is the most celebrated test for detecting serial correlation (Gujarati & Porter 2009). The DW test is, furthermore, easy to compute, reliable in small samples, and has optimal power properties against first-order serial dependence (Dufour & Dagenais 1985). The DW test begins by assuming that, if autocorrelation is present, it can be described by an AR(1) process. As a result, the DW is used to test if the autoregressive process is such that the value of the error in period t depends on its value in period $t-1$. The value produced by the DW test is called a d-statistic (Pedace 2013), which is defined as:

$$d = \frac{\sum_{t=2}^{t=n}(u_t - u_{t-1})2}{\sum_{t=1}^{t=n} u_t^2}.$$

In the numerator of the d statistic, the number of observations is *n* – 1, because one observation is lost in taking successive differences (Gujarati & Porter 2009). The following are classifications of the DW test results (Campbell 2014):

<2 = Positive serial correlation
2 = No serial correlation
>2 = Negative serial correlation

As an approximate rule, serial correlations corresponding to DW outside the range of 1.5 to 2.5 are large enough to have a noticeable effect on the inference techniques.

4.8.1.4.4 Outliers

An outlier is an observation that is considerably different (either very small or very large) with respect to the observations in the sample (Gujarati & Porter 2009). In informal language, outliers are extremely high or extremely low values in a data set, which can confound the statistics (Tukey 1977). One reason for the significance of identifying the presence of outliers is that they have a potentially powerful effect on the estimates of the parameters of a model that is being fitted to the data. The inclusion or exclusion of an outlier, particularly if the sample size is small, can significantly change the results of regression analysis (Gujarati & Porter 2009). This could lead to flawed conclusions and inaccurate predictions (Caroni, Karioti, & Pierrakou (no date)).

To ensure that all possible extreme values were investigated, the *Explore* function in SPSS was used, which highlighted the five lowest and five highest values for each variable (see Annexure B). These were investigated in conjunction with the other variables for a specific company, so as not to blindly delete values that were important. This procedure highlighted several other anomalies, which were investigated and corrected.

CEO remuneration of one of the CEOs for the year 2008, with a value of R19 028 580, was excluded from further analysis, due to the effect of this value on the modelling results.

4.8.2.3.5 Homoscedasticity

Homoscedasticity, also called *equal spread* or *equal variance*, implies that the *Y* populations corresponding to the *X* values have the same variance. Simply put, the variation around the regression line is the same across the *X* values; it increases or decreases as *X* varies (Gujarati & Porter 2009).The assumption of homoscedasticity for ungrouped data implies that the inconsistency of scores for one continuous variable is roughly the same for all values of another variable (Ferreira 2014). This assumption is strongly related to the assumption of normality, since the assumption of multivariate normality is met; the correlations between the variables are homoscedastic (Tabachnick & Fidell 2013).

4.8.2.3.6 Multicollinearity

Multicollinearity occurs when two explanatory variables are highly correlated (r = 0.90) (Westhoff 2013).The presence of such high correlations indicates that variables do not hold any additional information needed in the analysis (Tabachnick & Fidell 2013). The present researcher made use of the tolerance and variance inflation factor (VIF) information in the regression models to test for the presence of multicollinearity. Kemalbay and Korkmazoglu (2011) and Shui Yan, Wei De, Li Ting and Siao Pin (2015) applied the same method in testing for multicollinearity.

The VIF shows how estimator variance is inflated when there is a multicollinearity problem (Gujarati & Porter 2009). As a rule of thumb, if the VIF of a variable is greater than 10, multicollinearity is present. However, if the VIF test result is equal to 1, there is no multicollinearity problem in the model (Gujarati & Porter 2009). No multicollinearity problems were identified in the present research.

4.8.2 Stage 2: Basic inferential analysis

Non-parametric correlation statistics was used to test the direction (positive or negative) and strength of the relationship between *CEO remuneration* and *Company performance* variables. Non-parametric correlation statistics were used to test for the *CEO remuneration* variable *STIs* with the other relevant variables, because a third of the sample declared zero bonuses. *AO* (an ordinal variable that can assume the values of 0 to 4) was also analysed by means of correlations.

The researcher used the Spearman rank order correlation coefficient (r_s) to calculate the positive or negative direction and strength of the relationship between variables. In accordance with Albright, Winston, and Zappe (2008), if the correlation (r) equals −1, it suggests a perfect negative relationship, and should the correlation be equal to 1, it depicts a perfect positive relationship between the variables in the correlation. The closer r is to zero, the weaker the relationship between the constructs is (Laerd Statistics 2015b). According to GraphPad Statistics Guide (2015), Spearman's correlation coefficient has the same range as Pearson's product-moment correlation coefficient. The guideline of Albright *et al.* (2008) therefore also applies to Spearman's tests. For the purpose of the present study, the researcher employed a cut-off point of $r \geq 0.30$ (medium effect) at $\rho \leq 0.05$, to determine the practical significance of correlation coefficients (Cohen 1988). The following table shows the expected r results and strengths applied in this study. The accepted ranges for correlations are set out in Table 13, below.

Table 13 Correlation value strengths

r = +0.70 or higher	Very strong positive relationship
r = between +0.40 to +0.69	Strong positive relationship
r = between +0.30 to +0.39	Moderate positive relationship
r = between +0.20 to +0.29	Weak positive relationship
r = between +0.01 to +0.19	No or negligible relationship
r = between -0.01 to -0.19	No or negligible relationship
r = between -0.20 to -0.29	Weak negative relationship
r= between -0.30 to -0.39	Moderate negative relationship
r = between –0.40 to -0.69	Strong negative relationship
r = -0.70 or higher	Very strong negative relationship

Source: Nel (2012: 50)

4.8.3 Stage 3: Inferential and multivariate statistical analysis

Inferential and multivariate statistics were carried out to permit the researcher to make conclusions pertaining to the data. Gujarati and Porter (2009: 15) describe regression analysis as follows: "Regression analysis is concerned with the study of the dependence of one variable, the dependent variable, on one or more other variables, the explanatory variables, with a view to estimating and/or predicting the

(population) mean or average value of the former in terms of the know or fixed (in repeated sampling) values of the latter."

In the current study, multiple regression was performed to determine the proportion of variance that is explained by the independent variables (*Company performance* components and *CEO demographic variables*) and the dependent variables (*CEO remuneration* components). The nature of the data required the application of different econometric models to capture several possible relationships between *CEO remuneration* and *Company performance* (Grunditz & Lindqvist 2003). Barton *et al*. (2010), Farmer *et al.* (2010), and Bradley (2013) also made use of different econometric models.

According to Terre Blanche and Durrheim (2000), multiple regression analysis is one of the most frequently used multivariate methods to study the separate and collective contributions of a number of independent variables towards the variance of the dependent variables. Multiple regression results emphasise two points. First, the R^2 values indicate how well a set of variables explains a dependent variable, and secondly, the regression results measure the direction and size of the effect of each variable on a dependent variable (Neuman 2000).

In the present study, during the process of statistical analysis, regression analyses were performed to identify the *Company performance* variables that were statistically significant predictors of *CEO remuneration* variables, the dependent variables. For the nominal and ordinal variables, *Race*, *Education*, *Company size* and *AO* dummy variables were created. The next section will discuss the regression theory.

4.8.3.1 Regression theory

Pooled analysis combines times series for several cross-sections. Pooled data are characterised by having recurring observations (most often years) on fixed units (companies). This implies that pooled ranges of data combine cross-sectional data on longitudinal units (N) and time periods (T) to produce a data set of *N x T* observations (Červenà 2006). For the purpose of the present study, the typical

range of units of analysis was 18, with each unit observed over a nine-year period (2006 to 2014).

In view of the above explanation, the generic pooled linear regression model estimable by ordinary least squares (OLSs) procedure was formulated as follows (Podestà 2000):

$$Y_t = \beta_1 + \sum_{k=2}^{k} \beta_k \chi_{kit} + e_{it}$$

where:

i = 1,2,…; N refers to a cross-sectional unit;

t = 1,2,…; T refers to a time period; and

k = 1,2,...; K refers to a specific explanatory variable.

Thus, γ_t and χ_{it} refer, in turn, to dependent and independent variables for unit i and time t; e_{it} is a random error, and β_1 and β_k refer, respectively, to the intercept and the slope parameters. Furthermore, one can represent the *NT x NT* variance-covariance matrix of the errors with typical element $E\left(e_{it}\ e_{js}\right)$ by Ω. Estimating this kind of model and some if its variants solves various problems of the traditional methods of comparative research (i.e. time series analysis and cross-sectional analysis). A number of reasons support this, as discussed below.

The first reason involves the 'small N' problem experienced in both time series- and cross-sectional analysis. The limited number of spatial units and the limited number of available date over time led data sets of these two techniques to infringe the basic assumption of standard statistical analysis. Most specifically, the small sample of conventional comparisons shows an imbalance between too many explanatory variables and too few cases. Therefore, within the contest of the small sample, the total number of the potential explanatory variables exceeds the degree of freedom required to model the relationship between the dependent and independent variables. In contrast, due to pooled time series cross-section (TSCS) designs, this restriction can be limited. This is because, within the pooled TSCS research, the cases are "SOE-year" (NT observations) starting from the SOE in year t, then SOE

i in year t+1 through SOE z in the last year of the period under investigation. This allows the researcher to test the influence of a large number of predictors of the level and change in the dependent variable within the framework of multivariate analysis (Schmidt 1997).

The second reason supporting pooled TSCS analysis concerns the likelihood of capturing, not only the difference of what materialises over time or space, but the variation of these dimensions all together. This is because, as an alternative of testing a cross-section model for all companies at one point in time or testing a time series model for one company using time series data, a pooled model is tested for all companies over time (Podestà 2000).

Furthermore, with panel/cross-sectional data, the most commonly estimated models are probably fixed effects and random effects models (Williams 2015). A random effects model is probably the most suitable when there are no omitted variables, or if the omitted variables are uncorrelated with the explanatory variables in the model. If there are omitted variables, and these variables are correlated with the variables in the model, then fixed effects models may provide a means for controlling for omitted variable bias. In a fixed effects model, subjects serve as their own controls. The rationale is that, whatever effects the omitted variables have on the subject at one time, will also have the same effect later. These effects will therefore be constant or 'fixed'. A fixed effects model will not work if subjects do not change over time. There needs to be within-subject variability in the variable if subjects are used as their own controls. Williams (2015), however, cautions that, for this to be true, the omitted variables must have time-variant values with time-invariant effects.

4.8.3.2 Multiple regression

In the present research, the researcher conducted multiple regression analysis. This type of regression analysis examines the dependence of one variable on more than one explanatory variable (Gujarati & Porter 2009). Multiple regression analysis furthermore attempts to determine the individual effect of each explanatory variable (Westhoff 2013).

Multiple regression involves having more than one independent variable in the model. This allows researchers to determine how the many explanatory variables of more sophisticated models influence a single dependent variable. Multiple regression allows researchers to determine the relationship between each independent and dependent variable while controlling for the effects of other independent variables in the model (llvento (no date)).

The approach to determine the optimum regression model is an iterative process, whereby insignificant independent variables are deleted until the explanatory power and the associated F-statistic of the regression do not show an increase and decrease respectively. The regression model in this study was as follows:

$$CEO\ remuneration_t = \alpha + \beta_1\ (T) + \beta_2\ (OP) + \beta_3\ (NP)) + \beta_4\ (L) + \beta_5\ (S) + \beta_6\ (ROCE) + \beta_7\ (ROE) + \beta_8\ (IFWE) + \beta_9\ (AO) + DV\ + \varepsilon_t\ + AR\ (1)$$

where:

- $CEO\ remuneration_t$ = Total CEO remuneration (fixed pay, STIs and total remuneration in rand denomination) paid to the CEOs of the sample SOEs in year t;
- $\beta_i = Respective\ coefficient$;
- $T = Turnover$;
- $NP = Net\ profit$;
- $OP = Operating\ profit$;
- $LR = Liquidity\ ratio$;
- $SR = Solvency\ ratio$;
- $ROCE = Return\ on\ capital\ employed$;
- $ROE = Return\ on\ equity$;
- $IFWE$ = *Irregular, fruitless, and wasteful expenditure;*
- *AO= Audit opinion;*
- $DV =$ *Dummy variable (CEO demographic variables and Company size)*
- $t =$ *the* t^{th} *observation;*
- $\varepsilon =$ *the error term;* and

- $AR(1) = Auto\ correlation.$

The F-statistic is the regression mean square divided by the residual mean square. A statistically significant F-test indicates that the data provide evidence that the best-fitting linear model of the type specified has at least one predictor with a non-zero coefficient (Misinterpreting the Overall F-Statistic in Regression 2014). The Betas (βs), or standardised coefficients, indicate which individual predictors contribute most to explaining the variation in the dependent variable. The t-value (t-statistic) indicates the individual predictor's statistical significance. If a coefficient has a t-value well below -2 or above +2, this normally signifies that the relevant predictor has a statistically significant influence (Shields, O'Donnell, & O'Brien 2003). The R-squared and adjusted R-squared statistics included in all the regression analysis models measure the proportion of variance (fluctuation) of one variable that is predictable or explained by the independent variables included in the model. An assumption may be made that, under normal circumstances, the larger the R-squared is, the stronger the predictive power or the explanatory power of the regression analysis is. Hence, the general findings and conclusion of the regression model can be based on the R-squared and adjusted R-squared values (Kuboya 2014).

4.8.3.3 Econometric model

- *Panel data technique*

Panel data are a combination of cross-sectional and time series data, and provide multiple views on each individual in the sample (Hsiao 2014). Furthermore, panel data are more informative and have more variability, more degrees of freedom, more efficiency, and less co-linearity among variables (Yan *et al*. 2015). Moreover, panel data can be used to investigate and estimate effects that cannot be examined in pure cross-sectional or pure time series data (Gujarati & Porter 2009).

- *Pooled OLS Model*

One of the methods for measuring panel data is pooled OLS by means of the regression model. The pooled OLS regression model assumes that the independent variables are strictly exogenous to the error terms of the model (Gujarati & Porter 2009). In addition, the pooled OLS regression model also assumes that the intercepts and slopes are constant across the observations (Baltagi 2008). For the purpose of the present study, the pooled OLS model was used.

4.9 ETHICAL CONSIDERATIONS

Ethics in research ensure that no harm is caused to any involved party (respondents, interested individuals, subjects in the population, or intellectual property owners) in any form (Collins & Hussey 2009). As further described by Collins and Hussey (2009), ethical considerations relate to informed consent, anonymity, and confidentiality of the information. These issues do not pertain to the present study, as it did not make use of research participants. Moreover, the data extracted from the annual reports were publicly available and open to scrutiny by the public. To ensure ethical standards were adhered to in the present study, the researcher ensured that the data were correctly extracted and included in the data matrix. The researcher performed multiple reviews to ensure that there were no errors in the extraction of the data.

It is important to be careful to collect accurate data, and not to be biased and manipulate data for a specific purpose, especially given the political nature of SOEs (Otieno 2011). Accuracy was ensured by objectivity, scientific investigation, and high standards. As far as the analysis and reporting of the results are concerned, valid and reliable statistical methods were used. All the results were reported and interpreted in the context of the study, and no distortion of data occurred. The results were not extrapolated to other SOEs, and were reported in full.

The researcher believes that the challenge of confidentiality does not exist in this research, because the analysis was based on published annual reports. However,

the researcher took special care to ensure that the language of the research and conclusions are presented in a positive manner, pointing to positive actions. Notwithstanding the above, the researcher obtained ethical clearance from the University of South Africa to proceed with this study and to use secondary data (Ref #:2013_CEMS_022) (Annexure C).

4.10 VALIDITY AND RELIABILITY

Validity and reliability determine whether the outcomes and conclusions of a study can withstand scrutiny by interested experts (Saunders *et al*. 2012). In addition, it is important that a study will produce the same results if it is replicated (Resnick 2013).

Reliability refers to the trustworthiness of the results of a study. The data for the present research were exclusively secondary data obtained from the annual reports of the SOEs under study. Miller (1995) indicates that secondary data are the most suitable for studies on executive remuneration. Secondary sources used by scholars of executive remuneration are considered to provide valid and reliable data (Attaway 2000). Further, as all South African Schedule 2 SOEs are required to disclose certain financial and remuneration information by law and according to GAAP, the validity of this type of secondary data is considered high (Nel 2012; Shaw 2012; Van Blerck 2012; Barret 2014). However, despite the fact that corporate financial results are prepared according to specific guidelines, there is room for interpretation in the application of certain accounting and reporting policies. Accounting practices may therefore differ from SOE to SOE, which could affect the validity of direct comparisons (Barret 2014).

In the present study, financial figures for *CEO remuneration* and *Company performance* were extracted from the annual reports of the SOEs. This was done with the assistance of a chartered accountant. While the SOEs could have manipulate these figures, these were considered reliable, as the published annual reports had been audited by external auditors and prepared in accordance with

rigorous accounting standards. These records could thus be considered reliable (Grahan & Högfeld 2010; Bradley 2013; Resnick 2013).

The most important criterion to keep in mind when conducting quantitative research is that the statistical tests should measure what they aim to measure. Various statistical techniques were employed to determine the relationship between *CEO remuneration* and *Company performance*, and the results (as discussed in the next chapter) clearly show that the tests did enable the researcher to draw conclusions about the relationship.

4.10 POSSIBLE LIMITATIONS OF THE STUDY

The researcher identified the following limitations of the present study:

- The research was limited to the South African Schedule 2 SOEs, and therefore excluded all public entities not classified as Schedule 2 entities. The conclusions may therefore not be generalisable to other sectors without more research.
- The research focused on the remuneration of the CEOs only.
- The accounting standards set by the International Accounting Standards Board may have changed during the period 2006 to 2014. This could have had an influence on the SOEs' reported results and, therefore, an impact on the data analysis of this study.
- The relationship between CEO remuneration and SOE performance might be endogenous.
- In some annual reports, long-term bonuses and termination payments were included in the CEOs' remuneration, with no indication of the exact amount. This could have had an effect on the results of the present study.
- The changes in CEO incumbents in many of the SOEs, could have led to new incentive programmes, new bonus programmes, or different remuneration. This could have influenced the results and resulted in potential outliers. Further, a new CEO could have had an impact on data in a longitudinal study.
- The use of audited financial results does not ensure standardisation of accounting policies. Practices may therefore vary from SOE to SOE. This

could have had a material effect on the results. Another challenge faced by the researcher relating to data collection was the timing differences in the release of SOEs annual reports. The time differences in data collection may have caused slight anomalies in comparisons of annual performance. However, this was not a significant drawback, as all the data for the 18 SOEs' year-end figures were correctly matched.

- The use of profitability as a measure of company performance is subject to criticism, as executives can manipulate profitability indicators (Attaway 2000; Ngwenya & Khumalo 2012); therefore, the use of these measures in the present study could have had an effect on the results.

4.11 CHAPTER SUMMARY

This chapter provided a discussion on the research methodology. The research methodology applied in this study was in line with other research done on the relationship between CEO remuneration and company performance.

The researcher employed a deductive research approach, based on a descriptive quantitative research design. It study was longitudinal, in order to conduct analysis of secondary time series data over the study period (2006 to 2014). The target population of the study was Schedule 2 SOEs, and, due to the small target population, no sampling methodology was applied.

The differing views on executive remuneration and company performance led to the use of the following company performance measures: turnover, OP, NP, ROE, ROCE, LR, SR, AO, and IFWE. The *CEO remuneration* components used in this study were: *Fixed pay*, *STIs*, and *Total remuneration*.

The next chapter will discuss the results and findings of the study. The researcher will address each of the research questions and make recommendations regarding the remuneration of CEOs.

CHAPTER 5: RESEARCH RESULTS

5.1 INTRODUCTION

In this chapter, the objective is to present the results and findings of the analysis done in order to answer the main research question:

Is there a relationship between CEOs' remuneration and the performance of South African Schedule 2 SOEs?

This is followed by a discussion and interpretation of the results and findings in relation to the research questions and objectives.

This chapter presents a broad analysis of the descriptive statistics and the results used to address the research questions. The results were generated using the sample selected for the research, which consisted of 18 Schedule 2 SOEs, for the period 2006 to 2014. To address the research question, the nature and extent of the relationship between *CEO remuneration* and *Company performance* was explored.

The chapter starts with a description of the CEOs' profiles, followed by a discussion on the descriptive statistics for each of the components of *CEO remuneration* and *Company performance* for each of the nine years. The researcher then focuses the discussion on the results of the correlation analysis. Lastly, a discussion on the results of the diagnostic checking for the assumptions of regression models is provided, where after the results of the multiple regression analysis of the effect of *CEO remuneration* on *Company performance* will be explained. The correlation and regression analyses address the research questions and sub-questions. The chapter concludes with a summary of the research results.

5.2 DESCRIPTIVE STATISTICS

In the current study, the target population was South African Schedule 2 SOEs (N = 21). After applying the elimination process indicated in Figure 14, a sample of 18 Schedule 2 SOEs was identified as usable for the purpose of the study (n = 18). With the study period being nine-years, there were 162 (9 x 18) panel observations. All the data required for this study and applicable to this population were obtained from the McGregor BFA database or from the SOEs' websites, in the form of captured records and annual reports. Where the most senior member of the executive management was called the Managing Director or Executive Director, instead of CEO, the remuneration information of these members were used. Of the SOEs in the sample, most had more than one CEO for the period under study, and eight SOEs had acting CEOs during this period.

Because there were many instances of significant differences in the descriptive results between the means and medians for the components of *CEO remuneration* and *Company performance*, the researcher reported the medians. The reason for this is that potential outliers generally do not influence medians (Weiers 2010). In addition, the median gives a better indication of the actual growth pattern (Pohl 2015).

This section starts with a brief description of the demographic profiles of CEOs of the 18 SOEs under study. This is followed by a discussion on the descriptive statistics of each of the components of *CEO remuneration* and of *Company performance* for the 18 SOEs over the nine-year period.

5.2.1 CEO demographic variables

The data analysis provided a demographic profile of the CEOs. Over the nine-year period, there were 52 individuals appointed as CEO across the 18 SOEs. The discussion below will address each of the components of *CEO demographic variable*s. This is followed by a summary of the CEOs' profiles and the results of *CEO remuneration* as the average remuneration of the 52 CEOs over the nine-year period.

5.2.1.1 Age of CEOs

In this research, an average age was calculated for each CEO, which was classified into three age groups: 40.5 – 44.9 years, 45 – 48.5 years, and 48.5 years and older. There was an equal number of CEOs in the age groups 45 – 48.5 and above 48.5 (16 each), i.e. 30.8% respectively. Eleven of the CEOs (21.2%) were aged 40.5 – 44.9 years. According to a Hay Group (2014) news release, the most CEOs globally are aged 50 to 60 years. From the results of the present study, it can be seen that CEOs in South African SOEs are younger than the average age of CEOs in China (50), Australia (53), the UK (52), Malaysia (52), and the USA (56.9)(Romei 2015; Sherman, 2015). The mean age of the CEOs over the nine-year period was 47.63 years (excluding nine missing values).

5.2.1.2 Race composition of CEOs

The majority of CEOs were black African (69.2%), followed by white (19%), Coloured (8%), and Indian (3.8%).

5.2.1.3 Gender of CEOs

There were 42 (80.8%) male CEOs and 10 (19.2%) female CEOs for the 18 SOEs over the nine-year period.

5.2.1.4 Education CEOs

Of the 52 CEOs, the majority, 23 (44.2%), had a Masters' degree, followed by 17 (32.7%) who have a bachelor's degree, nine (17.3%) who had an honours or postgraduate degree, and only three (5.8%) who had a doctorate.

5.2.1.5 Tenure of CEOs

Table 14 shows that the mean of *Tenure* of the CEOs was 2.47 years. This is lower than the average tenure found by Wowak, Hambrick, and Henderson (2011) of 4.48 years, as well as Yan *et al*. (2015), who found a mean tenure of 11.30. The CEOs' tenure might indicate that, within SOEs, CEOs may not have as much power to dictate their remuneration; Ozkan (2011) proposes that CEOs with a longer tenure

have a tendency to prescribe their worth. The minimum average *Tenure* in the present was five months, and the maximum was nine-and-a-half years.

Table 14 Average CEO *Tenure* for the nine-year period

	CEO tenure in years (n=52)
Mean	2.47
Median	1.97
Std. Deviation	2.06
Minimum	0.42
Maximum	9.50

Table 15 provides a summary of CEO demographic variables of the CEOs according to race, gender, age, and education.

Table 15 Summary of Frequency Distribution: Demographic profile of CEOs

		Frequency	**Percent**
Race	**Black African**	**36**	**69.2**
	Coloured	4	8
	Indian	2	3.8
	White	10	19
	Total	52	100.0
Gender	Female	10	19.2
	Male	**42**	**80.8**
	Total	52	100.0
Age	40.5 – 44.9	11	21.2
	45 – 48.5	**16**	**30.8**
	48.5 and older	**16**	**30.8**
	Total	43	17.3
	Missing	9	
Education	Undergraduate degree	17	32.7
	Postgraduate degree	9	17.3
	Master's degree	**23**	**44.2**
	Doctorate	3	5.8
	Total	52	100.0

In summary, the demographic profiles of the CEOs indicate that they were predominantly black African males between the ages of 40.5 and 48.5 years, who held a Master's degree.

5.2.2 *CEO remuneration* components

The *CEO remuneration* components were: *Fixed pay*, *STIs*, and *Total remuneration,* and were the dependent variables for all 18 SOEs under study.

The period of the global financial crisis, which was marked by global economic decline that began in December 2007 and took a sharp downward turn in September 2008, is indicated by grey shading in the figures below, as is the August 2011 stock market fall.

5.2.2.1 Fixed pay

The median of *Fixed pay* increased steadily from R1.67m to R3m from 2006 to 2014. This represented an average year-on-year increase of 8%, and a total increase of 82% over the period. Table 16 summarises *Fixed pay* for the period 2006 to 2014.

Table 16 Descriptive statistics – *Fixed pay*

Year	Mean	SD	Median
2006	1 994 250.19	1 052 027.05	1 679 000.00
2007	2 372 378.39	1 242 189.05	2 062 141.50
2008	2 509 763.41	1 325 793.61	2 044 607.00
2009	2 668 468.03	1 203 410.04	2 470 000.00
2010	2 769 787.70	1 034 832.47	2 550 500.00
2011	3 160 985.56	1 394 699.82	2 808 50000
2012	3 586 606.11	1 243 883.04	3 319 96400
2013	3 184 005.83	1 459 638.89	3 182 000.00
2014	3 523 151.89	1 487 536.39	3 063 420.50

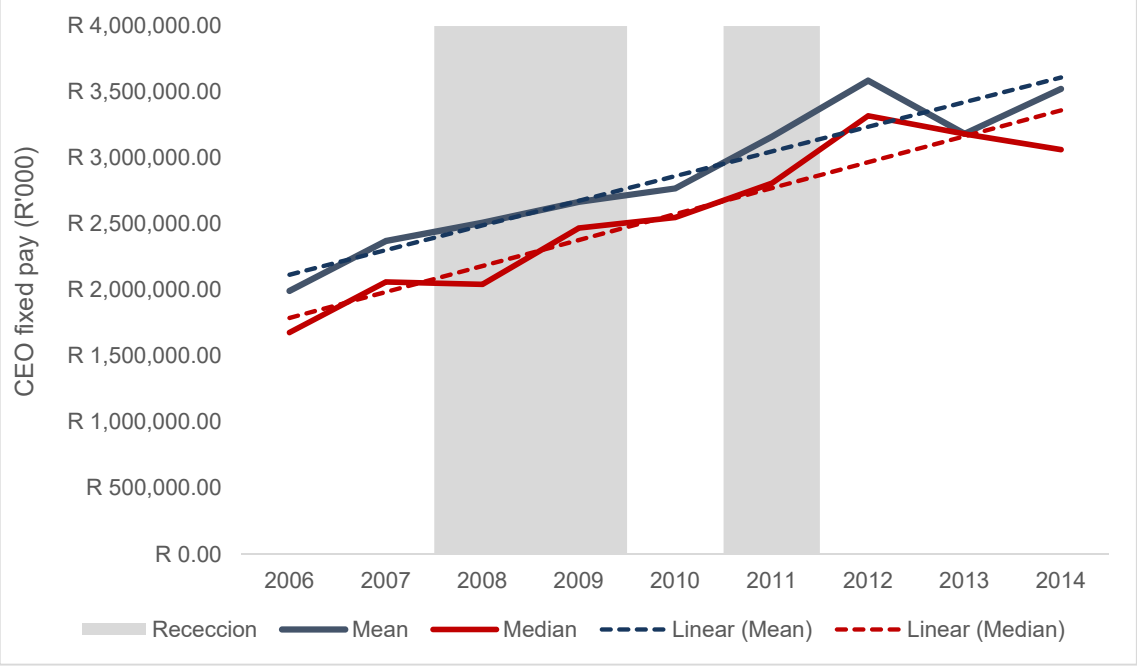
It was expected that *Fixed pay* would continue to grow, regardless of weakening market conditions. Fixed salaries are often determined according to industry market surveys (Murphy 1999); therefore, the proportion of fixed pay in most cases is not

expected decline during periods of poor financial performance (Kuboya 2014). Shaw (2011) posits that it is rare for fixed pay to experience a decline in declining market conditions.

The increase in the median of *Fixed pay* for the 2006 to 2007 financial year was the highest, with a 23% increase. The lowest increase in the median of *Fixed pay* was for the 2009/2010 financial year, at 3%. This could have been due to the fall-out of the global economic slowdown. It is observed that a negative growth in *Fixed pay* was experienced in the following financial years: -0.85% in 2007/2008, with, -4% in the 2012/2013 financial year, -4% in the 2013/2014 financial year. This seems to reflect the trend in some of the SOE's *Company performance* components. In particular, the trend appears to be similar to those found for *OP*, *NP*, and *ROCE*.

Figure 16 illustrates the mean and median for *Fixed pay* tabulated in Table 16. While the researcher did not consider inflation, it is evident from the graph that the increase in the mean and median fluctuated throughout the period of analysis.

Figure 16 *Fixed pay* (2006 – 2014)



It is evident that of the CEOs' *Fixed pay* did not experience the runaway growth claimed in the media. There was a slight increase in the median of *Fixed pay* during

2007, with the highest median of *Fixed pay* being in 2012. This suggests that the August 2011 stock market fall did not have an effect on the CEOs' fixed pay.

5.2.2.2 Short-term incentives (bonuses)

CEOs' STIs have raised criticism in the wake of the financial crisis (Shaw 2011). Table 17 summarises *STIs* for the period 2006 to 2014.

Table 17 *STIs* (2006 to 2014)

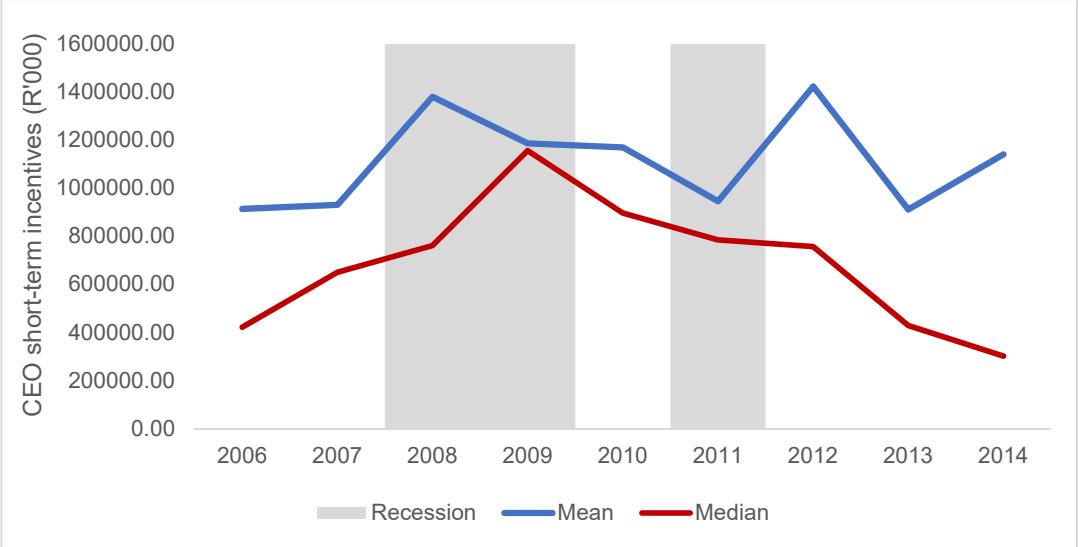
Year	Mean	SD	Median
2006	914 263.33	1 161 731.723	421 762.50
2007	930 669.78	990 919.99	650 000.00
2008	1 380 996.22	1 729 113.55	761 500.00
2009	1 186 322.50	1 224 651.04	1 156 762.50
2010	1 170 384.94	1 208 646.01	896 500.00
2011	945 902.89	995 133.60	784 990.00
2012	1 423 860.56	1 837 371.69	757 238.50
2013	911 290.00	1 028 744.98	428 543.50
2014	1 140 483.67	1 562 708.50	301 450.50

The data show that *STIs* decreased during this period, as reflected in the median value decreasing from R421 762.50 to R301 450.50 over the nine-year period. This represents an average year-on-year decline of 4% and a total decrease of 29% over the period. The increase in the median of *STIs* in the 2006/2007 financial year was the highest, at 54%. The 52% increase in STIs during the 2008/2009 financial year indicates that the effect of the global economic down turn did not have an effect on CEOs being awarded STIs. It could also suggest that the STIs were not based on company performance. A decline was experienced in *STIs* from 2010 onwards. *STIs* reached the lowest level during the 2013/2014 financial year. The predictions of a continued slowed economic recovery could have kept CEOs' STIs depressed below what they would normally be, even though South Africa was not officially in a recession anymore.

Similar to the trend in *Fixed pay*, at face value, the decline in *STIs* appears to mirror the trend in some of the components of *Company performance*. In particular, the

trend appears to be similar to the trends of *OP*, *Net profit*, *ROCE*, and *ROE*. These results are worth mentioning, as they start to form a foundation for the notion that there is some relationship between *STIs Company performance*. The statistical significance of this relationship was explored further in the research. Figure 17 illustrates the means and medians for *STIs* for the period under study.

Figure 17 *STIs* (2006 – 2014)



The decrease in the median of *STIs* in the 2009/2010 financial year could be attributed to the economic downturn. Taking into consideration the 8% increase in *Fixed pay* during the nine-year period, the 4% decline in *STIs* is cause for concern, as this may indicate that the structure of CEOs' remuneration changed to focus more on fixed pay. This will be discussed further in Chapter 6.

5.2.2.3 Total remuneration

Table 18 provides a summary of *Total remuneration* from 2006 to 2014.

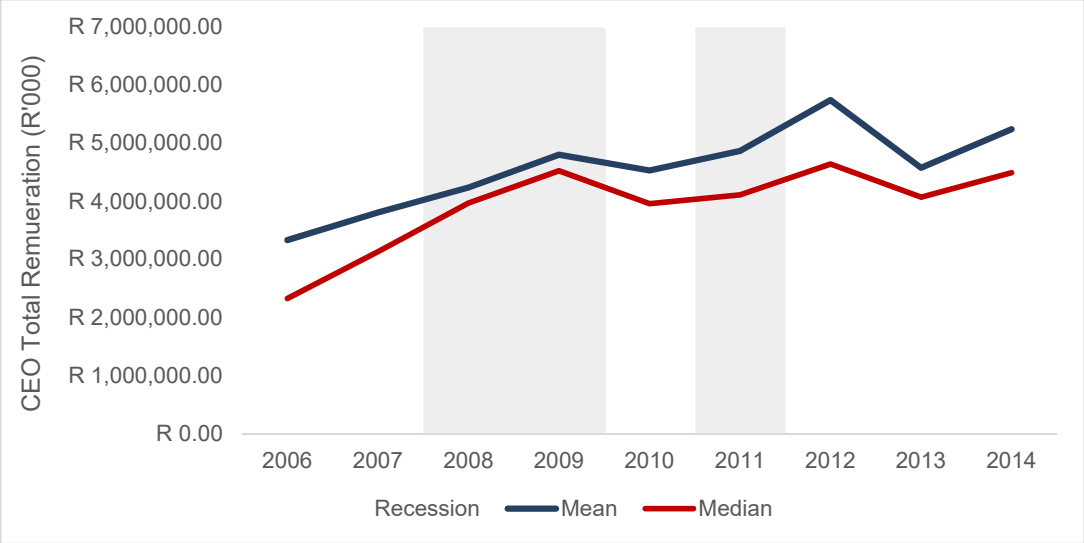
Table 18 *Total remuneration* (2006 – 2014)

Year	Mean	SD	Median
2006	3 332 067.96	2 265 677.94	2 325 750.00
2007	3 807 600.78	2 136 055.98	3 132 787.50
2008	4 237 731.59	2 744 345.78	3 970 035.00
2009	4 802 590.06	2 716 499.95	4 525 037.50
2010	4 531 525.29	2 300 189.77	3 959 000.00

2011	4 868 698.06	2 666 919.72	4 111 500.00
2012	5 743 642.19	3 174 628.91	4 641 500.00
2013	4 577 509.56	2 634 924.46	4 072 000.00
2014	5 241 013.27	2 695 857.11	4 490 227.27

Total remuneration, as reflected in the median value, increased from R2 325 750.00 to R4 490 227.27 over the nine-year period. This represents an average year-on-year increase of 9% and a total increase of 93% over the period. The increase in *Total remuneration* in the 2006/2007 financial year was the highest, at 35%. A decline of 13% in *Total remuneration* was found for the 2009/2010 financial year, and again in the 2012/2013 financial year, at 12%. A possible explanation for the decline during the 2009/2010 financial year could be the fallout from the economic recession, while the 2013 decline could possibly be attributed to the great number of acting CEOs during that period. The median of *Total remuneration* increased to its highest level in 2014. Figure 18 illustrates the means and medians of *Total remuneration*.

Figure 18 *Total remuneration* (2006 – 2014)



It is clear that *Total remuneration* fluctuated during the period under study. At face value, the trend above appears to mirror the trend of some of the components of *Company performance*. Specifically, the trend appears to be similar to that of *Turnover*, *OP*, *LR*, *ROCE*, and *ROE*. These results are significant, in that they strengthen the foundation of the notion that there is some relationship between *Total*

remuneration and *Company performance*. The extent of this relationship was further explored, and is reported on later in this paper.

5.2.3 Components of *Company performance*

The following components of *Company performance* (independent variables) were used for the purpose of this research: turnover, OP, NP, ROE, ROCE, LR, SR, AO, and IFWE. Table 19 provides a summary of the medians, and Table 20 provides a summary of the standard deviations of the descriptive statistics for each component of *Company performance* (except AO) for the 18 SOEs for the period 2006 to 2014.

In the subsequent paragraphs, each component of *Company performance* is discussed individually. It should be noted that the information provided in these paragraphs contains the results of median of the components of *Company performance* for the entire period for all the SOEs.

Table 19 Medians of *Company performance components*

(2006 – 2014)

Year	Turnover	OP	NP	LR	SR	ROCE	ROE	IFWE
2006	2 452 772 500.00	610 426 500.00	434 574 500.00	1.36	1.70	0.13	0.12	0.00
2007	2 935 435 500.00	1 093 511 512.00	266 969 500.00	1.25	1.94	0.14	0.12	0.00
2008	3 373 951 500.00	770 996 616.00	349 167 000.00	1.27	1.80	0.11	0.08	0.00
2009	3 608 791 000.00	505 362 500.00	254 127 000.00	0.99	1.52	0.08	0.08	0.00
2010	3 581 736 500.00	407 669 500.00	230 156 000.00	1.15	1.48	0.06	0.04	0.00
2011	4 122 956 000.00	532 792 055.50	142 390 500.00	1.35	1.55	0.05	0.05	121 871.50
2012	4 707 705 000.00	360 963 391.00	172 968 000.00	1.46	1.49	0.05	0.06	870 135.00
2013	4 882 121 500.00	228 674 780.00	147 827 000.00	1.89	1.64	0.03	0.05	4 615 500.00
2014	5 183 220 000.00	267 699 009.00	308 056 627.50	2.24	1.74	0.03	0.06	6 532 500.00

Table 20 indicates the standard deviations for the *Company performance* components for the same period.

Table 20 Standard deviations of Company performance components (2006 – 2014)

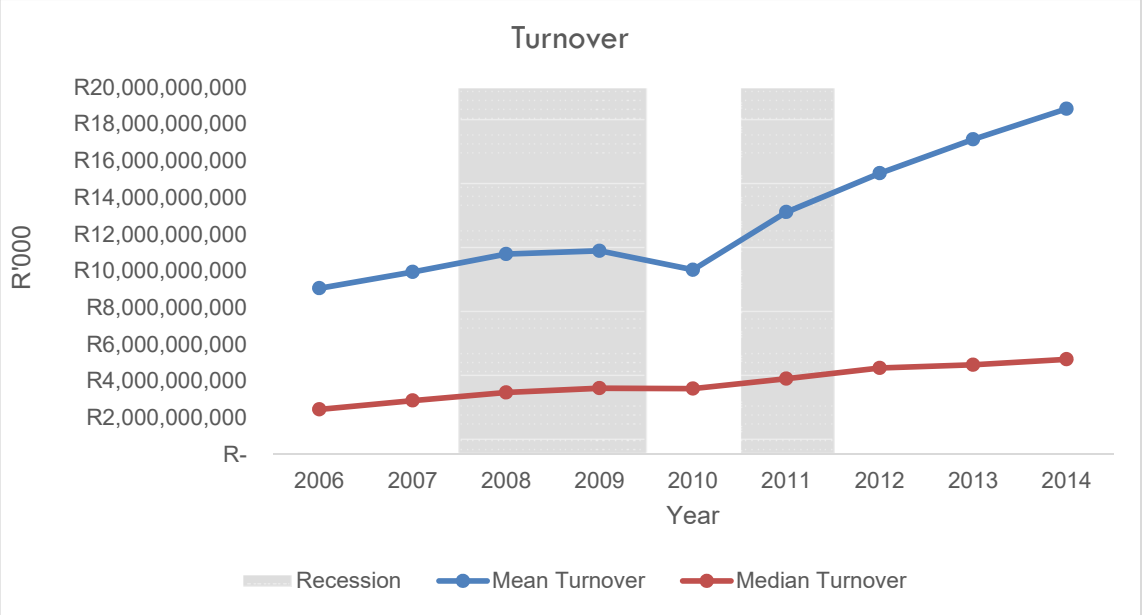
Year	Turnover	OP	NP	LR	SR	ROCE	ROE	IFWE
2006	14 029 089 736.97	4 077 494 496.67	2 487 634 508.85	2.39	1.25	0.27	0.60	3 768 925.14
2007	15 250 858 652.69	4 464 230 191.10	2 858 114 094.06	1.99	1.33	0.26	0.33	15 535 439.79
2008	16 470 407 093.20	3 995 448 365.57	2 236 625 996.73	1.82	1.37	0.21	0.23	19 827 142.80
2009	15 374 995 271.63	2 817 253 267.84	3 055 558 612.50	2.61	1.90	0.69	0.32	29 295 525.61
2010	17 939 019 529.13	4 432 694 813.84	8 793 504 985.39	2.19	2.09	0.17	0.39	178 657 442.77
2011	22 583 327 858.44	3 782 249 093.03	2 140 105 364.53	2.45	1.68	0.11	1.17	1 994 354 065.92
2012	27 896 579 286.56	5 542 880 950.90	3 258 931 720.40	2.15	1.36	0.14	0.51	168 527 770.81
2013	31 093 882 717.85	4 617 394 390.09	3 313 899 759.05	1.41	1.33	0.16	0.37	564 377 137.34
2014	33 731 318 826.90	4 036 611 855.17	2 399 121 949.77	1.75	1.68	1.04	0.22	965 285 484.85

(n = 18 per year)

5.3.3.1 Turnover

The *Turnover* median rose from R2 billion to R5 billion. This represented an average year-on-year increase of 10% for the nine-year period and a decline of 111% over period. Figure 19 illustrates the *Turnover* mean and median from 2006 to 2014, indicating the period of the global financial crisis of 2008/2009 and the August 2011 stock market fall as shaded areas.

Figure 19 *Turnover* (2006 – 2014)

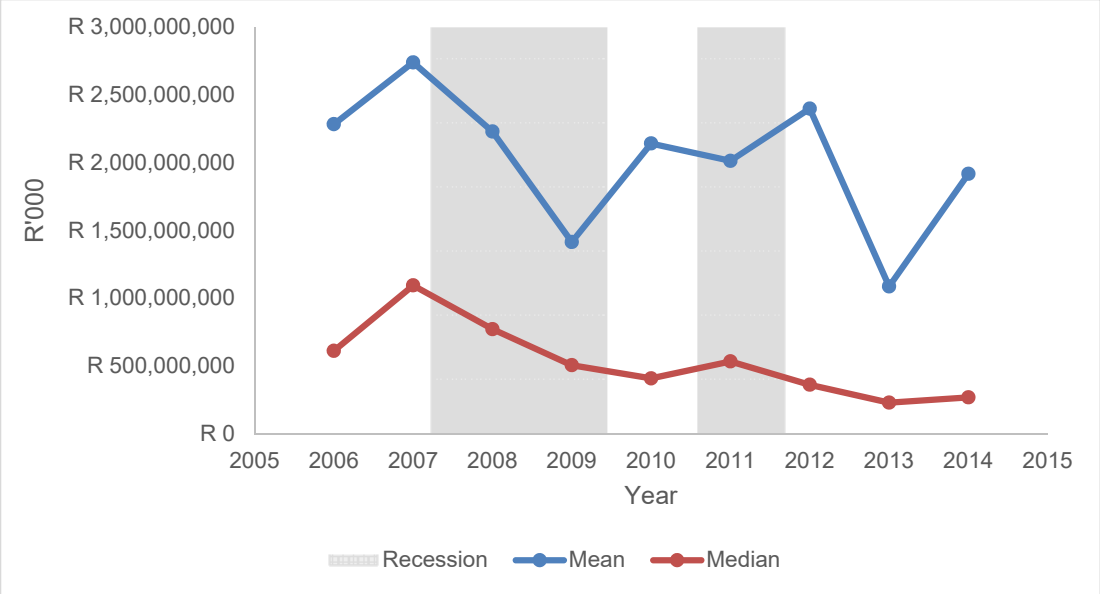


The average *Turnover* median indicated a relatively stable relationship during the study period. The average *Turnover* median experienced a marginal decrease of 1% during the 2009/2010 financial year. This could have been because of the global financial Crisis. The largest growth in *Turnover*, 15%, was experience during the 2007/2008 and 2010/2011 financial years. The increase during the 2010/2011 financial year was at the peak of the August 2011 stock market fall. The median of *Turnover* reached its highest level during 2014, at R5.18 billion.

5.3.3.2 Operating Profit

The median of *OP* decreased from R6 million to R2 million from 2006 to 2014. This represented an average year-on-year decrease of 10%, and a total decrease of 56% over the period. Figure 20 illustrates the *OP* mean and median from 2006 to 2014.

Figure 20 *Operating Profit* (2006 – 2014)

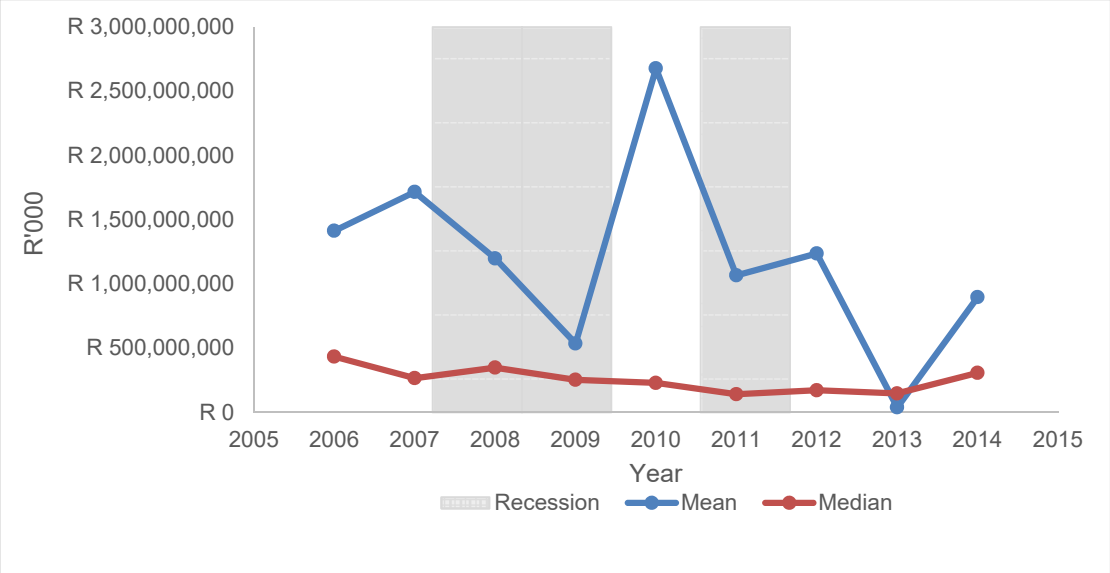


The median *OP* experienced a decline from 2007 to 2010, reaching its lowest level during the 2012/2013 financial year (-37%). A possible explanation for the negative growth could be that SOEs' overhead costs might have increased, or their debt-service cost had increased. Another possible explanation for the negative growth could be the global economic slowdown. It can be reasonably concluded that the decline in *OP* for the 2008/2009 financial year (-29%) and 2009/2010 financial year (-19%) was due to the global financial crisis. The decline in *OP* during the August 2011 stock market fall resulted in a decline of 32% in *OP* for the 2011/2012 financial year. An increase of 17% was experienced during the 2013/2014 financial year.

5.3.3.3 Net Profit

The median *NP* decreased from R4 million to R3 million from 2006 to 2014. This represented an average year-on-year decrease of 4% and a total decrease of 29% over the period. The median *NP* showed a downward trend during the 2006/2017 financial year, with a brief recovery in the 2007/2008 financial year. Figure 21 illustrates the *NP* means and medians from 2006 to 2014.

Figure 21 *Net Profit* (2006 – 2014**)**

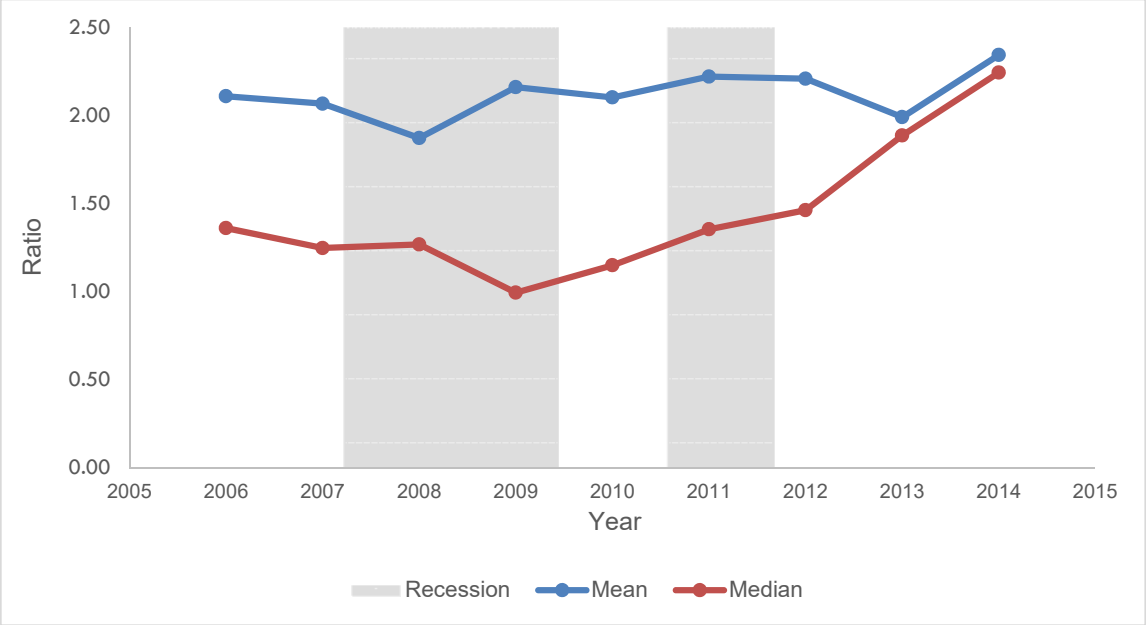


Similar to *OP*, it is clear from Figure 21 that the median *NP* declined from 2007 to 2011, with a slight recovery in the 2007/2008 financial year. This decline could possibly be attributed to the effects of the global financial crisis. The highest negative growth was experienced during the 2010/2011 financial year, with a decline of 38%. This decline in *NP* could possibly be due to the August 2011 stock market fall. Further, a decline in *NP* could have been due to higher expenses and loss of productivity. During the 2013/2014 financial year, a growth of 108% is seen in *NP*. NP is important to shareholders, because it is the source of remuneration to shareholders of the company, and if a company cannot generate enough profit to remunerate owners, the value of the company's shares will drop.

5.3.3.4 Liquidity ratio

The higher the LR is, the better the company's liquidity position is (Williams *et al*. 2006). The medians of *LR* changed noticeably over the nine-year period, with a total increase of 65% over the nine-year period, and an average year-on-year increase of 7%. Figure 22 illustrates the means and medians of *LR* for the period under study.

Figure 22 *Liquidity ratio* (2006 – 2014)



The data indicate that the median *LR* reached its lowest level in the 2008/2009 financial year, with a negative growth of 22% during the global economic slowdown from 2007 to 2009. The negative growth in *LR* could be attributed to an increase in short-term debt, a decrease in current assets, or a combination of the two. A decline in *LRs* means that, during the 2008/2009 financial year, SOEs' ability to generate cash decreased.

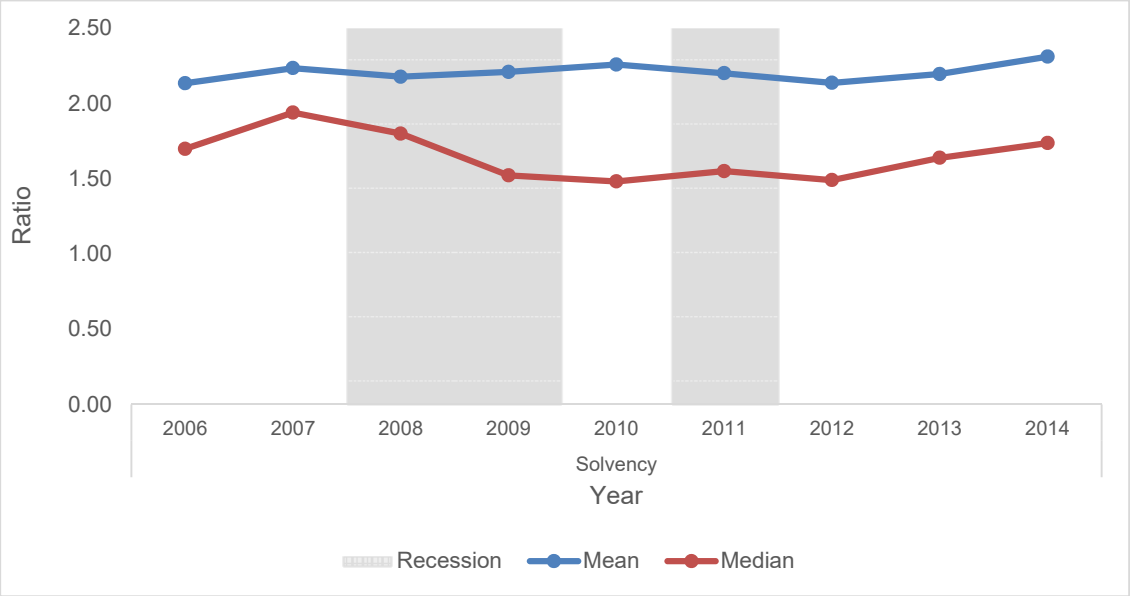
It can be concluded that, during the 2008/2009 financial year, SOEs' financial standing was less favourable than in other years, as their *LR* were below one. However, a very high LR may suggest that funds are being tied up, and may not be earning high returns (Ho (no date)). It appears that, from 2010 onwards, SOEs were in a better position to pay their short-term obligations, as the *LR* was higher than 1.

5.3.3.5 Solvency ratio

Acceptable SRs vary from industry to industry, but a general rule of thumb is that a company with an SR of 20% is financially healthy. Companies with higher SRs are more likely to meet their financial obligations, whereas those with lower SRs are seen as a greater risk. *SR* experienced an average year-on-year increase of 0.3% and a

total increase of 2% for the period 2006 to 2014. Figure 23 indicates that the mean and median *SR* remained consistent, as illustrated by a more or less horizontal line.

Figure 23 *Solvency ratio* (2006 – 2014)



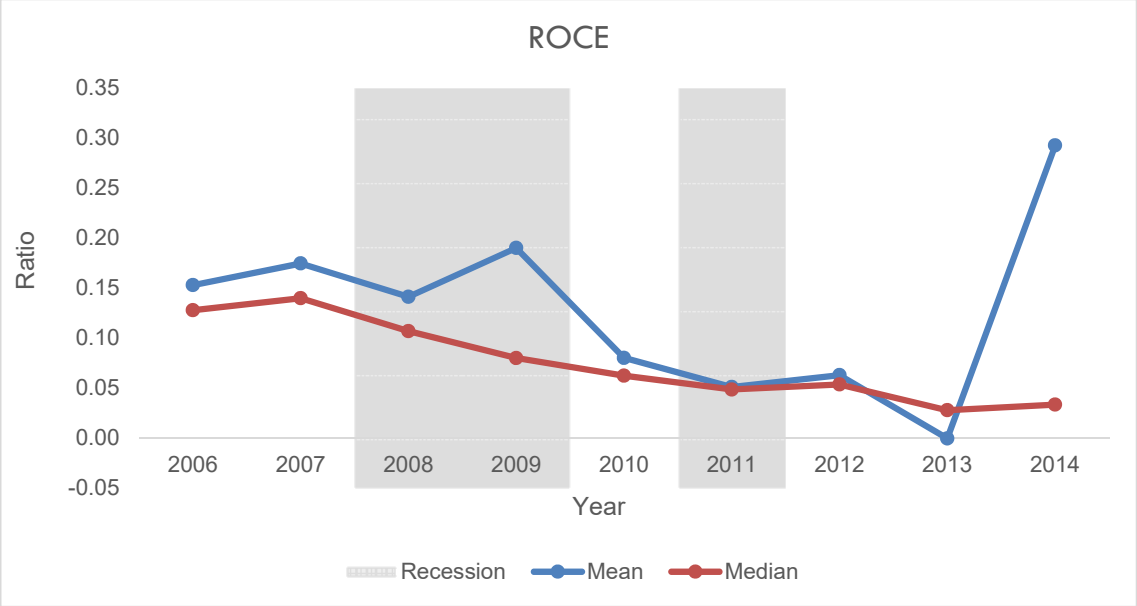
The data indicate that the growth in median *SR* during the 2006/2007 financial year was the highest, indicating that SOEs had taken on more risk during that period. The descriptive statistics indicated that median *SR* reached its highest level during this period, with a 14% growth. This was followed by a negative growth in the 2008/2009 financial year, with a 15% following the financial crisis of 2008. Negative growth in the *SR* was experience from 2008 to 2010. A decline in solvency may suggest that SOEs might have paid off their short-term debt, or possibly refinanced their short-term debt by means of long-term debt. A low SR suggests that a company is less dependent on leverage, for example, money borrowed from and/or owed to others (Loth 2016).

5.3.3.6 Return on Capital Employed

ROCE, in total, decreased by 74% over the nine-year period, with an average year-on-year decline of 16%. Figure 24 illustrates the mean and median of *ROCE* for the period under study. The ROCE expressed as a percentage, complements the ROE by adding a company's debt liabilities or funded debt, to equity, to reflect a company's total capital employed. This measure allows for a better understanding of a company's ability to

generate returns from its available capital base. As a rule, ROCE should be at or above a company's average borrowing rate (Loth 2015). A low ROCE is caused either by a low profit margin or large sums of capital employed.

Figure 24 *Return on Capital Employed* (2006 – 2014)



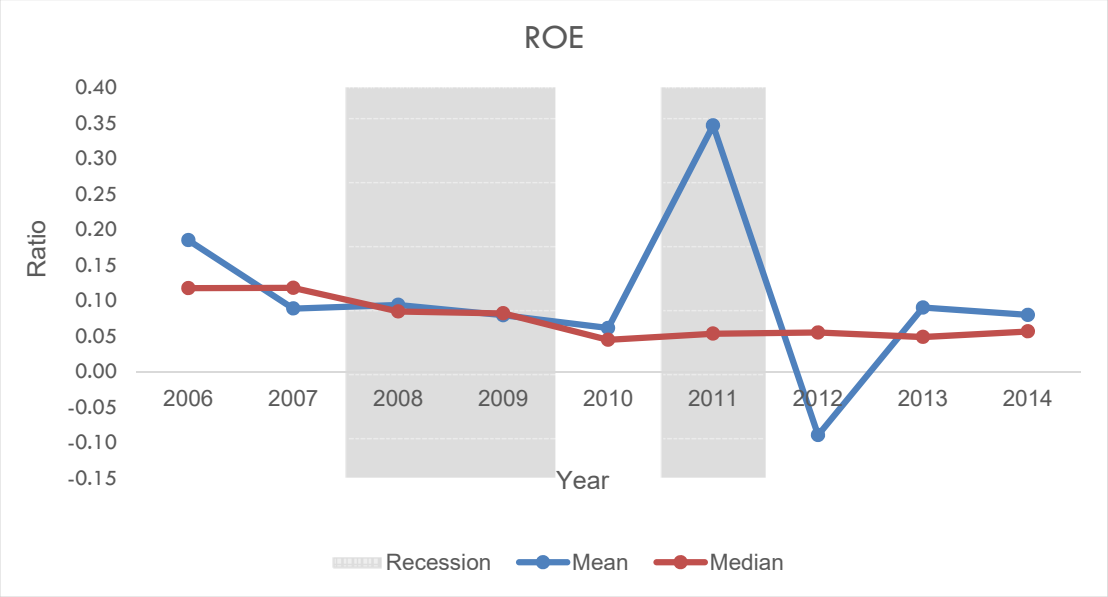
Similar to *SR*, the median *ROCE* experienced a negative growth from 2008 to 2011. From Figure 24, it is clear that the decline in *ROCE* followed the financial crisis of 2008, with a decrease of 25% during the 2009/2009 financial year. At the peak of the August 2011 stock market fall, the median *ROCE* increased by 11%. During the 2012/2013 financial year, the median *ROCE* reached its lowest level, 0.03% (a decrease of 48% from the previous financial year). A decline in ROCE could be attributed to possible changes in profit margins, asset utilisation, or errors in inventory counting (Ho (no date)).

5.3.3.7 Return on Equity

The data indicate that the median *ROE* experienced a total decline of 52% over the nine-year period, with an average 9% year-on-year decline. The data further indicate that the median *ROE* experienced a negative growth during the 2007/2008 financial year, with a decline of 28%. This suggests that, during this period, SOEs experienced a 28% loss in profit on every rand invested by shareholders. The largest negative

growth in the median *ROE* was during the 2009/2010 financial year, with a decline of 45%. This can possibly be attributed to the global financial crisis, and suggests that SOEs may not be resilient during economic downturns. Figure 25 illustrates the mean and median of for *ROE* from 2006 to 2014.

Figure 25 *Return on Equity* (2006 – 2014)

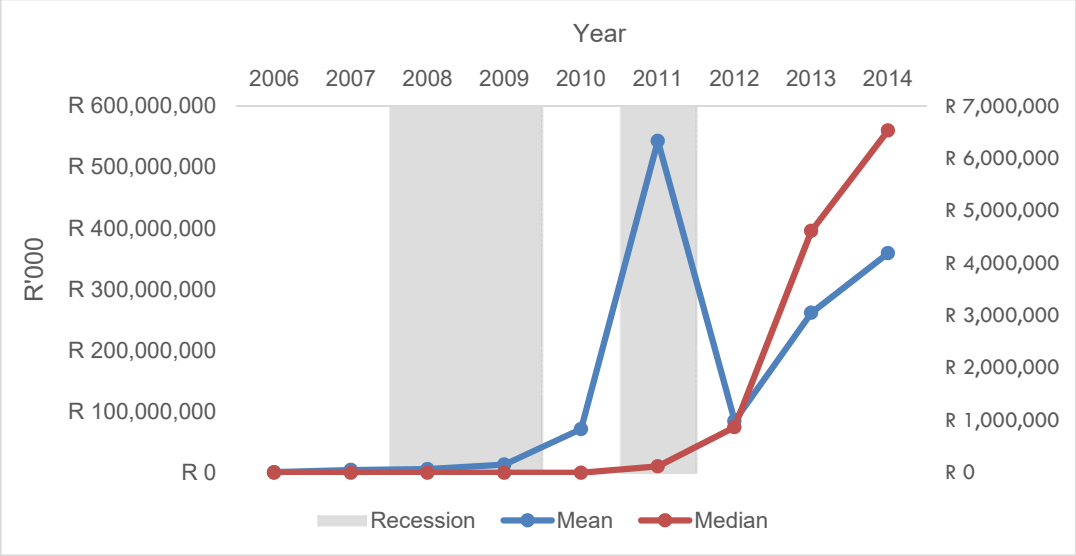


The descriptive statistics indicated that the highest growth in median *ROE* was for the 2010/2011 financial year, at 19%. Ndzi (2014) posits that the smaller the value of ROE is, the higher the risk is for SOE in difficult economic times. The reason for this is that, the more debt a company has, the less profit it makes. The *ROE* showed a decline during the period under study. Based on the observations in Figure 25, it can be argued that the 2008 global financial crisis and the August 2011 stock market fall did not have a serious impact on the ROE of SOEs.

5.3.3.8 Irregular, fruitless, and wasteful expenditure

Figure 26 illustrates the mean and median for *IFWE* from 2006 to 2014.

Figure 26 *Irregular, fruitless, and wasteful expenditure* (2006 – 2014)

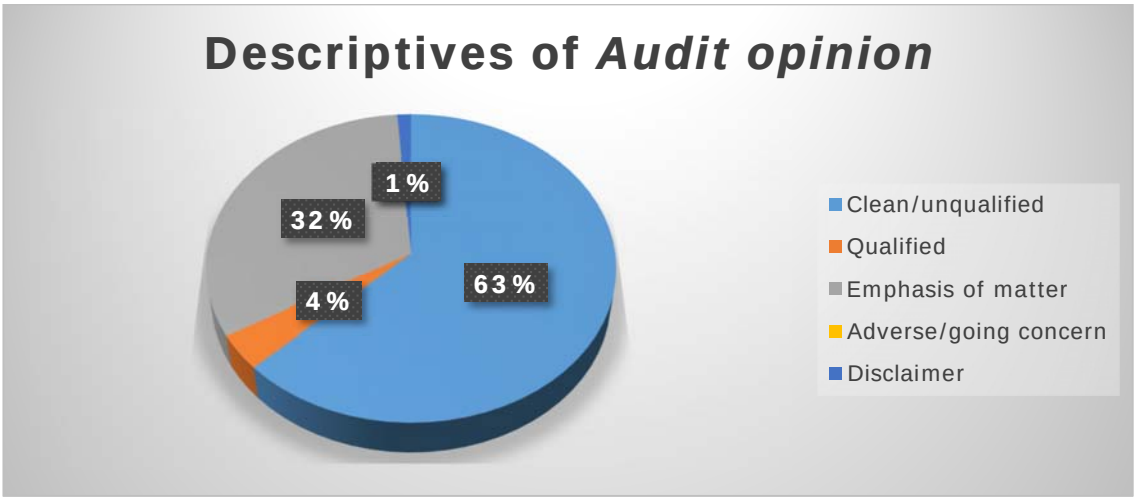


The descriptive statistics indicated that median *IFWE* grew by 614% during the 2011/2012 financial year. The average increase in median *IFWE* for the period 2011 to 2014 was a staggering 362%. A possible explanation for this could be that not all SOEs may have reported IFWE expenditure prior to 2010. A more plausible explanation could be that SOEs incurred expenditure that could have been avoided, had reasonable care been implemented.

5.3.3.9 Audit opinion

Figure 27 illustrates the *AOs* over the nine-year period.A total of (63%) clean/unqualified AOs were received, while (32%) emphasis-of-matter AOs were received. Furthermore, six (4%) adverse opinions were received, and two (1%) disclaimer opinions were received during the nine-year period.

Figure 27 *Audit opinions* (*n* = 162)



5.4 DESCRIPTIVE STATISTICS OF TOTAL DATA SET

The previous section provided the descriptive statistics of each of the *CEO remuneration* components, as well as each component of *Company performance*, for the 18 SOEs for the period 2006 to 2014. The purpose of this section is to provide the descriptive statistics of the entire data set (n = 162) over the nine-year period.

Table 21 provides a summary of the *CEO remuneration* components, with 162 observations between 2006 and 2014.

Table 21 *CEO remuneration* components for data set (2006 – 2014)

	Fixed pay	STIs	Total remuneration
Mean	2 863 266.34	1 111 574.88	4 663 172.36
Median	2 582 000.00	600 000.00	3 989 017.50
SD	1 348 299.09	1 319 400.00	2 863 294.56
Skewness	0.84	1.41	1.57
Kurtosis	0.64	2.03	3.83
Minimum	468 000.00	0	636 000.00
Maximum	7 751 643.00	6 473 000.00	19 108 837.00

The data show that the median *Fixed pay* for the period 2006 to 2014 was R2 582 000.00. The median *STIs* for the nine-year period was R600 000.00 and the median *Total remuneration* was R3 989 017.50. The highest *Total remuneration* was R19 108 837.00, and the lowest was R636 000.00. The difference between *Fixed pay* and *Total remuneration* could be because the industries of the SOEs are different, which could have an effect on their total remuneration. It is important to note that an amount of R19m for the year 2008 was omitted from the regression analysis, as it was identified as an outlier that had a significant impact on fitting a regression model. The zero *STIs* can be ascribed to the fact that there were indeed no bonuses received, or that these were not disclosed separately, but included in the total remuneration.

It is noted that the median of all the *CEO remuneration* components was, throughout the study period, lower than the mean. This suggested that the data were skewed to the right. It can also be seen from Table 21 that *Fixed pay* was slightly skewed, while *STIs* and *Total remuneration* were highly skewed, per the guidelines suggested by Bulmer (1979). According to George and Mallery (2010), values of skewness and kurtosis of between -2 and +2 are considered acceptable to prove a normal univariate distribution. The data displayed in Table 21 indicate that *Total remuneration* was not normally distributed.

According to Table 22, the mean *Turnover* for the nine-year period was over R12bn, while the mean *OP* was R2 024 505 570.55. The mean *NP* for the nine-year period was R1 198 456 114.76, with a mean *LR* of 2.12. This suggested that SOEs, in total, had, on average, R2.12 in current assets for every rand in current liabilities. To put it differently, SOEs had 2.12 times as many current assets as current liabilities. The mean *SR* was 2.21. Acceptable SRs vary from industry to industry, but, as a rule, an SR of 20% is considered financially healthy. Based on the results of the present study, the SOEs were more than able to meet their financial obligations as their *SR*, on average, was 221%. The mean *ROCE* was 0.13, with a minimum of -0.48 and a maximum of 4.46. It is clear that the *ROCE* figures of the SOEs were volatile and fluctuated from year to year. In general, companies with stable and rising ROCE figures are favoured. The mean *ROE* was 0.10. The mean *IFWE* for all 18 SOEs was

R149 434 056.36. Overall, the results for *Company performance* were skewed, and not normally distributed.

Table 22 Descriptive statistics for *Company performance* components

	Turnover	OP	NP	LR	SR	ROCE	ROE	IFWE
Mean	12 846 687 444.51	2 024 505 570.55	1 198 456 114.76	2.12	2.21	0.13	0.10	149 434 056.36
Median	3 906 150 000.00	427 877 500.00	187 401 000.00	1.29	1.64	0.07	0.07	0
SD	22 409 083 681.46	4 172 812 904.44	3 880 533 795.92	2.07	1.54	0.45	0.53	756 117 926.82
Skewness	3.25	2.07	5.29	2.02	2.27	7.11	4.91	8.73
Kurtosis	12.77	5.80	48.96	4.40	6.32	62.23	46.20	87.29
Minimum	93 908 207	-11 047 000 000.00	-11 499 000 000.00	0.44	0.82	-0.48	-1.90	0
Maximum	139 506 000 000.00	22 329 000 000.00	37 585 000 000.00	10.49	9.77	4.46	4.99	8 300 500 000.00

5.5 RESULTS OF DIAGNOSTIC CHECKING

Regression analysis is a technique generally used to quantify economic relationships (Pedace 2013). For the purpose of the present study, multiple regression analysis was used for panel data, in which all the independent variables were entered into the equation concurrently. The researcher then evaluated each independent variable in terms of its predictive power, over and above that offered by all the other independent variables. The results with regard to testing of the assumptions of regression (diagnostic checks), namely normality, stationarity, autocorrelation, outliers, and multicollinearity, are discussed in this section.

5.5.1 Normality Test

The researcher tested *CEO remuneration* and *Company performance* for normality, using the Shapiro-Wilk test. Razali and Wah (2011: 32) found the Shapiro-Wilk test to be "the most powerful test" of normality for all sample sizes. A non-significant result (a Sig. value of more than 0.05) indicates normality. Table 23 presents the results for the normality test for *CEO remuneration* and *Company performance*.

Table 23 Test of Normality – *CEO remuneration*

	Shapiro-Wilk		
	Statistic	**df**	**Sig.**
CEO remuneration			
Fixed pay	0.93	162	0.00
STIs	0.82	162	0.00
Total remuneration	0.88	162	0.00
Total remuneration adjusted for *Tenure* (1% per year)	0.87	162	0.00
Company performance			
Turnover	0.58	162	0.00
OP (R'000)	0.70	162	0.00
NP (R'000)	0.52	162	0.00
LR	0.78	162	0.00
SR	0.75	162	0.00
ROCE	0.41	162	0.00
ROE	0.53	162	0.00
Total IFWE	0.19	162	0.00

The figures in Table 23 show that the significance values for all the variables were below $p < 0.05$, suggesting violation of the assumption of normality. The *CEO*

remuneration data as well as those for *Company performance* therefore deviated from a normal distribution.

5.5.2 Stationarity Test

For the purpose of this study, the researcher performed the ADF test to determine the stationarity of each variable. Stationarity indicates that the variance and means will not change throughout the periods (Yan *et al.* 2015). Table 24 indicates the results of the ADF test and significance value for each component of *Company performance* and *CEO remuneration*.

Table 24 Stationarity test for *Research* components

Variable	Test statistic	Probability
Fixed pay	28.56	0.81
Total remuneration	43.44	0.13
Turnover	36.32	0.45
OP	47.89	**0.01**
NP	19.48	0.99
LR	45.84	0.13
SR	42.81	0.20
ROCE	73.05	**0.00**
ROE	58.86	**0.01**
Total IFWE	30.24	0.11

Table 24 shows that *OP* (p = 0.01), *ROCE* (p = 0.00), and *ROE* (p = 0.01) were stationary, and did not contain a unit root. A time series is stationary if its mean and variance do not vary systematically over time (Gujarati & Porter 2009). This suggests that a stationary time series' statistical properties will be the same in the future as they were in the past. The null hypothesis of the ADF test, as proposed by Gujarati and Porter (2009), for these components of *Company performance* is therefore rejected.

With regard to the other *Company performance* components, as well as *Fixed pay* and *Total remuneration*, the null hypothesis, as proposed by Gujarati and Porter (2009), of the ADF test is not rejected (p > 0.05). Therefore, *Fixed pay*, *Total*

remuneration, *Turnover*, *NP*, *LR*, *SR*, and *IFWE* were all non-stationary and did contain a unit root. These *Company performance* components' means and variances therefore varied systematically over time.

5.5.3 Autocorrelation

For the purpose of this study, the DW test for autocorrelation was used. The DW statistic varies from zero 4. A value of 2 means that there is no autocorrelation in the sample. A value of zero indicates positive autocorrelation, and a value of 4 indicate negative autocorrelation (Investopedia 2015 (b)). Acceptable thresholds for the absence of autocorrelation lie between 1.5 and 2.5. Addressing existence of autocorrelation formed part of the modelling process, and is discussed in detail in subsequent paragraphs.

5.5.4 Multicollinearity

Multicollinearity takes place when two explanatory variables are highly correlated (r = 0.90) (Westhoff 2013). In their study, Agerberg and Mirzaii (2010) deem an absolute value of $r > 0.80$ as problematic. Annexure D provides detailed results for the correlations of the independent variables that were, for the purpose of this study, the explanatory variables. As can be seen from the results in Annexure D, none of the explanatory variables was highly correlated with another. Thus, no problems were detected in the tests. Due to the absence of multicollinearity in this research, all the *Company performance* components were included in the multiple regression analysis, without fear that high correlations among independent variables would lead to unreliable and unstable estimates of regression coefficients.

5.6 RESULTS OF RESEARCH QUESTION 1

This section discusses the results of the correlational and regression analysis in addressing Research Question 1, which aimed to determine whether there was a relationship between CEO remuneration and SOEs' performance over a nine-year period (2006 to 2014). The expectation was that a negative relationship would exist between *CEO remuneration* and *Company performance*, in light of the poor performance of SOEs over the past few years.

In addressing the various research sub-questions, separate regressions were run for the *CEO remuneration* components *Fixed pay* and *Total remuneration*. Because a third of the SOEs declared zero bonuses, it was not possible to make use of regression analysis for *STIs*. The Pearson correlation coefficient analysis was therefore performed to test the strength and statistical significance of the correlation between *STIs* and *Company performance*. To determine the influence of *CEO remuneration* (*Fixed pay and Total remuneration)* on *Company performance*, OLS multiple regression models for panel data were used. This allowed for the testing of the relationship between the dependent and independent variables. The dependent variables were the components of *CEO remuneration* respectively (*Fixed pay* and *Total remuneration*), and the independent variables were the various *Company performance* components. This approach indicates how much unique variance in the dependent variable is due to the influence of each of the independent variables (Pallant 2013). In the present study, multiple regression analysis was performed on panel data with 162 observations (nine years, with 18 companies). For all the regressions, *AO* was tested using dummy variables, due to its categorical nature, with *Audit Opinion 3* (*Adverse*) being the reference category.

In all the regressions, preliminary analyses were conducted to determine if any of the assumptions were violated. Further, in order to ensure that stationarity and serial correlation concerns were addressed, an auto-regressive term (AR1) was included in the regression.

Complete multiple regression measurement model/iterations and tables are presented in Annexure E. This section presents only a summary of the multiple regression tables for the various *CEO remuneration* components.

It is important to note that, in the literature and in general statistical terms, researchers refer to the results of the regression as ‘models’ and not ‘frameworks.’ Various studies have used this methodology; see, for example, Tariq (2010), De Wet (2012), Lundqvist and Erazo (2014), and Kuboya (2014). The present study therefore used the same terminology. Further, an optimal regression model can

include statistically significant predictors and non-statistically significant predictors, as the aim of a regression is to, for the model, determine the optimal set of independent variables that optimize the percentage variance explained. Thus, even if some of the measures are not statistically significant, they still contribute to a higher percentage of variance explained, making their inclusion necessary (Pohl 2016).

The approach to determine the optimum regression model is an iterative process, whereby insignificant independent variables are deleted, until the explanatory power does not show an increase, and the associated F-statistics of the regression does not show a decrease.

5.6.1 Relationship between *Fixed pay* and *Company performance*

The regression model included 144 balanced panel observations and 18 cross-sectional units over a period of eight years, due to the inclusion of the AR(1) term. Five iterations were run to determine the optimum final regression model for *Fixed pay.* Refer to Annexure E.1 for the different iterations. With regard to *Fixed pay*, Model 5 was regarded as the optimum model, and is discussed in subsequent paragraphs. Table 25 provides a summary of each individual regression model (with the t-statistics in parentheses).

Table 25 Regression: *Fixed pay* and *Company performance* components

Dependent variable: Fixed pay					
Models	**1**	**2**	**3**	**4**	**5**
Constant	2 774 276.00	2 750 492.00	2 736 442.00	2 765 884.00	2 877 548.00
AR(1)	0.66	0.67	0.66	0.66	0.64
Turnover	**302 000.00***	**302 000.00***	**304 000.00***	**340 000.00***	**335 000.00***
	(3.87)	**(3.93)**	**(3.98)**	**(4.94)**	**(5.04)**
OP	441 000.00	445 000.00	448 000.00		
	(0.96)	(0.99)	(1.00)		
NP	**-734 000.00***	**-744 000.00***	**-745 000.00***	**-503 000.00***	**-491 000.00***
	(-2.46)	**(-2.56)**	**(-2.57)**	**(-2.98)**	**(-2.89)**
Dependent variable: Fixed pay					
Models	**1**	**2**	**3**	**4**	**5**
LR	65 696.59	64 197.29	63 404.60	58 383.31	
	(1.01)	(1.10)	(1.10)	(1.01)	

SR	-8 801.99 (-0.08)				
ROCE	104 220.50 (0.70)	104 960.10 (0.72)	104 575.70 (0.72)		
ROE	-18 989.40 (-0.19)				
IFWE	-987 000 (-1.26)	-997 000 (-1.30)	-0.000102 (-1.34)	-0.000111 (-1.47)	-0.000112 (-1.47)
Dum_Qualified Audit opinion	-20 617.58 (-0.06)				
Dum_Emphasis of matter	-28 699.62 (-0.14)				
Dum_Disclaimer	-356 500.10 (-0.45)	-354 703.10 (-0.45)			
F-statistic	**20.28**	**31.33**	**35.99**	**50.22**	**62.54**
(*p*-value)	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**
DB stat	2.54	2.54	2.54	2.54	2.52
R^2	0.65	0.65	0.65	0.65	0.64
Adjusted R^2	**0.618**	**0.629**	**0.631**	**0.632**	**0.632**

Note: (i) Coefficients reported with t-statistics in parenthesis; and (ii) Unstandardized beta coefficients are presented
* indicate significance at the 5% level.

Model 1, the first multiple regression performed (baseline model) in Table 25, included all the *Company performance* components. The DW statistic tests for autocorrelation, expressed as a value of between 0 and 4. A value of 2 indicates that there is no autocorrelation in the selected sample. As can be seen from Table 25, the DW test statistic was 2.5, indicating no serious serial correlation.

The last regression, Model 5 in Table 25, was regarded as the optimum model, as the F-statistic increased to 62.54, in conjunction with an improvement of the adjusted R^2. The optimum model indicated that 63% (adjusted $R^2 = 0.63$) of the variation in *Fixed pay* was explained by *Company performance*. The increase in adjusted R^2 showed that these variables were the optimal set of independent variables among the variables considered in predicting *Fixed pay*. Further reduction — taking out *IFWE* — resulted in a decrease in the F-statistic and adjusted R^2 value. In addition, the increase in the adjusted R^2 and the F-statistic was also an indication of the reliability of the regression model. The results of Model 5 showed that the major determinants of *Fixed pay* among *Company performance* measures were *Turnover, NP, and IFWE*. However, only the *p*-values of *NP* and *Turnover* were statistically significant ($p < 0.05$), suggesting a stronger relationship between *Fixed pay* and these two *Company performance* components.

As expected, *NP* was negatively related to *Fixed pay*. A possible explanation for the negative relationship could be that the SOEs' net profit decreased during the study period, and labour costs (such as salaries) increased. For every R1 million increase in *NP*, *Fixed pay* decreased by R491 000. *Turnover* was positively significantly linked to *Fixed pay*. For every R1 million increase in *Turnover*, *Fixed pay* increased, on average, by R335 000. *IFWE* related negatively to *Fixed pay*, although this relationship was not statistically significant. This suggests that a higher *IFWE* will result in a lower *Fixed pay*, and vice versa.

Table 25 further indicates that *AO* does not play a role in the determination of *Fixed pay*. It was further noted that the coefficient of *NP* was negative for all the models tested.

5.6.2 Relationship between *STIs* and *Company performance* components

Despite the fact that a third of the SOE had declared zero bonuses, an analysis using zero *STIs* was done, because it accurately reflected cases where CEOs did not receive a bonus (for whatever reason).

A zero-bonus value might have existed because (1) the CEO did not meet the minimum performance threshold or (2) SOEs did not award a bonus during a specific financial year. Table 26 lists the correlations coefficients between *STIs* and *Company performance* over the entire study period, while Figure 28 illustrates the relationship.

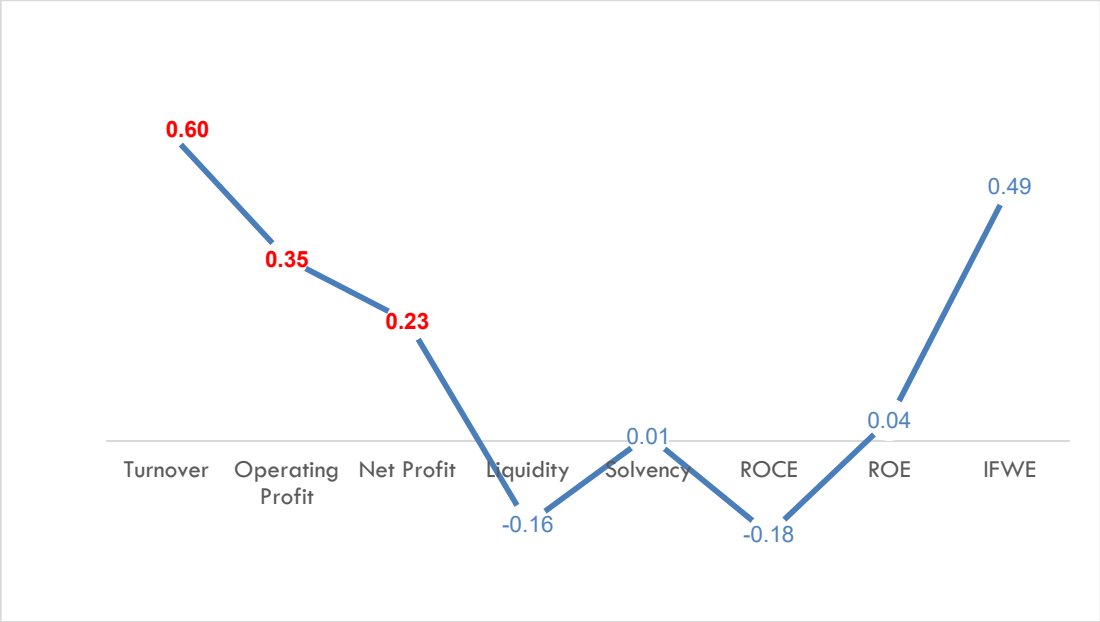
Table 26 Correlations: *STIs* and *Company performance* (2006 – 2014)

		Turnover	OP	NP	LR	SR	ROCE	ROE	IFWE
STIs	Pearson correlation	**0.60****	**0.35****	**0.23***	-0.16	0.01	-0.18	0.04	0.49
	Sig. (2-tailed)	0.01	0.00	0.02	0.11	0.94	0.06	0.65	0.62
	N	108	108	108	108	108	108	108	108

* Correlation is significant at the 0.01 level (2-tailed)
** Correlation is significant at the 0.05 level (2-tailed)

The results show that there was a statistically significant weak to strong positive correlation between *STIs* and *OP*, and between *STIs* and *NP*, ($r_{Operating\ Profit} = 0.35, p = 0.00$; $r_{Net\ Profit} = 0.23, p = 0.02$) and a strong positive correlation between *STIs* and ***Turnover*** ($r_{Turnover} = 0.60, p = 0.01$).

Figure 28 Correlation between *STIs* and *Company performance*



5.6.3 Relationship between *Total remuneration* and *Company performance*

The regression model included 142 unbalanced panel observations and 18 cross-sectional units over a period of nine years. Five iterations were run to determine

the optimum final regression model for *Total remuneration*. Refer to Annexure E.2 for the different iterations. Regarding *Total remuneration*, Model 5 was regarded as the optimum model, as discussed in subsequent paragraphs. The results of each individual regression model are summarised and presented in Table 27 (with the t-statistics in parentheses).

Table 27 Regression: *Total remuneration* and *Company performance*

Dependent variable: Total remuneration					
Models	**1**	**2**	**3**	**4**	**5**
Constant	4 734 563.00	4 545 667.00	4 536 532.00	4 436 095.00	4 647 930.00
	(6.00)	(6.86)	(6.93)	(6.88)	(7.55)
AR (1)	0.74	0.73	0.73	0.74	0.75
	(12.70)	(12.60)	(12.64)	(13.00)	(14.16)
Turnover	113 000.00	121 000.00	122 000.00	121 000.00	
	(0.67)	(0.74)	(1.64)	(1.65)	
OP	**0.000270***	**0.000267***	**0.000267***	**0.000273***	**0.000293***
	(3.11)	**(3.10)**	**(3.12)**	**(3.22)**	**(3.67)**
NP	**-0.000184***	**-0.000181***	**-0.000181***	**-0.000184***	**-0.000191***
	(-3.38)	**(-3.35)**	**(-3.36)**	**(-3.45)**	**(-3.68)**
LR	167 115.50	145 303.30	144 970.80	140 075.50	137 633.10
	(1.37)	(1.30)	(1.30)	(1.27)	(1.25)
SR	-93 446.08				
	(-0.44)				
ROCE	-305 089.10	-294 257.70	-294 233.80	-285 637.60	-280 666.90
	(-1.11)	(-1.08)	(-1.08)	(-1.06)	(-1.05)
ROE	82 217.63				
	(0.46)				
IFWE	-0.000163	-0.000169	-0.000170	-0.000170	-0.000156
	(-1.14)	(-1.20)	(-1.21)	(-1.22)	(-1.14)
Dum_Qualified	-457 843.30	-464 156.30	-463 094.10		
Audit opinion	(-0.68)	(-0.69)	(-0.69)		
Dum_Emphasis	-302 816.00	-300 267.4	-299 320.40		
of matter	(-0.77)	(-0.77)	(-0.77)		
Dum_Disclaimer	-212 477.00	-183 179.90			
	(-0.14)	(-0.12)			
F-statistic	**21.14**	**25.64**	**28.70**	**37.15**	**43.41**
(*p*-value)	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**
DW stat	2.71	2.70	2.70	2.72	2.74
R^2	0.66	0.66	0.66	0.66	0.65
Adjusted R^2	**0.631**	**0.636**	**0.638**	**0.642**	**0.642**

Note: (i) Coefficients reported with t-statistics in parenthesis; and (ii) Unstandardized beta coefficients are presented

* Significance at the 5% level.

Model 1, in Table 27, the baseline model, included all the *Company performance* components. As can be seen from Table 27, the DW test statistic was 2.74, indicating no serious serial correlation.

The last regression, Model 5, in Table 27, was regarded as the optimum model, as the F-test statistic increased to 43.41, indicating an optimal fit for the model. Further reduction of independent variables resulted in a decrease in the F-statistic and adjusted R^2 value. The optimum model also explained 64% (adjusted $R^2 = 0.64$) of the variance in *Total remuneration*. The adjusted R^2 is slightly higher than that of Model 1 (0.63).

The findings from Model 5 indicate that there is a relationship between *Total remuneration* and each of the following components: *OP*, *NP*, *LR*, *ROCE*, and *IFWE* in South African SOEs. However, the *p*-values of *OP* and *NP* were below the significance level of 5% ($p < 0.05$), suggesting a stronger relationship between *Total remuneration* and these two performance variables than the relationship between *Total remuneration* with *LR*, *ROCE*, and *IFWE* respectively.

The results from Model 5 show that *Total remuneration* had a: (a) statistically significant positive relationship with *OP*, (b) a statistically significant negative relationship with *NP*, (c) a positive, non-statistically significant relationship with *LR* and *ROCE*, and (d) a negative, non-statistically significant relationship with *IFWE*.

5.6.4 Correlation between *CEO remuneration* components and *AO*

The correlation between *AO* (an ordinal variable that can assume the values of 0 to 4) and *CEO remuneration* was analysed by calculating non-parametric correlation coefficients.

To address Research Question 1, the Spearman rank correlation coefficient analysis was performed to test the strength and statistical significance of the relationship between *CEO remuneration* components and *AO*. Table 28 lists the correlations between *CEO remuneration* and *AO* for the period 2006 to 2014.

Table 28 Correlation: *CEO remuneration* and *AO*

		STIs	Fixed pay	Total remuneration
AO	Correlation coefficient	**-0.30***	**-0.18****	**-0.27***
	Sig. (2-tailed)	0.00	0.02	0.00
	N	162	162	161

**Correlation is significant at the 0.01 level (2-tailed)

*Correlation significant at the 0.05 level (2-tailed)

The higher the level of *AO* is, the poorer the *AO* is. The results showed a statistically significant moderate weak to negligible, negative relationship between the *CEO remuneration* components and *AO* ($r_{CEO\ STI} = -0.30, p = 0.00$; $r_{CEO\ fixed\ salary} = -0.18, p = 0.02$; $r_{CEO\ total\ remuneration} = -0.27, p = 0.00$). In fact, the relationship with *Fixed pay* was found to be negligible. This means that poor *AOs* were associated with low *Fixed pay*, *STIs,* and *Total remuneration*. These results indicate that (a) *STIs* moderately decreased, (b) *Fixed pay* negligibly decreased, and (c) *Total remuneration* moderately decreased with an increase in *AO*.

5.7 RESULTS OF RESEARCH QUESTION 2

The second research question sought to determine whether the relationship between the *CEO remuneration* components and *Company performance* strengthened over the nine-year period. The nonparametric Spearman's rank correlation coefficient was therefore used to test whether there was a correlation between each of the three *CEO remuneration* components and *Company performance*. The correlation coefficients per year were used to chart the trend over the nine-year period.

The expectation was that the relationship would have strengthened, based on increased regulations and monitoring of SOEs, such as the Companies Act (2008) and King III, which require CEO remuneration to be linked to some form of organisational performance. However, the poor performance of SOEs, as widely

mentioned in the media (for example, Donnelly 2015), could negate this expectation. The results are briefly discussed below.

5.7.1 Strength of relationship between *Fixed pay* and *Company performance*

Table 29 provides the correlation coefficients (r_s) for the relationship between *Fixed pay* and all the components of *Company performance* per year.

Table 29 Correlation: *Fixed pay* and *Company performance* (n = 18 per year)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Turnover	**0.63****	**0.51***	**0.51***	**0.77****	**0.71****	**0.51***	**0.64****	**0.65****	**0.74****
OP	0.43	0.45	0.28	0.28	**0.55***	0.44	**0.58***	0.10	**0.72****
NP	0.41	0.37	0.17	-0.19	0.29	0.34	**0.49***	-0.23	**0.66****
LR	-0.26	-0.34	-0.17	-0.14	-0.23	-0.16	0.09	**-0.55***	-0.41
SR	-0.22	-0.26	-0.15	-0.11	-0.07	-0.04	-0.00	-0.38	-0.23
ROCE	-0.26	-0.01	-0.35	-0.27	-0.17	0.04	-0.34	**-0.50***	0.19
ROE	0.36	-0.43	-0.34	-0.20	0.12	-0.12	-0.00	-0.20	0.14
IFWE	**0.53***	-0.02	-0.00	-0.18	0.07	0.14	0.17	-0.23	-0.18

** p < .01 (2-tailed)

* p < 0.05 (2 tailed)

From Table 29, it is clear that there was a strong to very strong, statistically significant positive relationship between *Fixed pay* and *Turnover* ($r_{2006} = 0.63, p = 0.00; r_{2007} = 0.51, p = 0.03$); $r_{2008} = 0.51, p = 0.03; r_{2009} = 0.77, p = 0.00, r_{2010} = 0.71, p = 0.00$, $r_{2011} = 0.51, p = 0.03$; $r_{2012} = 0.64, p = 0.00, ; = 0.651, p = 0.00$; $r_{2014} = 0.74, p = 0.00)$. Most of the other components showed differing degrees of correlation over time. In some cases, the correlation was stronger, and, in other cases, there was almost no or a negligible relationship. While *ROE* showed a weak positive correlation with *Fixed pay* (with no significance), *ROE* showed a declining relationship with *Fixed pay* during the period under study. Figure 29 shows

the strength of the relationship between *Fixed pay* and statistically significant components of *Company performance* from 2006 to 2014.

Figure 29 *Fixed pay* and *Company performance*

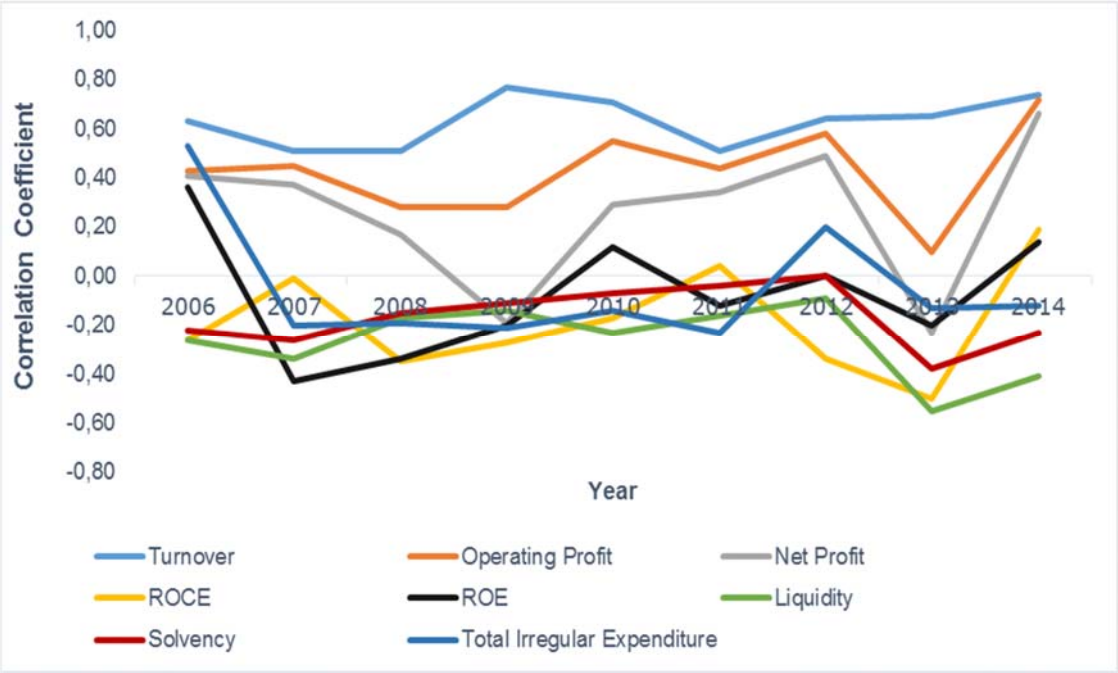


Figure 29 illustrates that the relationship did not strengthen over this period, but that it did fluctuate. The results in Figure 29 further show mostly a positive relationship throughout the period between *Fixed pay* and *Turnover*. The relationship with the other components of *Company performance* seemed to fluctuate between positive and negative throughout the study period. The figure further shows mostly a negative relationship between *Fixed pay* and *ROCE* during the study period, except for the years 2011 and 2014. It was noted that there was a sharp decline in the strength of the relationship between *Fixed pay* and *NP* during 2009 (during the financial crisis), and an upward movement in the strength of the relationship between *Fixed pay* and almost all of the *Company performance* components during 2014 (except with *IFWE*, which remained relatively stable).

A sharp decline is evident in the strength of the linear relationship between *Fixed pay* and all the *Company performance* components during 2013 (except with *Turnover*). This suggests that the linear relationship between *Fixed pay* and *Company performance* was at its lowest during 2013. A possible explanation for

this decline could be the fragility of the global economy, political uncertainty, and unemployment. Another explanation could be the 16% decline of the rand's value during 2013. An upward movement in the strength of the linear relationship between *Fixed pay* and almost all the components of *Company performance* during 2014 is visible. The most stable relationship was between *Fixed pay* and *Turnover.*

5.7.2 Strength of the relationship between STIs and *Company performance*

Table 30 provides the correlation coefficients (r_s) for the relationship between *STIs* and all the components of *Company performance* per year.

Table 30 Correlations — *STIs* and *Company performance*

	2006 (n = 13)	2007 (n = 15)	2008 (n = 12)	2009 (n = 12)	2010 (n = 13)	2011 (n = 12)	2012 (n = 11)	2013 (n = 10)	2014 (n = 10)
Turnover	**0.63***	**0.77****	0.55	0.31	0.40	0.07	0.38	0.35	**0.76***
OP	0.31	0.44	0.34	0.15	0.48	0.57	**0.71***	-0.28	**0.82****
NP	0.48	0.47	0.43	0.05	0.43	0.48	0.58	-0.29	**0.86****
LR	**-0.62***	-0.09	-0.18	0.04	-0.45	0.01	0.11	-0.19	-0.53
SR	-0.39	0.09	0.18	0.15	-0.48	0.34	0.36	-0.37	-0.19
ROCE	-0.10	-0.39	-0.40	**-0.59***	-0.14	0.42	-0.19	**-0.70***	0.38
ROE	0.34	**-0.64***	-0.47	**-0.64***	0.32	0.25	-0.13	-0.30	0.42
IFWE	-0.21	-0.15	-0.41	-0.27	0.05	-0.39	0.14	-0.48	0.18

** p < .01 (2-tailed)

* p < 0.05 (2 tailed)

The results show that there was a statistically significant strong or very strong positive correlation between *STIs* and the following components of *Company performance*: *Turnover*, *OP*, and *NP* in a number of years ($r_{Turnover_{2006}} = 0.63, p = 0.02$; $r_{Operating\ Profit_{2012}} = 0.71, p = 0.01$; $r_{Turnover_{2014}} = 0.79, p = 0.01$; $r_{Net\ Profit_{2014}} = 0.86, p = 0.00$). The results further show a strong statistically

negative relationship between *STIs* and the following *Company performance* components: *LR*, *ROCE*, and *ROE* in a number of years ($r_{Liquidity_{2006}} = -0.62, p = 0.02$; $r_{ROE\_2007} = -0.64, p = 0.01$; $r_{ROCE_{2009}} = -0.59, p = 0.01$; $r_{ROE_{2009}} = -0.64; p = 0.02$).

Figure 30 shows the trend of the relationship between *STIs* and the components of *Company performance* for the period 2006 to 2014. This figure shows unstable linear relationships between *STIs* and *Company performance* components, and that the trends are not consistent across the nine-year period.

Figure 30 *STIs* and *Company performance* components

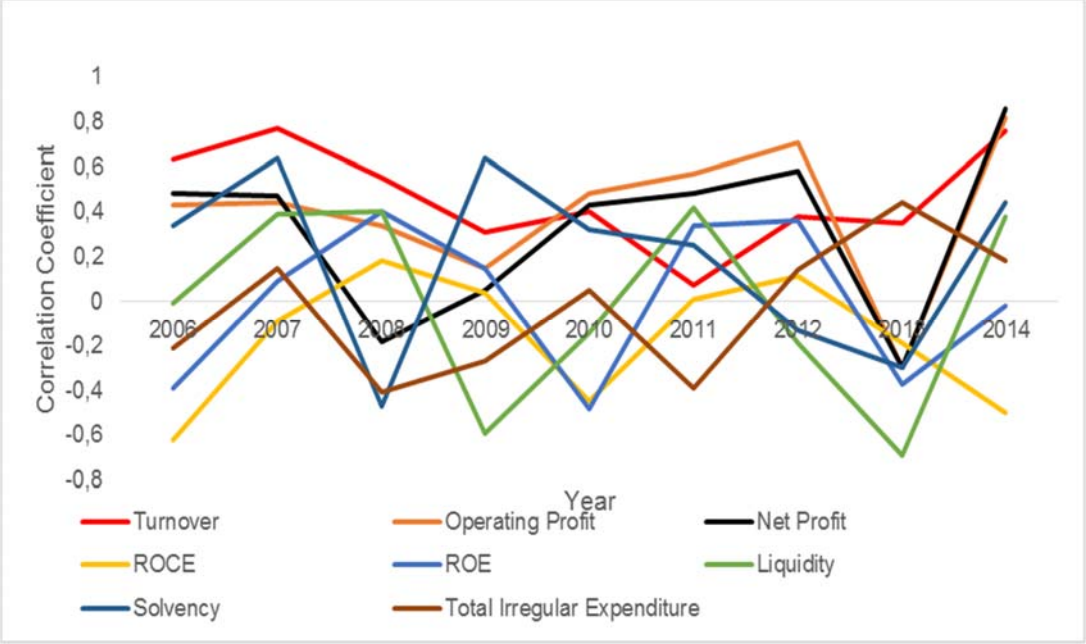


Figure 30 shows that the components of *Company performance* did not show a consistent, positive trend across the nine-year period, casting doubt on whether a range of performance targets were used to determine STIs for the CEOs. It is clear from the above figure that there is an unstable linear relationship between *STIs* and *Company performance*. This result may suggest that STIs were determined independently from company performance in the SOEs under study. The unstable linear relationship between *STIs* and *Company performance* could be cause for concern, as will be discussed in subsequent paragraphs.

5.7.3 Strength of the relationship between *Total remuneration* and *Company performance*

Table 31 provides the Spearman correlation coefficients and their associated *p*-values for the relationship between *Total remuneration* and *Company performance* components.

The results in Table 31 indicate that there was very strong statistically significant positive relationship between *Total remuneration* and *Turnover* for the years 2006, 2008, and 2009, and for the period 2011 to 2014 ($r_{2006} = 0.72; = 0.70$; $r_{2008} = 0.79$; $r_{2009} = 0.74$; $r_{2011} = 0.71$; $r_{2012} = 0.73$; $r_{2013} = 0.76$; $r_{2014} = 0.74$). This suggests that, as *Turnover* increased, *Total remuneration* increased, and vice versa. However, 2010 was an exception, where the relationship was strong ($R_{2010} = 0.50$). Most of the other components of *Company performance* showed different levels of correlation over time, in some cases stronger, and in others weaker.

Table 31 Correlations — *Total remuneration* and *Company performance* components

	2006 (n = 13)	2007 (n = 15)	2008 (n = 12)	2009 (n = 12)	2010 (n = 13)	2011 (n = 12)	2012 (n = 11)	2013 (n = 10)	2014 (n = 10)
Turnover	**0.72****	**0.70****	**0.79****	**0.74****	**0.50***	**0.71****	**0.73****	**0.76****	**0.74****
OP	0.46	0.36	0.21	0.20	**0.66****	**0.66****	**0.75****	0.26	**0.79****
NP	**0.53***	0.29	0.32	0.24	**0.59****	**0.58****	**0.53***	0.14	**0.69****
LR	**-0.52***	-0.17	0.05	0.03	-0.39	-0.33	-0.28	**-0.63****	-0.11
SR	-0.22	-0.03	0.25	0.34	0.06	0.10	0.29	-0.30	-0.11
ROCE	0.01	-0.10	-0.32	-0.44	-0.13	-0.00	0.21	-0.11	0.39
ROE	0.31	**-0.53***	-0.31	-0.31	0.29	-0.06	0.07	-0.24	0.07
IFWE	0.01	-0.20	-0.19	-0.21	-0.14	-0.23	0.20	-0.13	-0.12

** p < .01 (2-tailed)

* p < 0.05 (2 tailed)

Figure 31 illustrates the strength of the relationship between *Total remuneration* and *Company performance* components from 2006 to 2014.

Figure 31 *Total remuneration* and *Company performance* components

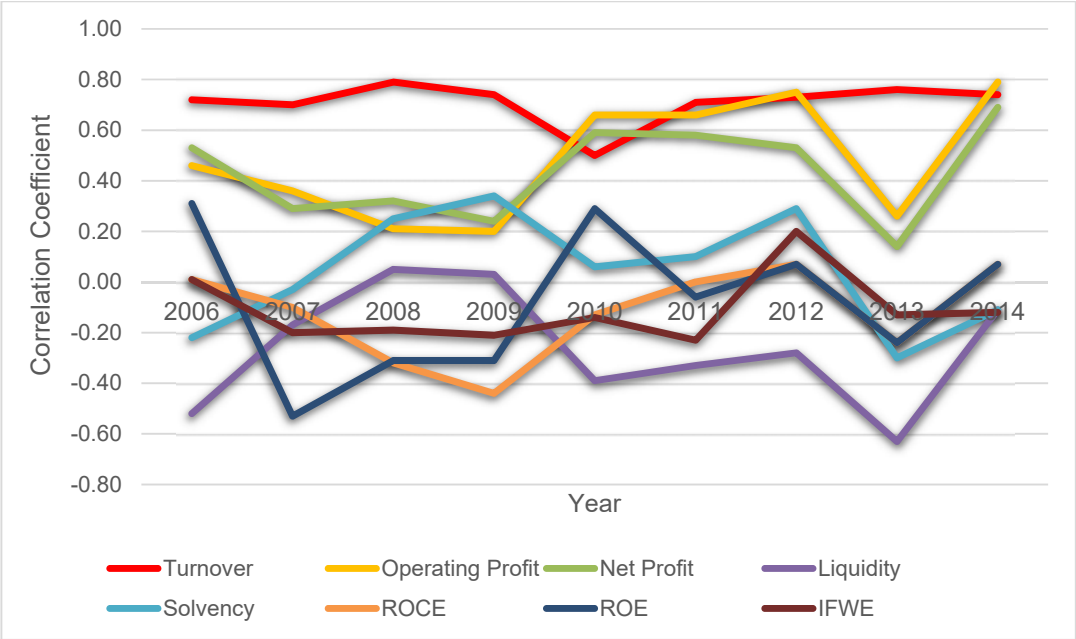


Figure 31 illustrates a fluctuation in the strength of the linear relationship between *Total remuneration* and the components of *Company performance*. In the case of *ROE*, it was noted that there was a sharp downward trend in the strength of the linear relationship during 2007. During the 2007/2008 financial year, *ROE* experienced a negative growth of 28%, while, at the same time, *Total remuneration* increased by 27%. Similarly, concurrent with a negative growth of 43% in *ROCE* from 2007 to 2009, *Total remuneration* increased by 44% during the same period. As with *Fixed pay*, there is again a sharp downward trend in the strength of the linear relationship between *Total remuneration* and the components of *Company performance* during 2013, and an upward trend in the strength of this relationship during 2014. Once again, *Turnover* showed the most stable trend with regard to the strength of the relationship.

Because *AO* was an ordinal variable, the statistical analysis to determine the relationship between *CEO remuneration* components and *AO* was run separately from those for the other *Company performance* components.

5.7.4 Relationship between *CEO remuneration* components and *AO*

The nonparametric Spearman's rank correlation coefficient was used to test whether there was a correlation between each of the three *CEO remuneration* components and *AO* over the nine-year period. Once again, correlation coefficients were used to chart the trend over the nine-year period. Table 32 shows the results for the period for the 18 SOEs.

Table 32 Correlation — *CEO remuneration* components and *AO*

	Fixed pay	STIs	Total remuneration
2006	-0.36	-0.10	-0.39
2007	-0.10	-0.33	-0.16
2008	-0.17	-0.15	-0.02
2009	-0.11	-0.29	-0.23
2010	-0.25	-0.26	-0.34
2011	-0.13	-0.24	-0.24
2012	-0.35	-0.11	**-0.52***
2013	-0.34	-0.32	-0.33
2014	**-0.55***	-0.42	**-0.55***

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

The results showed that there was a statistically significant strong, negative relationship between *Fixed pay* and *Total remuneration* with *AO* in some years ($r_{CEO\ total\ remuneration\_2012} = -0.52, p = 0.03$; $r_{CEO\ fixed\ salary2\ \ _{2014}} = -0.55, p = 0.02$; $r_{CEO\ total\ remuneration_{2014}} = -0.55, p = 0.02$). Throughout the nine years, there were differing degrees of correlation. In some cases, the correlation was stronger, and in other cases there was almost no or a negligible relationship. This means that poor *AOs* were associated with low *Fixed pay* and *Total remuneration*. The results indicated no statistically significant relationship between *STIs* and *AO* over the study period. Figure 32 shows the strength of the relationship between *CEO remuneration* components and *AO* for the period 2006 to 2014.

Figure 32 Correlation between *CEO remuneration* components and *AO*

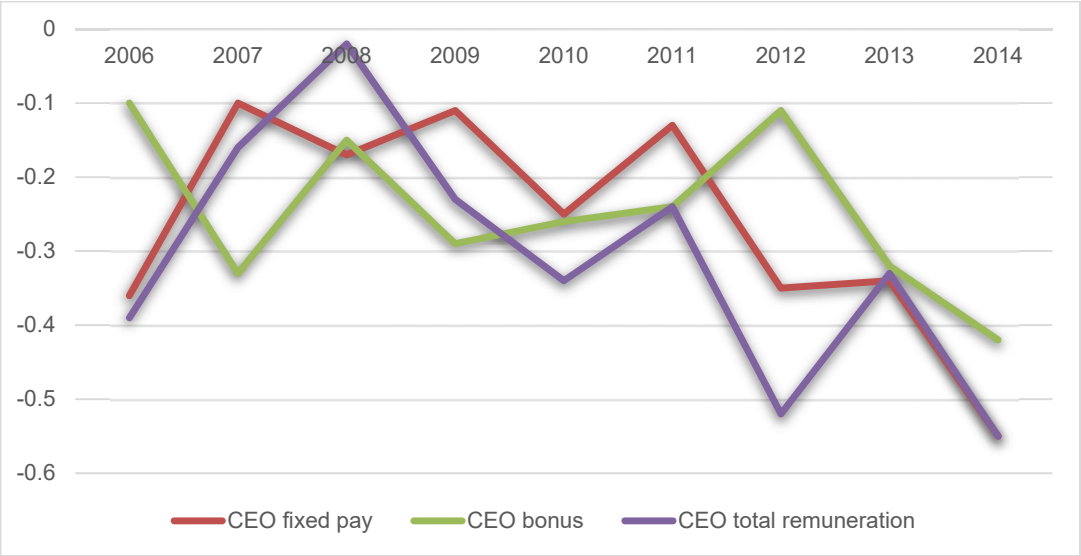


Figure 32 shows an unstable linear relationship between the components of *CEO remuneration* and *AO*. The figure further shows that there is no consistent positive trend across the nine-year period. This result may suggest that the CEOs' remuneration is determined without considering the AO. It is further clear that the relationships of *Fixed pay* and *Total remuneration* with *AO* declined from 2011, although the relationship of *Total remuneration* showed an improvement during the 2012/2013 financial year.

5.8 RESULTS OF RESEARCH QUESTION 3

The third research question aimed to determine the relationship between the components of *CEO remuneration* — *Fixed pay*, *STIs*, and *Total remuneration* — and components of *Organisational performance* for the periods 2006 to 2010 and 2011 to 2014. This was done to determine the potential effect of the financial crisis on *CEO remuneration*, and whether an increase in any of the *CEO remuneration* components, if any, was related to any of the components of *Company performance*. The years 2006 to 2007 were prior to the financial crisis. The years 2008 to 2009 can be considered the height of the financial crisis years, and the period 2010 to 2014 can be considered the aftermath (although, in 2011, the global economy felt the effects of the stock market fall).

According to Van Veen (2014), the Financial Crisis Inquiry Commission of the United States government, in their report, stated that the biggest turmoil in the financial markets started mid-2007 and ended at the beginning of 2009. However, the effects of the crisis took a few months to spread to South Africa. The effects of the financial crisis hit South Africa around June or July 2008, when the JSE devalued almost 20% in three months and, in the same period, the rand depreciated by 37% against the US dollar (Viegi 2008). Although the effects of the crisis eased in the following two years, 2009 and 2010, the consequences of the global financial collapse were still noticeable.

Once again, OLS multiple regression models were conducted on the relationship of the components of *Company performance* with *Fixed pay* and *Total remuneration* respectively. In all the models, the panel data analysis was run with *Fixed pay* and *Total remuneration* as the dependent variables, and the components of *Company performance* as the independent variables. Pearson's product-moment correlation coefficient analysis was performed to test whether there was a statistically significant correlation between *STIs* and the components of *Company performance*. As previously indicated, because a third of the SOEs had declared zero bonuses, it was not possible to make use of regression analysis in respect of *STIs.*

5.8.1 Relationship between *Fixed pay* and *Company performance* components for the periods 2006 to 2010 and 2011 to 2014

The regression model included 72 balanced panel observations and 18 cross-sectional units over a period of five years, due to the inclusion of the AR(1) term. All the *Company performance* components were used in Regression 1, the baseline model. Various iterations were run to determine the optimum final regression model for the period 2006 to 2010 (refer to Annexure E.3 for the different iterations). Model 8 was regarded as the optimum model, as will be discussed in subsequent paragraphs. The results of each individual regression model are presented in Table 33 (with the t-statistics in parentheses).

The DW test was used to detect autocorrelation. As can be seen in Table 33, the DW was 2.6, indicating no serious autocorrelation. The last regression, Model 8, was regarded as the optimum model, as the F-test statistic increased to 46.68,

indicating an optimal fit for the model. Further reduction of independent variables resulted in a decrease in the F-statistic and adjusted R^2 value. The optimum model explained 57% (adjusted R^2 = 0.57) of the variance in *Fixed pay*. The adjusted R^2 was higher than that of Model 1 (0.53), and the increase in the adjusted R^2 showed that this variable was the only independent variable included among the variables considered, and that it is statistically significant in predicting *Fixed pay* for the period 2006 to 2010. The increase in the adjusted R^2 showed that the model that included *Turnover* explained a higher amount of variation than the model that included all the components of *Company performance*.

Table 33 Regression — *Fixed pay* and *Company performance* components (2006 to 2010)

Dependent variable: Fixed pay								
Models	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Constant	2 478 817.00	2 476 152.00	2 476 627.00	2 490 376.00	2 496 220.00	2 501 185.00	2 416 219.00	2 454 341.00
	(6.88)	(7.02)	(7.04)	(7.31)	(7.41)	(7.40)	(9.38)	(8.90)
AR(1)	0.54	0.54	0.54	0.54	0.54	0.54	0.55	0.58
	(5.07)	(5.13)	(5.24)	(5.30)	(5.32)	(5.40)	(5.54)	(6.11)
Turnover	**353 000.00***	**353 000.00***	**353 000.00***	**352 000.00***	**359 000.00***	**318 000.00***	**379 000.00***	**361 000.00***
	(2.65)	**(2.67)**	**(2.70)**	**(2.72)**	**(2.87)**	**(3.48))**	**(3.46)**	**(3.19)**
OP	301 000.00	306 000.00	290 000.00	295 000.00	166 000.00			
	(0.40)	(0.41)	(0.40)	(0.41)	(0.38)			
NP	-8 880 000.00	-9 150 000.00	-8 700 000.00	-8 900 000.00				
	(-0.22)	(-0.23)	(-0.22)	(-0.23)				
LR	-4 755.16.00							
	(-0.22)							
SR	-38 462.60	-29 531.79	-41 288.12	-43 042.58	-44 364.28	-40 497.54		
	(-0.32)	(-0.40)	(-0.40)	(-0.43)	(-0.44)	(-0.41)		
ROCE	-30 123.22	-29 531.79						
	(-0.10)	(-0.10)						
ROE	-227 824.40	-226 683.70	-226 046.00	-225 606.10	-243 348.00	-209 075.00	-205 925.40	
	(-0.79)	(-0.79)	(-0.80)	(-0.80)	(-0.81)	(-0.83)	(-0.82)	
IFWE	0.00	0.00	0.00					
	(0.18)	(0.18)	(0.17)					
F-statistic	**9.98**	**11.41**	**13.25**	**15.68**	**19.08**	**24.13**	32.51	48.68
(*p*-value)	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	(0.00)	(0.00)
DW stat	2.61	2.61	2.62	2.63	2.64	2.62	2.63	2.64
R^2	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
Adjusted R^2	**0.53**	**0.54**	**0.55**	**0.55**	**0.56**	**0.57**	0.57	0.57
Inverted AR roots	0.54	0.54	0.54	0.54	0.54	0.54	0.55	0.58

Table 34, below, provides a summary of the results of the regression analysis of the relationship between *Fixed pay* and the components of *Company performance* for the period 2011 to 2014. The regression model included 70 balanced panel observations and 18 cross-sectional units over a period of four years. Once again, all the components of *Company performance* were included in the first regression model. Six various regression iterations were run to determine the optimum final regression model. Refer to Annexure E.4 for the different regression iterations. Model 6 was regarded as the optimum model, as will be discussed in subsequent paragraphs. As can be seen from Table 34, the DW was 3, still indicating no serious autocorrelation.

Table 34 Regression — *Fixed pay* and *Company performance* components (2011 to 2014)

Dependent variable: *Fixed pay*						
Models	**1**	**2**	**3**	**4**	**5**	**6**
Constant	2 539 841.00 (4.53)	2 549 470.00 (4.66)	2 447 136.00 (5.05)	2 511 930.00 (5.25)	2 520 434.00 (5.32)	2 557 187.00 (5.47)
AR (1)	0.64 (2.98)	0.64 (6.06)	0.65 (6.26)	0.66 (6.69)	0.67 (6.85)	0.67 (6.85)
Turnover	**320 000.00* (3.08)**	**319 000.00* (3.11)**	**323 000.00* (3.16)**	**351 000.00* (3.75)**	**345 000.00* (3.81)**	**346 000.00* (3.85)**
OP	981 000.00 (0.68)	976 000.00 (0.68)	928 000.00 (0.66)			
NP	-0.000123 (-0.72)	-0.000123 (-0.72)	-0.000120 (-0.71)	-1.24 (-0.29)		
LR	21 575.90 (1.55)	215 090.90 (1.56)	188 999.70 (1.64)	178 166.90 (1.59)	176 583.90 (1.60)	17 3260.10 (1.57)
SR	-67 223.29 (-0.36)	-68 709.25 (-0.38)				
ROCE	118 507.70 (0.69)	117 255.30 (0.69)	119 753.00 (0.72)	113 021.70 (0.68)	112 537.30 (0.69)	
ROE	-18 732.71 (-0.12)					
IFWE	-0.000138 (-1.08)	-0.000139 (-1.10)	-0.000147 (-1.21)	-0.000167 (-1.46)	-0.000165 (-1.45)	-0.000171 (-1.51)
F-statistic (*p*-value)	12.38 (0.00)	14.25 (0.00)	16.59 (0.00)	19.52 (0.00)	23.87 (0.00)	30.06 (0.00)
DW stat	2.91	2.92	2.93	2.99	3.03	3.00
R^2	0.72	0.72	0.72	0.72	0.72	0.71
Adjusted R^2	0.66	0.67	0.68	0.68	0.69	0.69

Note: (i) Coefficients reported with t-statistics in parenthesis; and (ii) Unstandardized beta coefficients are presented * indicates significance at the 5% level.

Model 6, shown in Table 34, above, was regarded as the optimum model, due do the increase in the F-statistic to 30.06, in conjunction with an improvement of the adjusted R^2 value (0.69). Further reduction of the independent variables resulted in a decrease in the F-statistic and the adjusted R^2 value. The optimum model indicated that 69% of the variance in *Fixed pay* for the period 2011 to 2014 was explained by *Turnover*, *LR*, and *IFWE*. The increase in the adjusted R^2 indicated that these variables were the optimal set of independent variables in predicting *Fixed pay* for the period 2011 to 2014.

5.8.2 Relationship between *STIs* and *Company performance* components for the periods 2006 to 2010 and 2011 to 2014

The correlations of *STIs* with the components of *Company performance* for the entire period were provided in Table 30, Section 5.5.2. The researcher used the same correlations to discuss Research Sub-question 3.2, which refers to the periods 2006 to 2010 and 2011 to 2014 (before and after the financial crisis). From Table 30, it is clear that there was a moderate to strong statistically significant positive relationship between *STIs* and ***Turnover*** ($r_{Turnover_{2006}} = 0.63, p = 0.02$; $r_{Turnover_{2007}} = 0.77, p = 0.01$. Further, it is clear that there was a moderate, statistically negative relationship between *STIs* and ***LR***, ***ROE***, and ***ROCE*** ($r_{Liquidity_{2006}} = -0.62, p = 0.02$; $r_{ROE_{2007}} = -0.64, p = 0.01$; $r_{ROCE_{2009}} = -0.59, p = 0.01$; $r_{ROE_{2009}} = -0.64; p = 0.02$ for the period 2006 to 2010.

For the period 2011 to 2014, there were strong to very strong statistically significant positive relationships between *STIs* and the *Company performance* components ***Turnover***, ***OP***, and ***NP*** $\left(r_{Turnover_{2014}} = 0.79, p = 0.01; r_{Operating\ Profit_{2012}} = 0.71, p = 0.01; \quad r_{Operating\ Profit_{2014}} = 0.82, p = 0.00; r_{Net\ Profit_{2014}} = 0.86, p = 0.00\right)$. During the same period, there was a very strong, statistically negative relationship between *STIs* and ***ROCE*** ($r_{ROCE\ \ _{2013}} = -0.70, p = 0.03$). Interestingly, there was no statistically significant relationship between *STIs* and any of the components of *Company performance* in the period 2010 to 2011.

5.8.3 Relationship between *Total remuneration* and *Company performance* components for the periods 2006 to 2010 and 2011 to 2014

The regression model included 70 balanced panel observations and 18 cross-sectional units over a period of five years. Six iterations were run to determine the optimum final regression model for *Total remuneration*. Refer to Annexure E.5 for the different iterations. The results of each individual regression model for the period 2006 to 2010 are summarised and presented in Table 35, below, (with the t-statistics in parentheses). All the company performance measures were used in Regression 1, the baseline model.

Table 35 Regression — *Total remuneration* and *Company performance* components (2006 to 2010)

Dependent variable: *Total remuneration*						
Models	**1**	**2**	**3**	**4**	**5**	**6**
Constant	4 537 979.00	4 357 463.00	4 245 834.00	4 213 653.00	3 954 614.00	4 247 169.00
	(3.96)	(4.59)	(4.75)	(4.89)	(5.60)	(6.99)
AR (1)	0.73	0.73	0.73	0.72	0.69	0.68
	(7.63)	(8.27)	(8.22)	(8.04)	(7.90)	(7.71)
Turnover	-250 000.00	-249 000.00	-226 000.00	-221 000.00		
	(-0.75)	(-0.76)	(-0.71)	(-0.70)		
OP	**0.000414***	**0.000409***	**0.000405***	**0.000421***	**0.000383***	**0.000361***
	(2.56)	**(2.61)**	**(2.60)**	**(2.80)**	**(2.73)**	**(2.62)**
NP	**-0.000205***	**-0.000204***	**-0.000201***	**-0.000204***	**-0.000188***	**-0.000175***
	(-2.33)	**(-2.55)**	**(-2.53)**	**(-2.59)**	**(-2.47)**	**(-2.33)**
LR	171 366.60	149 619.70	149 407.10	148 583.40	143 712.50	
	(0.96)	(0.92)	(0.93)	(0.93)	(0.92)	
SR	-96 199.69					
	(-0.35)					
ROCE	299 364.00	310 308.00	273 949			
	(0.56)	(0.59)	(0.53)			
ROE	-13 464.73					
	(-0.03)					
IFWE	-0.001082	-0.001953				
	(-0.54)	(-0.52)				
F-statistic	**10.48**	**13.87**	**16.33**	**19.76**	**24.80**	**32.87**
(*p*-value)	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**
DW stat	2.51	2.50	2.46	2.46	2.47	2.46
R^2	0.61	0.61	0.61	0.61	0.60	0.60
Adjusted R^2	**0.55**	**0.57**	**0.57**	**0.58**	**0.58**	**0.58**
Inverted AR roots	0.73	0.73	0.73	0.72	0.69	0.68

Note: (i) Coefficients reported with t-statistics in parenthesis; and (ii) Unstandardized beta coefficients are presented

* indicates significance at the 5% level.

The last regression model (Model 6), shown in Table 35, was regarded as the optimum model, as the F-statistic increased to 32.87, in conjunction with an improvement of the adjusted R^2 value. Further reduction of the independent

variables resulted in a decrease in the F-statistic and the adjusted R^2 value. The optimum model indicated that 58% (adjusted R^2 = 0.58) of the variance in *Total remuneration* was explained by *OP and NP*. The results clearly showed that there is a strong positive relationship between *Total remuneration* and *OP*, and a strong negative relationship between *Total remuneration* and *NP* for the period 2006 to 2010. Both these *Company performance* components showed a statistically significant relationship.

Table 36 provides the results of the regression analysis for the period 2011 to 2014. The regression model included 53 unbalanced panel observations and 18 cross-sectional units over a period of four years. Various iterations were run to determine the optimum final regression model. Refer to Annexure E.6 for the different iterations. The results of each individual regression model for the period 2006 to 2010 are summarised and presented in Table 36, below (with the t-statistics in parentheses). All the *Company performance* components were used in Regression 1, the baseline model. As can be seen in Table 36, the DW test statistic was relatively far above the threshold of 2.5, i.e. between 3.39 and 3.41, indicating negative serial correlation.

Table 36 Regression — *Total remuneration* and *Company performance* components (2011 to 2014)

Dependable variable: *Total remuneration*				
Models	**1**	**2**	**3**	**4**
Constant	5 615 339.00	5 533 097.00	5 366 363.00	6 068 994.00
	(3.45)	(3.57)	(3.82)	(5.60)
AR(1)	0.76	0.76	0.76	0.77
	(7.52)	(7.58)	(8.00)	(9.04)
Turnover	112 000.00	154 000.00	153 000.00	
	(0.40)	(0.58)	(0.58)	
OP	490 000.00			
	(0.15)			
NP	662 000.00			
	(0.02)			
LR	195 518.40	180 448.90	141 505.10	
	(0.67)	(0.64)	(0.59)	
SR	-152 083.70	-108 479.40		
	(-0.36)	(-0.26)		

Dependable variable: *Total remuneration*				
Models	**1**	**2**	**3**	**4**
ROCE	-625 030.20	-619 048.30	-614 510.10	-616 921.10
	(-1.68)	(-1.69)	(-1.71)	(-1.74)
ROE	289 099.10	323 082.40	316 546.90	333 883.70
	(0.94)	(1.08)	(1.07)	(1.17)
IFWE	**-0.000426***	**-0.000449***	**-0.000460***	**-0.000478***
	(-1.66)	**(-1.83)**	**(-1.93)**	**(-2.06)**
F-statistic	**9.97**	**13.21**	**15.71**	**24.13**
(*p*-value)	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**
DW stat	3.39	3.38	3.34	3.41
R^2	0.68	0.67	0.67	0.67
Adjusted R^2	**0.61**	**0.62**	**0.63**	**0.64**
Inverted AR roots	0.76	0.76	0.76	0.77

Note: (i) Coefficients reported with t-statistics in parenthesis; and (ii) Unstandardized beta coefficients are presented
* indicates significance at the 5% level.

The last regression model, Model 4, shown in Table 36, was regarded as the optimum model, as the F-statistic increased to 24.13, in conjunction with an improvement of the adjusted R^2 value. Further reduction of the independent variables resulted in a decrease in the F-statistic and the adjusted R^2 value. The optimum model indicated that 64% of the variance in *Total remuneration* for the period 2011 to 2014 was explained by *ROCE*, *ROE*, and *IFWE.* This suggests that *ROCE*, *ROE*, and IFWE constituted the best set of independent variables for predicting *Total remuneration* for the period 2011 to 2014. However, only the *p*-value of *IFWE* was statistically significant ($p < 0.05$), and was negative, suggesting a stronger relationship between *Total remuneration* and this variable for the period 2011 to 2014.

5.9 RESULTS OF RESEARCH QUESTION 4

Research Question 4 aimed to determine whether the relationship between the components of *CEO remuneration* and the components of *Company performance* in the optimal model would change if the demographic variables of the CEOs were included. The demographic variables investigated were: *Age*, *Education*, *Race, Tenure*, and *Gender*. To answer the research question, the analysis of the data for *Fixed pay* and *Total remuneration* was conducted, using pooled OLS regression.

The following applied to all the regressions: Firstly, the actual age of the CEO was used. Secondly, dummy variables were introduced for *Race* and *Education*. As

there were four categories of *Race* and of *Education* (k = 4), *Race* and *Education* had to be represented with three dummy variables (k-1 = 3). *White* was used as a reference category. The following therefore applied in terms of *race*:

$$Dumrace1 = Black\ African$$
$$Dumrace2 = Coloured$$
$$Dumrace3 = Indian$$

With regard to *education*, *Bachelor's degree* was used as a reference category. The following applied in terms of education:

$$Qual2_{Dum} = Honours\ degree$$
$$Qual3_{Dum} = Master's\ degree$$
$$Qual4_{Dum} = Doctorate$$

In order to determine the relationship between *STIs* and *CEO demographic variables*, the mean of *STIs* per demographic category was used for the nine-year period.

5.9.1 Relationship between *Fixed pay* and *CEO demographic variables*

The first multiple regression performed (baseline model) was run with the *Company performance* components that were found to have an effect on *Fixed pay*. Thus, the optimum model, presented in Table 25, where *Turnover*, *NP*, and *IFWE* (as independent variables) had an influence on *Fixed pay* was used as a baseline model. The regression model included 144 balanced panel observations and 18 cross-sectional units over a period of nine years, due to the inclusion of the AR(1) term. Three different iterations were run to determine the optimum final regression model. Refer to Annexure E.7 for the different iterations. The results of each individual regression model are summarised and presented in Table 37, below. As can be seen from Table 37, the DW test statistic was 2.6, indicating no serious serial correlation.

Table 37 Regression — *Fixed pay* and *CEO demographic variables*

Dependable variable: *Fixed pay*			
Models	**1**	**2**	**3**
Constant	4 031 843.00	4 265 769.00	4 446 008.00
	(2.30)	(2.54)	(2.66)
AR (1)	0.87	0.87	0.88
	(16.38)	(17.19)	(18.18)
Turnover	142 000.00	131 000.00	121 000.00
	(1.46)	(1.42)	(1.31)
NP	-534 000.00	-537 000.00	-535 000.00
	(-4.25)	(-4.34)	(-4.36)
IFWE	-207 000.00		
	(-0.31)		
Gender	**-830 136.50***	**-824 878.40***	**-826 086.40***
	(-3.70)	**(-3.77)**	**(-3.79)**
Age	**-12 215.48***	**-18 531.44***	**-18 614.95***
	(-0.43)	**(-0.78)**	**(-0.78)**
Dummy race_Black African	1 049 664	113 0413	109 2078
	(1.81)	(2.06)	(2.03)
Dummy race_Coloured	**1 582 107.00***	**1 672 238.00***	**1 638 475.00***
	(2.21)	**(2.45)**	**(2.43)**
Dummy race_Indian	985 706.10	1 196 152	
	(0.39)	(0.48)	
Tenure	**188 522.60***	**189 360.30***	**189 213.80***
	(4.61)	**(4.81)**	**(4.84)**
Dummy education_Honours degree	**-940 228.40***	**-838 771.50***	**-869 831.60***
	(-1.89)	**(-2.38)**	**(-2.52)**
Dummy-education_Master's degree	-361 900.60	-329 068.20	-332 891.10
	(-1.42)	(-1.40)	(-1.43)
Dummy education_Doctorate	-291 791.30		
	(-0.37)		
F-statistic	**31.95**	**38.38**	**42.52**
(*p*-value)	**(0.00)**	**(0.00)**	**(0.00)**
DW stat	2.64	2.63	2.65
R^2	0.80	0.80	0.80
Adjusted R^2	**0.773**	**0.777**	**0.778**

Note: (i) Coefficients reported with t-statistics in parenthesis; and (ii) Unstandardized beta coefficients are presented

* indicates significance at the 5% level.

The last regression model, Model 3, presented in Table 37, was regarded as the optimum model, as the F-statistic increased to 42.52, in conjunction with an improvement of the adjusted R^2 value. Further reduction of the independent variables resulted in a decrease in the F-statistic and the adjusted R^2 value. The optimum model indicated that 78% (adjusted R^2 = 0.78) of the variance in *Fixed pay*, over and above the *Company performance* components *Turnover* and *NP*, is

explained by *Gender, Race* (in terms of *Coloured* CEO), *Tenure*, *Age*, and *Education* (in terms of *Honours degree*). The increase in the adjusted R^2 value indicated that these variables were the optimal set of independent variables among the variables considered in predicting *Fixed pay*. Interestingly, including *CEO demographic variables* in the regression model led to *IFWE* no longer having an effect on *Fixed pay.*

From these findings, it is clear there are relationships between *Fixed pay* and *CEO demographic variables*, i.e. *Gender*, *Race*, *Tenure*, *Age*, and *Education*. The results imply that:

- There is a statistically significant negative relationship between *Fixed pay* and *Gender*, at the 5% level of significance. This result suggests that male CEOs earn more than female CEOs.
- There is a statistically significant negative relationship between *Fixed pay* and *Education* (with reference to CEOs with a bachelors' degree), at the 5% level of significance. This suggests that CEOs with an honours degree earn less than CEOs with a bachelor's degree.
- There is a statistically significant negative relationship between *Fixed pay* and *Age*, at the 5% level of significance. This suggests that as CEOs gets older, the lower the fixed pay becomes.
- There is statistically significant positive relationship between *Fixed pay* and *Tenure*. This suggests that as a CEO's tenure increases, his or her fixed pay will increase accordingly.
- There is a statistically significant positive relationship between *Fixed pay* and *Race* (with reference to Coloured CEOs). The result suggests that Coloured CEOs earn more than white CEOs. Although not statistically significant, the results also suggest that black African CEOs earn more than white CEOs.

The results further suggest that the variables that have statistical significance ($p < 0.05$) have a stronger relationship with *Fixed pay* than the other variables.

5.9.2 Relationship between *STIs* and *CEO demographic variables*

The relationship between *STIs* and *CEO demographic variables* are discussed in the following paragraphs.

5.9.2.1 Gender

To answer the question whether there is relationship between *STIs* and *Gender*, a Mann-Whitney test (non-parametric method) to test for significant differences was used. This method is appropriate when the sample is small, or if the data type is ordinal (Coast, Field, Cobb, & Scarborough 2016). Table 38 shows the results for *Gender*.

Table 38 Relationship between *STIs* and *Gender*

	STIs
Mann-Whitney U	171.50
Asymp. Sig. (2-tailed)	0.82

The Mann-Whitney test revealed no statistically significant difference between male and female CEOs with regard to STIs.

5.9.2.2 Education

To answer the question whether there is a relationship between *STIs* and *Education*, the Spearman rank order correlation test (non-parametric) was used. Table 39 shows the results.

Table 39 Correlation — *STIs* and *Education* (*n* = 162)

		Education	***STIs***
STIs	Correlation coefficient	-0.16	1.00
	Sig. (2-tailed)	0.40	

*Correlation is significant at the 0.05 level (2-tailed)

Based on the results, there was no statistically significant correlation between *STIs* and *Education* (r_s = -0.16, *n* = 162, *p* = 0.40). This suggests that a change in the CEO's education would not lead to an increase or decrease in his or her STIs.

5.9.2.3 Age and Tenure

To answer the question whether *STIs* has a relationship with *Age* and *Tenure* respectively, a Pearson product moment correlation test (parametric test) was used. Table 40 shows the results.

Table 40 Correlation — *STIs*, *Age*, and *Tenure*

		STIs	***Age***	***Tenure***
STIs	Pearson correlation	1	-0.01	**0.10***
	Sig. (2-tailed)		0.90	0.23
	N	162	139	162

*Correlation is significant at the 0.05 level (2-tailed)

The results showed a weak positive correlation between *STIs* and *Tenure* ($r = 0.10$, $n = 162$, $p < 0.23$). The results further indicated that there was almost no linear relationship between *STIs* and *Age*.

5.9.2.4 Race

To answer the question whether there is a relationship between *STIs* and *Race* an independent sample t-test was used to compare the mean scores of black African and white CEOs. There was not enough data on Indian (3.8%) and Coloured (8%) CEOs to perform the t-test. Table 41 shows the results.

From the results of the independent-sample t-test it is clear that there was no significant difference in scores for black African ($M = 1059062.51$, $SD = 1288167$, 24) and white CEOs ($M = 1183810.35$, $SD = 1564098.66$). There is therefore not a statistically difference in the mean *STI* scores for black African and white CEOs.

Table 41 Independent Sample t-test — *STIs* and *Race*

		Levene's Test for Equality of Variance		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence interval of the Difference	
									Lower	Upper
CEO STI	Equal variance assumed	3.81	0.53	-0.46	142	0.65	-124747.87	271246.46	-660950.86	411455.13
	Equal variance not assumed			-0.41	43.72	0.68	-124747.87	302102.62	-733705.39	484209.65

5.9.3 Relationship between *Total remuneration* and *CEO demographic variables*

The baseline model was run with the *Company performance* components that were found to have an effect on *Total remuneration*, presented in Table 26, namely *OP*, *NP*, *LR*, *ROCE*, and *IFWE* (as independent variables). *Race* and *Education* were introduced by means of dummy variables, where *White* and *Bachelor's degree* were used as reference categories. The regression model included 142 unbalanced panel observations and 18 cross-sectional units over a period of nine years. Three various iterations were run to determine the optimum final regression model. Refer to Annexure E.8 for the different iterations. The results of each individual regression model are summarised and presented in Table 42. As can be seen from Table 42, the DW test statistic was 2.8, indicating no serious serial correlation.

Table 42 Regression — *Total remuneration* and *CEO demographic variables*

Dependable variable: *Total remuneration*			
Models	**1**	**2**	**3**
Constant	3 989 296.00	3 730 910.00	4 203 129.00
	(1.02)	(3.38)	(4.91)
AR (1)	0.79	0.78	0.77
	(13.03)	(14.60)	(15.02)
OP	0.000303	0.000303	0.000319
	(3.40)	(3.77)	(4.09)
NP	-0.000197	-0.000198	-0.000203
	(-3.62)	(-3.91)	(-4.07)
LR	168 311.70	143 818.30	144 143.40
	(1.10)	(1.34)	(1.36)
IFWE	-0.000134	-0.000158	-0.000164
	(-0.85)	(-1.17)	(-1.22)
Age	-24 293.21		
	(-0.36)		
Dummy race_Black	1 993 107.00	819 211.10	565 025.30
	(1.52)	(1.31)	(1.10)
Dummy race_Coloured	1 921 269.00	713 627.0	
	(1.16)	(0.72)	
Dummy_Indian	1 975 257.00	-364 665.30	
	(0.53)	(-0.25)	
Dummy_education_Honours	-525 595.90	-656 805.10	-765 780.50
degree	(-0.47)	(-1.08)	(-1.39)
Dummy_education_Master's	**-1 524 025.00***	**-1 003 480.00***	**-1 015 987.00***
degree	**(-2.41)**	**(-2.19)**	**(-2.24)**
Dummy_education_Doctorate	164 361.20		
	(0.09)		

Dependable variable: Total remuneration			
Models	**1**	**2**	**3**
Gender	**256 702.70**	**270 503.40**	
	(-0.36)	**(0.57)**	
Tenure	**224 415.10***	**192 484.10***	**182 116.60***
	(2.41)	**(2.97)**	**(2.95)**
F-statistic	**16.84**	**24.40**	**33.00**
(***p***-value)	**(0.00)**	**(0.00)**	**(0.00)**
DW stat	2.86	2.79	2.79
R^2	0.70	0.69	0.69
Adjusted R^2	**0.66**	**0.67**	**0.67**

Note: (i) Coefficients reported with t-statistics in parenthesis; and (ii) Unstandardized beta coefficients are presented * indicates significance at the 5% level.

Model 3, shown in Table 42, was regarded as the optimum model, as the F-statistic increased to 33.00, in conjunction with and improvement of the adjusted R^2 value. The optimum model indicated that 67% (adjusted R^2 = 0.67) of the variance in *Total remuneration*, in addition to *OP*, *NP*, *LR*, and *IFWE*, was explained by the *CEO demographic variables* Race, *Education*, *and Tenure*. The increase in the adjusted R^2 value indicated that these constituted the optimal set of independent variables among the variables considered in predicting *Total remuneration*.

From these findings, it is clear that, in addition to the relationship between *Total remuneration* and *OP*, *NP*, LR, and *IFWE*, respectively, there is also a relationship between each of the variables *Race, Tenure, and Education* (respectively) and *Total remuneration*.

With regard to the research question whether total remuneration is influenced by variables such as age, education, tenure, and race of the CEO, the results in Table 42 indicate the following:

- There is a statistically significant negative relationship between *Total remuneration* and *Education* (specifically with regard to a Master's degree), at the 5% significance level. There can be various explanations for this, which will be discussed in more detail in the next chapter.
- There is a statistically significant positive relationship between *Total remuneration* and *Tenure*, at the 5% significance level.

- Although not statistically significant, black African CEOs earn more than white CEOs.

The results further suggest that the variables that showed a statistical significance ($p < 0.05$) had a stronger relationship with *Total remuneration* than the other variables.

5.10 RESULTS OF RESEARCH QUESTION 5

Research Question 5 aimed to determine whether there is a relationship between *CEO remuneration* components and *Company size*.

Company size was included as a dummy variable in the regression analysis, with *Medium company* used as reference category, as none of the entities fell into the classification of *Small* company. The researcher applied the following categorisation:

$$3 = Large\ company$$
$$4 = Very\ large\ company$$

5.10.1 Relationship between *Fixed pay* and *Company size*

Because company size could have an impact on fixed pay, the researcher added *Company size* to the pooled regression model. The regression model included 119 unbalanced panel observations and 17 cross-sectional units over a period of nine years, due to the inclusion of the AR(1) term. The regression model was run with the optimum model, presented in Table 37, and included *Company size* as dummy variable. *Company size* had four classifications: *Small*, *Medium*, *Large*, and *Very large company*. As there were four organisational sizes (k = 4), the study made use of three dummy variables (k − 1 = 3). As none of the SOEs fell in the *Small* category (based on the guideline provided in Table 11), *Company size 2* (*Medium*) was used as reference category. *Dum_Size3* represented *Large company* and *dum-Size4* represented *Very large company*. The results of the optimum model of the pooled multiple regression analysis are presented in Table 43, below.

Table 43 Regression analysis — *Fixed pay* and *Company size*

Dependent variable: *Fixed pay* **Sample (adjusted): 2007 – 2014** **Periods included: 8** **Cross-sections included: 17** **Total unbalanced panel observations: 119**				
Variable	**Beta coefficient**	**Std. error**	***t*-statistic**	***p*-value**
Constant	3 042 350.00	2 945 625.00	1.03	0.30
AR (1)	0.88	0.05	17.68	0.00
Turnover	117 000.00	933 000.00	1.25	0.21
NP	**-534 000.00**	**124 000.00**	**-4.31**	**0.00**
Gender	**-812 027.30**	**226 824.40**	**-3.58**	**0.00**
Age	-17 754.29	24 006.44	-0.74	0.46
Dummy race_Black African	1 108 575.00	544 624.00	2.04	0.04
Dummy race_Coloured	**1 707 985.00**	**690 058.10**	**2.48**	**0.01**
Tenure	**189 376.20**	**39 395.50**	**4.81**	**0.00**
Dummy education_Honours degree	**-884 876.80**	**349 286.10**	**-2.53**	**0.01**
Dummy education_Master's degree	-349 589.90	240 623.70	-1.45	0.15
Dummy size_Large company	1 413 989.00	2 452 275.00	0.58	0.57
Dummy size_Very large company	1 368 887.00	2 434 449.00	0.56	0.58
Weighted statistics				
R-squared				0.79
Adjusted R-squared				**0.775**
F-statistic				**34.91**
Prob (F-statistic)				0.00
DW stat				2.64

* indicates significance at the 5% level.

The results in Table 43 indicate that 77% (adjusted R^2 = 0.77) of the variance in *Fixed pay* can, in addition to *NP*, be attributed to some *CEO demographic variables*. Similar to the results in Table 42, the *CEO demographic variables* that have an effect on *Fixed pay* are *Gender*, *Race* (in terms of Coloured CEOs), *Tenure*, and *Education* (in terms of an Honours degree). The adjusted R^2 was slightly lower than that of the optimum model presented in Table 37. This indicated that the variable added to the model, namely *Company size*, did not contribute to explaining the

variance in *Fixed pay*, given the other independent variables. This model therefore indicated that *Company size* is not a statistically significant predictor of *Fixed pay*. Interestingly, when adding *Company size* to the analysis, *Turnover* did not contribute significantly to *Fixed pay*.

5.10.2 Relationship between *Company size* and *STIs*

A nonparametric Spearman's rank correlation coefficient was used to test whether there was a correlation between *Company size* and *STIs*. Table 44 lists the correlations between *STIs* and *Company size* for the period 2006 to 2014.

Table 44 Correlation — *STIs* and *Company size*

		Company size
STIs	Spearman's rho	0.46**
	Sig. (2-tailed)	0.00
	N	108

** Correlation is significant at the 0.01 level (2-tailed)

Based on the results, there was a strong positive correlation between *STIs* and *Company size* ($r = 0.46$, $n = 108$, $p < 0.00$) during the period under study.

5.10.3 Relationship between *Total remuneration* and *Company size*

A regression analysis was performed with the optimum model presented in Table 41, with *Company size* included as a dummy variable. The *Company size* variables were four classifications of SOEs: *Small*, *Medium*, *Large*, and *Very large*. Because there were four sizes (k=4), the researcher had to make use of three dummy variables (k − 1=3). None of the SOEs fell in the *Small* category; therefore, *Company size 2* (*Medium*) was used as a reference category. *Dum_Size3* represented *Large company*, and *Dum_size4* represented *Very large company*. The results of the pooled multiple regression analysis are presented in Table 45, below.

The regression model included 142 unbalanced panel observations across 18 cross-sectional units over a period of nine years, due to the inclusion of the AR(1) term. Two different iterations were run with *Company size* as a dummy variable, in order to determine the optimum final regression model. Refer to Annexure E.9 for

the different iterations. The results of each individual regression model are summarised and presented in Table 45. As can be seen from Table 45, the DW test statistic was 2.7, indicating no serious serial correlation.

Table 45 Regression analysis — *Total remuneration* and *Company size*

Dependent variable: *Total remuneration*		
Models	**1**	**2**
Constant	2 307 917.00 (1.26)	3 781 641.00 (5.50)
AR(1)	0.70 (12.10)	0.71 (12.40)
OP	**0.000285*** **(3.32)**	**0.000286*** **(3.64)**
NP	**-0.000185*** **(-3.54)**	**-0.000186*** **(-3.57)**
LR	123 038.30 (1.13)	132 127.40 (1.22)
ROCE	-292 645.30 (-1.09)	-286 912.00 (-1.07)
IFWE	-0.000156 (-1.12)	-0.000154 (-1.11)
Dum_Large company	1 649 044.00 (0.85)	
Dum_Very large company	2 796 956.00 (1.48)	1 263 352.00 (1.81)
F-statistic (***p***-value)	**33.32** **(0.00)**	**38.06** **(0.00)**
DW stat	2.73	2.74
R^2	**0.68**	**0.67**
Adjusted R^2	0.6471	0.6478

Note: (i) Coefficients reported with *t*-statistics in parenthesis; and (ii) Unstandardized beta coefficient are presented

* Significance at the 5% level

The last regression model, Model 2, was regarded as the optimum model, as the F-statistic increased to 38.06. The optimum model indicated that 65% (adjusted R^2 = 0.65) of the variance in *Total remuneration*, over and above the components of *Company performance*, was explained by *Company size*. One may therefore infer that company size affects CEOs' total remuneration, with reference to very large South African SOEs. However, the *p*-value of *Company size* (*Very large company*) was not statistically significant at the 5% level ($p > 0.05$), suggesting a weaker relationship between *Total remuneration* and *Company size* in very large SOEs.

5.11 CHAPTER SUMMARY

This chapter discussed the research results. The descriptive statistics for the components of *CEO remuneration* revealed that CEOs' fixed salaries increased by a total of 82% during the study period, with the lowest increase (3%) during the 2009/2010 financial year. The negative growth in fixed pay during some years seems to reflect the trend in some of the components of *Company performance*. On the other hand, *Total remuneration* increased by 93% over the study period, with the largest increase (35%) during the 2006/2007 financial year. The results indicated that *Total remuneration* fluctuated during the study period. Conversely, *STIs* declined by 29% over the nine-year period, with an average year-on-year decline of 4%. Further, a decline was found in *STIs* from 2010, indicating that STIs were not guaranteed for the sampled CEOs. The decline in *STIs*, accompanied by the decline in *Fixed pay* over the study period is a cause for concern, and will be discussed further in Chapter 6.

The descriptive statistics for the components of *Company performance* indicated that the results of the performance-based measures were volatile in the period under study, except for *Turnover.* Further, analysis revealed a downward trend in *NP*, *OP*, *SR*, and *ROE* means from 2007 to 2010, indicating the effects of the economic recession on performance of SOEs, and, therefore, shareholders' returns.

In answering Research Question 1, the results of the regression analysis revealed that *Fixed pay* had a relationship with *Turnover*, *NP*, and *IFWE*. As expected, there was a negative relationship with *NP* and *IFWE*. However, only the *p*-values of *NP* and *Turnover* were statistically significant, suggesting a stronger relationship. Correlational analysis indicated a statistically weak negative relationship between *STIs* and *Turnover*, a weak to strong positive relationship between *STIs* and *OP*, and a weak to strong negative relationship between *STIs* and *NP*.

The results further revealed a relationship between *Total remuneration* and *OP*, *NP*, *LR*, *ROCE*, and *IFWE* respectively. However, only *OP* and *NP* had a statistically significant relationship with *Total remuneration*. As expected, there was a negative

relationship between *Total remuneration* and *NP*, *ROCE*, and *IFWE* respectively. Results from the Spearman rank correlation test revealed a statistically negative relationship between *Fixed pay* and *AO*, and between *Total remuneration* and *AO* for the period under study.

The results of Research Question 2 indicated that *Turnover* seemed to have the most stable relationship with *Fixed pay*. The results further indicated that the relationship between *Fixed pay* and the components of *Company performance* did not strengthen over the study period, but did fluctuate. This trend was mirrored in the analysis of *Total remuneration*, where *Turnover*, once again, provided the most stable linear relationship. Further, there was no definite pattern of improvement in the strength of the linear relationship between *Total remuneration* and the components of *Company performance* in the period under study. The results indicated that *STIs* showed an unstable trend in the strength of the linear relationship with all the components of *Company performance* throughout the period under study. Contrary to expectations, *STIs* showed a direct and strong to very strong positive relationship with *Turnover*, *OP*, and *NP* for the years under study.

The results further revealed that different performance measures were important before, during, and after the financial crisis with regard to the components of *CEO remuneration*. The regression analysis results reveal that *Fixed pay* can be explained by *Gender*, *Age*, *Race*, *Education*, and *Tenure*. This could possibly suggest that fixed pay within South African SOEs is determined by subjectively employed criteria, such as race and gender.

The results further indicated that gender, education, race and age do not have an effect on *STIs*. However, the research indicates a weak positive relationship between *Tenure* and *STIs*, suggesting that the longer a CEO is employed, the more STIs he or she will receive. *Total remuneration* can be explained by *Race*, *Tenure*, and *Education*. This suggests that CEOs' remuneration in SOEs is not affected by gender, and that their total remuneration is determined by job evaluation and benchmarking.

Contrary to previous findings, the size of the SOE does not play a role in the CEO's remuneration. The results confirm that *Company size* is not a statistically significant predictor of *Fixed pay*. However, with regard to *Total remuneration*, *Company size*, in terms of *Very large company*, was found to be a predictor, though not statistically significant. This suggests a weaker relationship between *Total remuneration* and *Company size*.

The results indicate that there was a strong positive relationship between *STIs* and *Company size*, but that Company size did not affect *Fixed pay*. Although *Company size*, in the case of *Very large company*, had an effect on *Total remuneration*, the relationship was not significant.

The next chapter will discuss the results against the background of the literature review.

CHAPTER 6: DISCUSSION OF RESULTS

6.1 INTRODUCTION

The main objective of this research was to determine whether there is a link between CEO remuneration and company performance in South African Schedule 2 SOEs. The previous chapter presented the results of the study, which focused on the relationships between the variables, based on descriptive, correlation, and regression statistics.

This chapter provides a comprehensive discussion of the research results within the context of the literature review. The main objective of this chapter is to examine the alignment between the results presented in Chapter 5 against the results of prior studies on related topics. The comparison of this study's results with those of other studies will outline key similarities and differences, for the purpose of contributing to the literature.

The chapter starts with a discussion of the results of the correlation and regression analysis in addressing the research questions and sub-questions. It concludes with a summary of the chapter.

6.2 DISCUSSION OF THE RESULTS — WHETHER THERE IS A RELATIONSHIP BETWEEN *CEO REMUNERATION* COMPONENTS AND *COMPANY PERFORMANCE*

Research Question 1 aimed to analyse the relationship between CEO remuneration components (fixed pay, STIs, and total remuneration) and the SOE's performance. The researcher used OLS multiple regression for panel data to test the relationship of the components of *Company performance* with *Fixed pay* and *Total remuneration*. Because a third of the sample declared zero bonuses, regression analysis could not be run on the *STIs* component. Therefore, the Spearman rank

correlation coefficient analysis was used to test for correlation between components of *Company performance* and *STIs*.

6.2.1 Relationship between fixed pay and company performance

The findings of this research, that fixed pay has a relationship with turnover, NP, and IFWE respectively, support the findings of Ndofirepi (2015), Modau (2013), and Barber *et al*. (2006). Ndofirepi (2015) found a statistically significant relationship between fixed pay and accounting-based performance measures (ROA and ROE). In his study, Modau (2013) found an inverse relationship between fixed pay and ROE, whereas Barber *et al*. (2006) found a strong relationship between CEO salary and net income in restaurant companies. The findings of the present study are contrary to that of Osei-Bonsu and Lutta (2016), who found that CEOs' salaries are not linked to company performance.

Fan, Wong, and Zhang (2007) posit that listed SOEs normally have close political connections with government. It may be the case that an increase in IFWE signals an inept board or management that could result in a loss of crucial political connections for these SOEs (Conyon & He 2016). Therefore, the negative relationship between fixed pay and IFWE could suggest that boards and shareholders reduce fixed salaries of executives to penalise them for such losses.

The results of the present study further show that the higher an SOE's turnover and NP are, the more fixed pay the CEOs will earn. Based on the finding of a statistically strong positive relationship between *Fixed pay* and *Turnover*, it could be argued that a CEO that generates a higher income for the SOE is considered to perform well, for which he or she is rewarded. This could explain the connection between CEO remuneration and company performance posited by Andersson and Andersson (2006).

6.2.2 Relationship between STIs and company performance

The payment of bonuses has several purposes; for example, it can be used to attract or to retain skilled and experienced talent, or it can serve a means to monitor and motivate CEO. Beer and Katz (2003) posit that both the expectancy theory and

agency theory treat remuneration as a tool that can help to maximise motivation and performance. The main reason for paying STIs is to tie payment to results. From an agency approach, individual efforts and objectives may be more accurately aligned with firm objectives. This should indicate that CEOs receive STIs in good times, along with their fixed pay (Nellkrans & Dogan 2015). However, this has not always been the case. Even though 2009 was an abysmal year for many companies, including the SOEs under study, the CEOs managed to extract STIs to the amount of R1 156 762 50.00, an increase of 52% from the previous year. This raises questions.

While STIs have been the topic of many studies, previous research has struggled to explain the significance level of bonus remuneration in relation to company performance (Nellkrans & Dogan 2015). In fact, Beer and Katz (2003) found that executive bonuses are more likely to be seen as having a negative impact on executive behaviour and decision-making when the bonuses are based on unit performance, rather than company performance.

The results of the present study revealed a significant positive correlation between the *STIs* component of *CEO remuneration* and three of the eight components of *Company performance* used in this study. Despite the positive relationship of *STIs* with *OP*, *NP*, and *Turnover* being contrary to expectations, due to the poor performance of the SOEs, it suggests that the implementation of the *Companies Act* (2008) and King III (2009) was successful as it is required that CEO remuneration be linked to some form of company performance (Modau 2013).

Findings from the present research are contrary to those of Andersson and Andersson (2006), Weinberg (1995), Nel (2012), and Osei-Bonsu and Lutta (2016), who found no significant relationship between company performance and STIs. The significant relationship between *Company performance* and *STIs* found in the present study supports the findings of Jeppson (2009), Modau (2013), Shaw (2012), Barret (2014), and Ndofirepi (2015). It must, however, be noted that, although these authors did find significant relationships, these were in opposing directions. It therefore appears that the effect of STIs on company performance is not clear, and

requires further research. Michaud and Gai (2009) found that, after controlling for fixed effects such as macroeconomics and specific industry conditions, only bonuses (STIs) had a significant positive effect on company performance.

Beer and Katz (2003) argue that researchers have been unable to establish that STIs are causally correlated to company performance. These authors further argue that an implicit assumption embedded in prior research is that bonuses shape executive behaviour and decision-making, which, in turn, influence organisational performance.

6.2.3 Relationship between total remuneration and company performance

The results of the present study revealed that there is a relationship between *Total remuneration* of CEOs and five of the eight components of *Company performance*. The negative relationship of *Total remuneration* with *IFWE* could suggest that boards and stakeholders reduce total remuneration to penalise SOEs for loss of crucial political connections as posited by Fan *et al*. 2007. A company's political connections may have both direct and indirect effects on changes in executive remuneration (Conyon & He 2016: 689)

The findings of the present research add support to previous studies of executive remuneration that found a relationship between total remuneration and company performance (although those authors conducted these studies in the private sector or in different sectors to that of the present study). For example, Barber *et al*. (2006) found a weak statistical relationship between total remuneration and net income. Jeppson *et al.* (2009) found that company revenue was the only statistically significant variable that predicted total remuneration (with an r^2 of only 0.10). In his study, Modau (2013) found a positive relationship between total remuneration and ROE. Scholtz and Smit (2012) found a strong relationship between total remuneration and, amongst others, turnover. The finding of the present research that there is a positive relationship with *OP* support the findings of Sigler (2011), Nel (2012), Van Blerck (2012), and Modau (2013). Interestingly, McGuire, Chiu, and Elbing (1962) did not find a significant relationship between executive remuneration and company profit.

In the present study, the results regarding the relationship between *Total remuneration* and some of the components of *Company performance* are worrying, due to their inverse nature, especially the relationship between *NP* and *ROCE*. This may suggest that the relationship between total remuneration and the SOEs' performance is not strong enough (Ozkan 2011). This implies that CEOs receive their remuneration regardless of their organisations' performance (Bussin 2014).

6.2.4 Relationship between *CEO remuneration* components and *AO*

The results of the present study reveal that *AO* had a strong negative relationship (for different years) with *Fixed pay* and with *Total remuneration*. However, the results revealed no statistically significant relationship between *AO* and *STIs*. This suggests that poor AOs were associated with lower levels of fixed pay and total remuneration. Findings from correlational analysis of this study support the findings of Lennox (1998), who found a negative relationship between CEO remuneration (after correcting for performance) and modified audit reports. This suggests that modified audit reports have a statistically significant effect on executive remuneration. His findings further indicate that negative audit reports have a negative impact on managerial remuneration.

Zhang and Xian (2014) investigated the impact of audit opinions and audit fees on CEO remuneration. They specifically examined the changes in CEO remuneration according to different AOs and audit- or total fees. They found that the presence of modified opinions is linked with lower CEO fixed pay and total remuneration. The justification for this is that modified opinions are indicators of poor firm performance or financial distress. Their analysis of adverse opinions implies that, after the issuance of adverse opinions, CEOs are offered more STIs, compared to total remuneration. This indicates that CEOs prefer short-term remuneration to long-term remuneration after the issuance of adverse opinions that contain information about potential bankruptcy.

The present study's results of the OLS regression analysis, where the relationship was tested over the entire study period, however, revealed that *AO* did not have a relationship with the *CEO remuneration* components *Fixed pay* and *Total*

remuneration. The reason for this was that the dummy variable *AO* did not feature in the final regression model.

6.3 DISCUSSION OF RESULTS: WHETHER THE STRENGTH OF THE RELATIONSHIP BETWEEN CEO REMUNERATION AND COMPANY PERFORMANCE STRENGTHEND OVER THE NINE-YEAR PERIOD

Research Questions 2 was aimed to analyse, by means of Spearman's rank correlation test, the trend in the relationship between the three *CEO remuneration* components and the components of *Company performance*. In order to analyse the trend, the correlation coefficient with reference to the three *CEO remuneration* components were used, tracked over the nine-year period under study. The expectation was that the relationship would strengthen over the nine-year period. This expectation was based on the effects of improved monitoring and regulation (Bussin 2014).

6.3.1 Fixed pay

The findings reported in Chapter 5 indicated that the trend in the relationship between *Fixed pay* and the components of *Company performance* was characterised by a fluctuation over the nine-year period under study. From the results, it is clear that *Turnover* had a stronger influence on *Fixed pay* than the other components of *Company performance* did. Throughout the nine-year period, there was mostly a positive relationship between *Fixed pay* and *Turnover*, whereas the other components of *Company performance* seemed to move in and out of the different relationship boundaries, and changing direction in other years. The relationship between *Fixed pay* and almost all the components of *Company performance* between positive and negative throughout the nine-year period. A sharp decline was evident in the strength of the linear relationship during the 2012/2013 financial year, with the results for all the components of *Company performance* (except *Turnover*) suggesting that the linear relationship was at its weakest during this period. A possible explanation for the decline could be the fragility of the global economy or political uncertainty in South Africa at the time. A total of 99 strikes were recorded during 2012, with this trend continuing into 2013.

Many of these strikes was characterised by violence (Davies 2013). At the same time, the descriptive statistics indicated that the median of *Fixed pay* showed a steady growth over the nine-year period.

A deeper analysis of the *Fixed pay* median data points indicated that the median increased by 11% year on year from 2006 to 2010, with a mere 3% year-on-year increase from 2011 to 2014. *Fixed pay* increased by 83% over the nine-year period. The impact of the lower increase in *Fixed pay* through the latter half of the nine-year period appears to have played a role in weakening the relationship between *Fixed pay* and the components of *Company performance (except Turnover)*. A further implication of the results is that CEOs' increases were more evident during the economic crisis than afterwards.

If this observation is combined with that of declining *STIs* for the period 2011 to 2014, it could be assumed that the structure of CEO remuneration had changed to include less variable pay and more fixed pay over the latter part of the nine-year period. The finding of this structural change supports the research findings of Valenti (2012), Bussin, *et al.* (2013), and Modau (2013).

Interestingly, findings by Osei-Bonsu and Lutta (2016) suggest that fixed pay total does not seem to provide a better incentive to CEOs. Thus, higher fixed remuneration alone would not have an impact on company performance. These authors argue that this could be because CEOs' fixed remuneration is generally determined by considerations that are not related to the interests of the shareholders.

6.3.2 STIs

In the present study, the trend in *STIs* indicated an unstable and inconsistent linear relationship with the components of *Company performance* throughout the nine-year period. This inconsistent relationship casts doubt on whether SOEs use a range of performance targets to determine CEOs' STIs. It could also suggest that SOEs do not follow remuneration policy and guidelines when awarding bonuses, and that the contracted performance measures differ between SOEs. An upward

trend in the strength of the linear relationship between *STIs* and the components of *Company performance* occurred during 2014, with the exception of *ROCE*, which declined from 2012. A deeper analysis of the median *STIs* data points indicated that the median increased by 21% year on year from 2006 to 2010, but decreased by 29% over the nine-year period. This was the result of a 26% year-on-year decrease over the period 2011 to 2014.

This suggests that the reason why the relationship between *STIs* and the components of *Company performance* was unstable during the nine-year period, especially from 2006 to 2011, was that, while *STIs* did decline, the decline was not aligned with the decline in the results for the components of *Company performance*.

The decline in *STIs*, in conjunction with the increase in *Fixed pay* over the nine-year period, suggests that the focus was more on fixed pay, in order to compensate CEOs for declining STIs. Ellig (2007) claims that, should STIs be difficult to achieve, due to unavoidable circumstances beyond the control of the CEO, the structure of the remuneration would lean towards a guaranteed cost-to-company or fixed pay. Bussin and Modau (2015) posit that the global trend in such times is to reduce or defer, *inter alia*, STIs and incentive bonuses.

However, focusing less on STIs or variable pay may not necessarily be as unscrupulous as it appears at first glance. According to Bergstresser and Philippon (2006), cash bonuses linked to accounting figures encourage executives to manipulate the scheduling of revenues and expenses, to increase their remuneration. In addition, in some instances, it motivates executives to focus on short-term performance that may adversely affect the long-term survival of the company. The challenge therefore lies in developing and implementing strategies that provide sustainable long-term results to the benefits of shareholders (Nellkrans & Dogan 2015).

6.3.3 Total remuneration

The results of the present study point to a trend of fluctuation in the strength of the linear relationship between *Total remuneration* and the components of *Company*

performance. Moreover, when examining the results of the correlation between *Total remuneration* and the components of *Company performance*, it appears that there was no definite pattern of improvement in the strength of the linear relationship from 2006 to 2014.

As with *Fixed pay*, *Turnover* showed a growing significant correlation with *Total remuneration* (except for 2010). Most of the other components of *Company performance* showed different levels of correlation over time. This was contradictory to the findings of Van Blerck (2012), who found that the relationship between executive remuneration and EVA strengthened after the 2008 financial crisis.

The most noticeable finding with regard to the strength of the relationship between *Total remuneration* and the components of *Company performance* was that they are generally moving in and out of the different relationship boundaries, and changed direction in some years. When the data were examined in conjunction with the components of *Company performance*, it was clear that there was a difference in trend lines over the period researched. It seems the *Total remuneration* was not sensitive to the components of *Company performance* during the nine-year period.

The descriptive statistics indicated that the median of *Total remuneration* increased by 14% year on year from 2006 to 2010, and increased by only 3% year-on-year over the period 2011 to 2014. However, the growth was unstable, and fluctuated during the study period. This finding was contradictory to that of Kuboya (2014), who found that total remuneration increased steadily during a five-year period. This suggests that the reason why the relationship between *Total remuneration* and the components of *Company performance* was unstable was the fact that the initial *Total remuneration* increases were not aligned with the decline in the components of *Company performance* from 2006 to 2010.

It appears that the rate of change in total remuneration was high, with a 93% increase over the nine-year period, and may have been as high as reported in the media. Further, the increase in CEO remuneration was higher than that of the rest of the workforce in South Africa, which spurred the strikes in 2014. This is contrary

to the analysis of Larcker and Tayan (2011) that the average CEO is not overpaid considering the responsibilities and risk associated to the position.

During 2015, government budgeted for a cost-of-living wage increase of only 6% for workers (Paton 2015). The growth rates of the components of *Company performance* were not consistent for the nine-year period, showing both negative and positive growth. Therefore, no consistent positive trend in the components of *Company performance* could be established, except for *Turnover*, which had a greater effect on *Total remuneration*.

As an overall observation, the unstable relationships bring into focus the role of labour market forces (as indicated by Chalmers *et al.* 2006) as being a contributing factor in CEO remuneration, especially during periods of economic upset. This supports the findings of Shaw (2011).

6.4 DISCUSSION OF RESULTS — RELATIONSHIP BETWEEN CEO REMUNERATION COMPONENTS AND COMPANY PERFORMANCE COMPONENTS FOR THE PERIODS 2006 TO 2010 AND 2011 TO 2014

The global recession of 2009 started in December 2007, and intensified in September 2008 (Colander 2010). The International Monetary Fund (IMF) defines a global recession as a decline in annual per capita world GDP (Modau 2013).

Based on what happened leading to the 2008 to 2009 global financial crisis, Research Question 3 focused on analysing the relationship between the components of *CEO remuneration* and the components of *company performance* for the period 2006 to 2010 and again 2011 to 2014.

The question therefore attempted to analyse the effect of substantial economic changes on the remuneration of the CEOs in SOEs. The reasoning behind this was to determine whether the global financial crisis and the stock market fall of 2011 had had an impact on the relationship between the components of *CEO remuneration* and those of *Company performance*. According to Nellkrans and Dogan (2015),

times of economic decline seem to have little effect on CEOs' remuneration, both in terms of total remuneration and bonuses.

6.4.1 Fixed pay

The findings of the present study revealed that, for the period 2006 to 2010, there was a statistically strong positive relationship between *Fixed pay* and *Turnover*. Estimations of the regression models revealed that *Fixed pay* and *Turnover* appeared to be positively related, even during the financial crisis (2006 to 2010). This finding supports those of Otieno (2011), who found a statistically significant positive correlation between company performance measured by turnover (revenue), NP, and CEO remuneration during the 2008/2009 period.

In the present study, a closer inspection of the *Fixed pay* median data points indicated that the highest increase (23%) in the median occurred in the 2006/2007 financial year. As expected, the increase in fixed pay during the 2008/2009 financial year was relatively high — CEOs received a 21% increase. This was in contrast to the decline in six of the eight measures of *Company performance* during the same period. This finding supports the notion proposed by Kuboya (2014), that the fixed proportion of executives' pay, in most cases, will not decline during periods of poor financial performance. This finding could suggest that the remuneration committees of SOEs did not consider the impact of the economic crisis in determining of fixed salaries.

The negative company performance (as measured by OP, LR, SR, ROCE, and ROE) during the 2007/2008 financial year was not followed by recovery with positive returns during the 2009/2010 financial year.

An implication of the results is that CEOs in South African SOEs received noticeable fixed pay increases, despite the global financial crisis and the decline in their performance. This is in line with findings of Otieno (2011), who observed that the financial performance of SOEs (due to the declining average in NP) deteriorated in the period 2007 to 2009. The concurrent decline in the performance of SOEs (as seen in the negative growth in OP, NP, SR, ROCE, and ROE) signals that

remuneration measures did not to reflect the poor performance of the SOEs. This would suggest that, as tough economic conditions became a reality, CEOs in South African SOEs received higher fixed salaries, not compensating for the decline in certain measures of their performance.

This supports findings of Shaw (2011), who found that CEOs in the financial services industry received fixed pay increases that were more noticeable during an economic downturn. On average, fixed pay was high, despite a decline in company performance. In fact, in the present study, the median *Fixed pay* data points increased by 11% year on year from 2006 to 2011, while most of the components of *Company performance* declined during the same period. This suggests that the CEOs' fixed salaries were not aligned to the performance of SOEs during the period 2006 to 2011.

Even after the financial crisis (the period 2011 to 2014), *Fixed pay* was positively related to *Turnover* and LR, although the relationship with *LR* was not statistically significant. The positive relationship was contrary to expectations. This is consistent with findings from for example Mbo and Adjasi (2013) who found that liquidity have a positive influence on company performance.

As expected, results revealed a negative relationship between *Fixed pay* and IFWE. During the 2011/2012 financial year, *Fixed pay* increased by 18%, suggesting that the August 2011 stock market fall did not have an effect on the fixed salaries of SOEs' CEOs. This finding, in conjunction with the finding that components of *Company performance*, such as *OP* and *SR*, decreased during the same period, suggests that remuneration committees did not consider the SOEs' poor performance in determining the CEOs' fixed salaries at the time. However, the *Fixed pay* median data points indicated that the median increased by only 3% during the period 2011 to 2014. This could suggest that the CEOs' fixed salaries had increased in previous years, and were not moving in the same direction and at the same rate as the SOEs' performance during this period.

6.4.2 STIs

The results of the present study indicate that there was a moderate to strong statistically positive relationship between *STIs* and *Turnover* for the period 2006 to 2010. However, the observation of a strong statistically significant negative relationship *between STIs* and the components of *Company performance*, such as *LR*, *ROE*, and ROCE, during the same period is a concern.

The findings of the present research support the findings of Nellkrans and Dogan (2015), who found a statistically positive relationship between company performance measured through relative bonus and stock performance during the period 2007 to 2010. However, the findings of the present research are contrary to those of Azim, Mei, and Rahman (2011), who found no statistically significant relationship between executives' bonuses and company performance as measured through ROE, ROA, and ROI, from 2007 to 2008.

A deeper analysis of the descriptive statistics of the median of *STIs* indicated a 52% increase in *STIs* during the 2008/2009 financial year, suggesting that the global economic downturn did not have an effect on the payment of STIs in SOEs. This finding is contrary to the postulation of Nellkrans and Dogan (2015) that bonus payments are left unchanged in times of poor financial performance, whereas fixed salaries are increased. The reasoning behind this is to motivate more experienced CEOs to keep the company afloat during a financial crisis (Nellkrans & Dogan 2015). In the present study, it was found that both the CEOs' STIs and their fixed salaries increased during the 2008/2009 financial year. This finding is in line with that of Valenti (2012), who found that CEOs' bonuses did not decline as expected in the recession years 2007 to 2009. The finding of the present research is, however, contrary to the finding of Kuboya (2014), who found that performance bonuses (STIs) experienced a slight decline during the economic recession of 2007 to 2008. An inspection of the median data points of *STIs* indicated that the median increased by 21% year on year from 2006 to 2010.

Even though STIs reward CEOs for past performance, the increase in STIs during the 2008/2009 financial year is still a concerning result, considering that the global

financial crisis started in August 2007. This, in conjunction with the decline in five of the nine measures of *Company performance*, namely *OP*, *NP*, *SR*, *ROCE*, and *ROE* during the global financial crisis, suggests that the relationship between STIs and SOEs' performance could be problematic. This finding raises questions about the remuneration schemes of CEOs in SOEs, as well as about how the bonuses relate to the performance of the SOE. It could reasonably have been expected that SOEs would implement a downward discretion in awarding STIs, due to the probability of poor performance of SOEs. However, as seen from the results, this clearly did not happen.

The results suggest that there was no connection between the payment of STIs and the decline in SOEs' performance during the financial crisis. Although Nellkrans and Dogan (2015) found a slight reduction in bonuses paid to CEOs, this reduction was not as notable as had been expected. These authors, however, found that many CEOs in their sample continued to extract bonuses, even during the worst year of the financial crisis. This is consistent with findings of the present research.

The results of the present study further revealed that *STIs* had a strong to very strong statistically significant positive relationship with *Turnover*, *OP*, and *NP* for the period 2011 to 2014. Of particular interest is the finding that *STIs* had a very strong statistically negative relationship with *ROCE*. Maug, Niessen-Ruenzi, and Zhivotova (2014) argue that there are other variables that can influence a CEO's remuneration besides company performance.

The analysis of median *STIs* points indicated that the median declined by 26% year on year from 2011 to 2014. During the same time, the median of both *Fixed pay* and *Total remuneration* increased by 3% year on year.

Interestingly, Gaver and Gaver (1998) point out that companies are reluctant to reprimand their executives for losses (Nellkrans & Dogan 2015), especially when macroeconomic effects explain the losses.

6.4.3 Total remuneration

The results of the present study reveal that *Total remuneration* had a statistically strong positive relationship with *OP* and a strong negative relationship with *NP* for the period 2006 to 2010. The finding of a statistically significant relationship between *Total remuneration* and OP confirms previous findings of, for example, Otieno (2011) and Keller (2013). Otieno (2011) found a statistically strong correlation between CEO remuneration and net profit for 2007 and 2008. In his study, Keller (2013), found a statistically significant correlation between the remuneration of CEOs and the net income of their companies during 2010. Vemala *et al.* (2014) found that the financial crisis had had a positive impact on total remuneration. This suggests that CEOs were highly paid despite the crisis. This was also found in the present research, where it was observed that median of *Total remuneration* grew by 70% for the period 2006 to 2010.

Furthermore, results from the regression analysis of the post-crisis (2011 to 2014) data indicated that *Total remuneration* had a negative relationship with *ROCE* and *IFWE* respectively, and a positive relationship with *ROE*. However, although an inverse relationship, only the relationship between *Total remuneration* and *IFWE* was statistically significant, suggesting a stronger relationship. The opposite direction of the relationship during 2011 to 2014 is interesting from an agency perspective, with reference to how companies tend to evaluate and set pay levels in a period of great market volatility. Although the SOEs did not perform well, the CEOs' remuneration levels increased. This could be due to the factors that CEO remuneration have previously increased during years of poor performance, and the post-crisis market reactions had already been discounted in the CEOs' remuneration in previous years (Nellkrans & Dogan 2015). From the results of the descriptive statistics of the medians of *Total remuneration*, it was observed that the median grew by 9% during the period 2011 to 2014.

The results indicate the serious consequences of the economic downturn for SOEs in South Africa. The only component of *Company performance* that did not decline during the study period was *IFWE*. In fact, it increased substantially from 2011 onwards. Interestingly, according to a draft audit report for the financial year ending

31 May 2014 by one of the leading auditing firms in South Africa, the South African Post Office (SAPO) spent R2.1 billion in IFWE during the 2013/2014 financial year; this despite the fact that SAPO had an overdraft of R250 million during the same period (BusinessTech 2014).

An important characteristic of SOEs is that their CEOs and executives have strong political connections with the government, which enables government to exercise substantial influence on the operations of SOEs (Cao *et al.* 2014; Fan *et al*. 2007). Chen *et al.* (2011) postulate that SOEs' executives face delayed and less stern punishment when committing fraud. This is because government shields them from enforcement actions by regulatory bodies (Conyon & He 2016). Hou and Moore (2011) also found that larger state ownership in SOEs is linked to a smaller likelihood of enforcement actions. If this is the case, the impact of IFWE on CEOs' remuneration may be weaker in SOEs. This lack of enforcement perhaps explains the increase in *IFWE* of the SOEs under study.

Nellkrans and Dogan (2015) claim that CEOs can be remunerated particularly well for managing a company during economic turmoil. This means that the negative relationship between *Total remuneration* and *Company performance* could be an exogenous factor for which individual CEOs cannot be held accountable during the global financial crisis.

6.5 DISCUSSION OF RESULTS — THE EXTENT OF THE EFFECT OF DEMOGRAPHIC VARIABLES ON THE COMPONENTS OF CEO REMUNERATIONDEMOGRAPHIC VARIABLES

Research Question 4 analysed the relationship between *CEO demographic variables* and the components of *CEO remuneration* in South African SOEs. *CEO demographic variables* consisted of *Age* (in years), *Gender*, *Race*, *Tenure* (in years) and *Education*.

The purpose of using the variables *Age*, *Education*, and *Tenure* was, in part, to check for a relation to experience and not the actual change in the number of years

(Andersson & Andersson, 2006). This subsection presents a discussion of the key findings pertaining to Research Question 4.

6.5.1 *Fixed pay* and *CEO demographic variables*

The results of the present study revealed that *Fixed pay* had a relationship with *Age*, *Tenure*, *Gender*, *Race*, and *Education*.

Age

The finding of a statistically significant negative relationship between *Fixed pay* and *Age* is contrary to findings of McKnight et al. (2000) that CEO pay is positively related to age. Mäkinen (2008) also found a positive relationship with age. Findings of this research is in line with that of Deckop (1998) who argued that the CEO's age does not have an effect on CEO cash remuneration. Beyond which real fixed pay decreased. This is consistent with the belief that the need for cash will weaken as one gets older because of a decrease in human life-cycle related obligations and dependencies (McKnight *et al*. 2000).

Tenure

Previous research on the effect of CEOs' tenure on the relationship between CEOs' remuneration and company performance suggests that the relationship weakens as the CEOs' tenure increases, because the board of directors learns more about the CEO, and does not need to use company performance measures as a proxy for CEO performance (Murphy 1996). The finding of a statistically significant positive relationship between *Fixed pay* and *Tenure* in the present study could suggest that, as CEOs' experience increases, their worth to the company increases, which results in them demanding higher salaries. This finding is in line with that of Bradley (2013), Nel (2012), and Ndofirepi (2015).

Baptista (2010) posits that CEOs with longer tenure could be paid more, due to the increase in their knowledge of the company, or due to entrenchment, or both. The finding of the present study, that there is a relationship between *Fixed pay* and *Tenure,* further supports the notion that, over time, the abilities of the CEOs improve, together with their influence on the board of directors, which could lead to increases

in their fixed pay (Sigler 2011). Through tenure, CEOs may gain control over the process of setting pay, and, in turn, design remuneration schemes to suit their preferences (McKnight & Tomkins 2004).

Bouvier (2010) found that tenure became insignificant once industry controls were added, suggesting that age is sufficient to describe the variation in CEOs' fixed pay. Further, Aaron *et al*. (2015) suggest that CEOs with a longer tenure, who prefer a higher fixed pay.

Gender

The finding of the present research that male CEOs earned more than female CEOs supports the findings of Bertrand and Hallock (2001), Mohan and Ruggiero (2003), Gius (2007), and Cole and Mehran (2008). The findings of the present study support those of a 2013 PwC study, where it was found that women, overall, earned 28.1% less than men, as measured by taxable income (BusinessTech 2013).

Race

The finding of the present research that there is a statistically significant positive relationship between *Fixed pay* and *Race* is contrary to finding of Barret (2014), who found no variance in fixed pay between black African and white CEOs.

Education

The present study found a negative relationship between *Fixed pay* and *Education*, which is contrary to the findings of, for example, Andersson and Andersson (2006) and Michiels (2012). Banghøj *et al*. (2010) found that educational level contributes greatly to variations in executive remuneration. In the present study, the result indicated that, specifically, CEOs with a bachelor's degree earned more than CEOs with an honours degree. Andersson and Andersson (2006) revealed that, CEOs with a higher level of education received a higher total remuneration. Michiels (2012), in a study conducted on privately held companies, also found that CEOs with a higher level of education earn more. Andersson and Andersson (2006) posit that, if a CEO has a high level of education, the CEO would have knowledge that

will probably make it easier to solve problems and identify new ways to increase a company's performance than what it would be for a CEO less education.

Findings from the present research support the findings of Ayaba (2012), who found that CEOs' education had a limited effect on the results of accounting-based measures of company performance. The results of Ayaba (2012) show that, while the CEO may bring skills that were acquired through education, these skills may be progressively redefined to meet the challenges of the environment. Interestingly, Aron and Matthew (2010) found that the educational background of the CEO is not related to the financial performance of the company.

The results of the present study therefore suggest that the fixed pay of CEOs of South African SOEs is influenced by the CEOs' age, tenure, race, gender, and level of education.

6.5.2 *STIs* and *CEO demographic variables*

Age

The present study found a negligible relationship between *STIs* and *Age*. This finding is contrary to that of Nel (2012) and Bradley (2013), who found that age is positively correlated with CEOs' bonuses. Similar to the finding of the present research, Andersson and Andersson (2006) found that age is not an important variable in CEOs' remuneration. Bouvier (2010) found STI to be significant at the 1% level. Suggesting that for every year increase in age, STI would increase.

Tenure

The present study found a weak statistically significant positive relationship between *STIs* and *Tenure*, which is in line with the finding of Baptista (2010) and Sigler (2011). The finding is, however, contrary to that of Bebchuk *et al*. (2002), Nel (2012), and Bradley (2013), who found that tenure is negatively correlated with STIs. The results of the present study suggest that, the longer a CEO remains with a company, the higher his or her STIs will be. This is contrary to finding of Rankin (2006) and Ndofirepi (2015), who found no relationship between tenure and STIs.

Further, Aaron *et al.* (2015) hypothesise that companies with CEOs with longer tenure will perform better when offered a greater proportion of fixed remuneration relative to performance-based remuneration. Findings from the present study is consistent with the literature because CEOs with a longer tenure is rewarded with higher pay for possessing more valuable human capital (Brick, Palmon & Wald 2006).

Gender

The present study found no relationship between *STIs* and *Gender*. This suggests that there is no difference between male and female CEOs with regard to *STIs*. This points towards equity when paying STIs. This finding is contrary to the findings of Kulich, Trojanowski, Ryan, Alexander Haslam and Renneboog (2010) who found that bonuses (STIs) awarded to men are larger than those allocated to female executives. Albanesi, Olivetti and Prados (2015) also found that female executive receive lower levels of STIs relative to males.

Race

This study found no statistical difference in mean scores between *STIs* and *Race*. This suggests that there is no difference between African black and white CEO with regard to *STIs*, pointing towards remuneration equity (with regard to the payment of STIs) between black African and white CEOs. This is contrary to the findings of Barret (2014) who found a variance in STI between these two race groups. He observed that the variance in STIs of black African CEOs are higher than that of the white CEOs.

Education

The present study found no statistically significant correlation between STIs and *Education*. This finding is in line with the finding of Bhagat *et al.* (2010) who found that education may be an insufficient proxy for STIs.

6.5.3 Total remuneration and *CEO demographic variables*

In the present study, it was found that *Total remuneration* had a relationship with *Tenure*, *Race*, *and Education respectively*.

Age

Contrary to findings of Abraham, Harris and Auerbach (2014), this study found no relationship between *Total remuneration* and *Age*. Abraham et al. (2014) found that an increase in a CEO's age led to an increase in the CEO's remuneration, which underscores the importance of age in determining CEOs' remuneration.

Tenure

The present study found a statistically significant positive relationship between *Total remuneration* and *Tenure*. This finding suggests that CEOs with longer tenure may have more power to influence their remuneration (Ndofirepi 2015). Further, this finding supports that of Andersson and Andersson (2006), who found that a CEO's total remuneration will increase for every year that a CEO remains in his or her position. These authors explain this phenomenon it by indicating that, if the CEO works for one more year, he or she will have more experience, thereby making a greater contribution to the success of the company, resulting in higher remuneration.

The finding of the present study further supports that of Jaiswall and Bhattacharyya (2016), who found that total remuneration in public companies was positively related to CEOs' tenure. Abraham, Harris, and Auerbach (2014) also found a relationship between CEOs' tenure and their remuneration.

Gender

It is well documented that the overall remuneration levels of females is lower than males (see Rekker, Benson & Faff 2014). However, the present study found no relationship between *Total remuneration* and *Gender*. This finding is contrary to the findings of Muñoz-Bullõn (2010) who found that a large percentage of the gender pay gap in total remuneration was attributable to differences in variable pay between the genders.

Race

The finding of the present study that black African CEOs earned more than white CEOs supports the finding of Barret (2014).

Education

From the data set of the present study, it was found that CEOs with a Master's degree earned less than those with a bachelor's degree. This finding could possibly correlate with the finding that tenure is important, suggesting that the CEOs were remunerated for their years of experience, and not according to their qualifications. Thus, a CEO with a longer tenure would earn more than a CEO with a higher level of education.

The findings of the present research are contrary to those of the study of Cole (2009), who found that executive pay increases with educational attainment. The author found that, compared to CEOs who did not have a college degree, CEOs with a college degree earned 4% to 6% more, while CEOs with a graduate degree earned 8% to 25% more. Andersson and Andersson (2006) found that CEOs' remuneration is linked to their level of education. These authors posit that CEOs with a higher level of education will be better able to solve problems and increase a company's profit, resulting in higher remuneration.

It stands to reason that a person without an education would not be appointed as the CEO of a SOEs. However, it seems as if a higher level of education does not necessarily imply that the CEO will earn more. Sampson-Akpuru (2008) examined whether CEOs holding a degree from an Ivy League institution of higher education was associated with higher remuneration. After controlling for other factors, the author found that an Ivy League education is not associated with higher total remuneration. This finding is supported by the present research.

6.6 DISCUSSION OF THE RESULTS — WHETHER THERE IS A RELATIONSHIP BETWEEN CEO REMUNERATION AND COMPANY SIZE

Research Question 5 was aimed at determining whether there was a relationship between the components of *CEO remuneration* and the size of SOEs. Executive remuneration has attracted considerable public attention and academic interest, due to both the magnitude of CEOs' pay in relation to company performance (Zhou

2010). In line with the allocation theory of control, "in a market equilibrium, the most talented executives occupy top positions in the largest firms, where the marginal productivity of their actions is greatly magnified over the many people below them to whom they are linked" (Rosen 1992: 182). This reasoning provides a theoretical basis for a positive relationship between CEO remuneration and company size (Zhou 2010). Deysel (2013) posits that company size is believed to be an important variable, and that it is often mentioned by remuneration committees as a reason for above-average CEO remuneration packages.

The present study revealed that *Company size* is not a statistically significant predictor of *Fixed pay*, but that there is a strong positive relationship between *STIs* and *Company size*. The results further show that *Company size* positively affects *Total remuneration*. The results specifically show that the category *Very large company* in terms of revenue (R2.54 billion to R27.6 billion) and assets (R3.3 billion to R78.8 billion) positively affects *Total remuneration*.

The findings of the present study are contrary to those of Valenti (2012), Deysel and Kruger (2015), and Hill, Lopez, and Reitenga (2016), who found that a company's size does not have an effect on the CEO's remuneration. Fabbri and Marin (2012) found that the CEO's remuneration declines as company size increases. One possible interpretation that these authors provide is that German companies increase their quest for management talent when the economy declines, rather than when it grows. Skilled and experienced CEOs are more in demand when companies go through difficult times and have to find ways to mitigate losses and to recover rapidly (Fabbri & Marin 2012).

The finding of the present study that organisation size affects total remuneration confirms previous findings in a substantial body of work that shows that company size has an effect on CEOs' remuneration, for example, Lau and Vos (2004), Jeppson *et al.* (2009), Sigler (2011), Nulla (2013), Abed, Suwaidan, and Slimani (2014), Abraham *et al.* (2014), Barret (2014), and Oberholtzer (2014). Abraham *et al.* (2014), for example, found a company's size to be the most powerful determinant of the CEO's remuneration, explaining up to 30% of his or her remuneration, in both

publicly held and privately owned companies. Oberholtzer (2014) found company size to be the only factor that has a constant and positive correlation with CEOs' remuneration. Jeppson *et al*. (2009) found that the remuneration of CEOs' of larger firms is higher. One of the reasons for this is that larger companies have more operations, subsidiaries, and layers of management that the CEO has to manage (Lippert & Moore 1994). Further, larger companies require a higher level of responsibility of CEOs; their tasks are more complex, and a greater value is therefore placed on CEOs making the right decisions (Janssen-Plas 2009).

6.7 SUMMARY OF KEY FINDINGS

The findings relating to the goals of the research study are summarised in Table 46.

Table 46 Summary of key findings

Main question: Is there relationship between CEOs' remuneration and the performance of South African Schedule 2 SOEs?			
Research question		**Remuneration component**	**Finding**
RQ1	Is there a relationship between CEOs' remuneration and the performance of South African SOEs for the period 2006 to 2014?	***Fixed pay***	**Statistically significant:** *Turnover* (+) *NP* (-) **Non-statistically significant:** *IFWE* (-)
		STIs	**Statistically weak to strong:** *OP* (+) *NP* (+) **Statistically strong:** *Turnover* (+)
		Total remuneration	**Statistically significant:** *OP* (+) *Net Profit* (-) **Non-statistically significant:** *LR* (+) *ROCE* (-) *IFWE* (-)
RQ2	Did the relationship between CEOs' remuneration and SOEs' performance strengthen over the period 2006 to 2014?	***Fixed pay***	**No** **Relationship fluctuated** Strong to very strong statistically significant positive relationship with *Turnover*
		STIs	**No** **Unstable relationship** Statistically significant strong to very strong positive relationship with *Turnover*, *OP*, and *NP* Statistically significant strong negative relationship with *LR*, *ROCE*, and *ROE*

Research question	Remuneration component	Finding	Research question
RQ2	Did the relationship between CEOs' remuneration SOEs' performance strengthen over the period 2006 to 2014?	***Total remuneration***	**No Relationship fluctuated** No consistent positive trend Very strong statistically significant positive relationship with *Turnover*
RQ3	What is the nature of the relationship between CEOs' remuneration and the performance of SOEs before and during the financial crisis (2006 to 2010) and afterwards (2011 to 2014)?	***Fixed pay***	**Period 2006 – 2010, statistically significant:** *Turnover* (+) **Period 2011 – 2014, statistically significant:** *Turnover* (+) **Non-statistically significant:** *LR* (+) *IFWE* (-)
		STIs	**Period 2006 – 2010 Statistically moderate to strong:** *Turnover* (+) **Statistically moderate:** *LR* (-) *ROE* (-) *ROCE* (-) **Period 2011 – 2014: Statistically strong to very strong:** *Turnover* (+) *OP* (+) *NP* (+) **Statistically very strong:** *ROCE* (-)
		Total remuneration	**Period 2006 – 2010: Statistically significant:** *OP* (+) *NP* (-) **Period 2011 – 2014: Statistically significant:** *IFWE* (-) **Non-statistically significant:** *ROCE* (-) *ROE* (+)
RQ4	Is the remuneration of CEOs affected by demographic variables age, tenure, gender, race, and education?	***Fixed pay***	**Statistically significant:** *Gender* (-) *Age* (-) *Race (Coloured) (+)* *Tenure* (+) *Education (Honours degree)* (-) **Non-statistically significant:** *Race (Black African)* (+)

Research question	Remuneration component	Finding	Research question
RQ4	Is the remuneration of CEOs affected by demographic variables age, tenure, gender, race, and education?	***STIs***	**Statistically weak correlation:** *Tenure* (+)
		Total remuneration	**Statistically significant:** *Education (Master's degree)* (-) *Tenure* (+) **Non-statistically significant:** *Race (Black African)* (+) *Education (Honours degree)* (-)
RQ5	Is there a relationship between CEOs' remuneration and the size of South African SOE?	***Fixed pay***	**No**
		STIs	**Statistically significant relationship (+)**
		Total remuneration	**Yes** **Non-statistically significant:** ***Very large SOE* (+)**

6.8 CHAPTER SUMMARY

This chapter provided a discussion of the research results, providing in-depth insight into each of the results, and relating these to the research questions and observations from pertinent literature.

The findings appear to suggest that there is a relationship (either positive or negative) between the components of *CEO remuneration* and the results of various measures of *Company performance*. While some of the components of *Company performance* showed no relationship with the components of *CEO remuneration*, others were found to have a significant negative relationship. It can therefore be assumed that there is a basis to claim an inverse correlated relationship between the SOEs' performance and their CEOs' remuneration. This is opposed to Theku's (2014) finding in this regard.

Interestingly, the *Company performance* component *IFWE*, which has not used in previous studies, was found to play key role in determining the fixed pay and total remuneration of the CEOs, although an inverse relationship was found. Although the results of the Spearman rank correlation coefficient showed that *AO* had a relationship with *Fixed pay* and *Total remuneration*, the results from the OLS regression analysis show no relationship. The AO was therefore found to have had no impact on the CEOs' remuneration.

The discussion in the previous chapter further provided a deeper insight into the relationship between the CEOs' remuneration and the results of the measures of company performance, in answering Research Question 2. The results indicate that there was an unstable and fluctuating relationship between the components of *Company performance* and those of *CEO remuneration* for the period 2006 to 2014.

Chapter 7 will restate the main findings of the research, based on the discussion presented in this chapter, and will outline recommendations for business deliberation and future studies on the subject.

CHAPTER 7: CONCLUSION

"We shall not cease from exploration, and the end of all our exploring will be to arrive at where we started and know the place for the first time."

Elliot 1974: 209

7.1 INTRODUCTION

The relationship between CEO remuneration and company performance has become a much-debated topic in academic and public spheres. Critics claim that CEOs are overpaid in relation to the performance of the companies they manage. Therefore, if there is no meaningful relationship between a CEO's remuneration and the company's performance, this claim is founded. Furthermore, it is then debateable whether the millions of rands of assets of SOEs are being managed cost-effectively.

The preceding chapters introduced the research problem, reviewed the theoretical underpinnings of the relationship between CEO remuneration to company performance, and discussed the findings of previous research. The SOE environment in South Africa was described, the research methodology of this study was explained, and the results of the present study were discussed.

This chapter briefly reiterates the reasons for undertaking the research, together with an outline of the research methodology. This is followed by a summary of the key findings of the research. The researcher then presents a conceptual framework based on the findings of this research. This is followed by recommendations to relevant stakeholders, whereafter areas for suggested further research are discussed. Finally, the researcher provides the conclusions drawn from the results of the study.

7.2 REASONS FOR UNDERTAKING THE RESEARCH

The primary goal of this research was to determine whether there is a link between CEO remuneration and the performance of South African SOEs. As discussed in Chapter 1, the main research question stemmed from the fact that remuneration packages of CEOs in SOEs have increased over the past few years, despite the poor performance of some of these SOEs. Further, pervious research has largely been focused on public companies, with little research being available on SOEs. This study therefore focused on Schedule 2 SOEs in South Africa, in order to remedy the limited understanding of the relationship between SOEs' performance and their CEOs' remuneration. Schedule 2 SOEs are deemed key entities. They have the most autonomy compared to other SOEs, operate in a competitive marketplace, and are managed according to good governance principles.

This study aimed to determine the existence of the following:

- whether there was a relationship between CEO remuneration and SOEs' performance for the period 2006 to 2014;
- whether the relationship between CEO remuneration and SOE performance had strengthened during the period 2006 to 2014;
- the relationship between the components of *CEO remuneration* components and the components of *Company performance* for the periods 2006 to 2010 and 2011 to 2014;
- whether the CEO demographic variables — age, tenure, gender, race, and education affected the remuneration of the CEOs of the SOEs; and
- Whether there was a relationship between the CEO's remuneration and the size of the SOE.

7.3 RESEARCH METHODOLOGY AND DESIGN

The researcher applied a positivistic, deductive approach in this study. The study was, further, mainly exploratory and archival in nature, while the time horizon was longitudinal. The researcher collected secondary data from the annual reports of SOEs, and applied a quantitative methodology in analysing the data.

The researcher applied no sampling methodology, due to the small target population. All 21 South African Schedule 2 SOEs were included in the study. After applying the population selection criteria shown in Figure 14, the realised sample consisted of 18 companies. The three SOE eliminated from the process either did not operate for the entire nine-year period, or not all the annual reports for the nine-year period were available. The researcher did not perform research on human subjects, which reduced associated ethical considerations.

The researcher used accounting-based measures of company performance, namely turnover, OP, NP, ROCE, ROE, SR, LR, IFWE, and AO. These were the independent variables. The second group of independent variables was the *CEOs' demographic variables* and *Company size*. The components of *CEO remuneration*, the dependent variables, were *Fixed pay*, *STIs*, and *Total remuneration*.

The statistical package SPSS 22 was used for the descriptive analysis of the data, and EViews 8 was used to run multiple regression models on the pooled dataset. For the purposes of this study, correlations were accepted as statistically significant if the correlation exhibited a *p*-value of 5%.

Chapter 5 provided the results of the analyses of the data collected for the different variables for each of the nine years 2006 to 2014 for 18 SOEs. The descriptive statistics for the variables were discussed. Correlational and multiple regression analyses were performed for each of the nine years, using the components of *CEO remuneration* as the dependent variables, and the components of *Company performance* as the independent variables.

7.4 RESEARCH FINDINGS

Due to its exploratory nature, this research provides valuable insights into the relationship between *CEO remuneration* and the selected variables in South African Schedule 2 SOEs. This section discusses, first, the primary findings of this research

— the findings related to the research questions, and, secondly, the secondary findings of this research.

7.4.1 Primary research findings

Contrary to the widely held opinion that there is no link between company performance and CEO remuneration, the situation in South African SOEs has proved this sentiment untrue. From this research, all three *CEO remuneration* components were shown to have either a positive or a negative relationship with *Company performance*.

- There is a relationship between the CEOs' fixed pay and three of the measures of the SOEs' performance — turnover, NP, and IFWE. Due to the poor performance of the SOEs, a negative relationship was expected. However, a positive relationship was found between the CEOs' fixed pay, turnover, and NP respectively.
- A significant positive correlation was found between the STIs component of the CEOs' remuneration and three of the company performance measures. The company performance measures that displayed a statistically significant relationship with STIs were OP, NP, and turnover. However, the relationships with OP and NP were weak, compared to the strong relationship between CEOs' STIs and turnover.
- There was a relationship between the CEOs' total remuneration and five measures of company performance: OP, NP, LR, ROCE, and IFWE. OP and LR were the only measures that had a positive relationship with the CEOs' total remuneration.

Hence, in answering Research Question 1, the researcher found a relationship between the components of CEO remuneration and those of company performance, with the individual relationships generally moving in and out of the different relationship boundaries. The positive relationship between the components of the CEOs' remuneration and some of the measures of the SOEs' performance could possibly provide justification for the high levels of the CEOs' remuneration. However, the majority of the measures of company performance revealed a

negative relationship, which is a cause for concern. This could suggest that CEOs are paid for poor performance, suggesting that the relationship is not strong enough.

In answering Research Question 2, the results indicated the following:

- In the case of the CEOs' fixed pay, the analysis indicated no consistent trend in its relationship with the SOEs' performance. Turnover demonstrated a strong to very strong statistically positive relationship with the CEOs' fixed salaries throughout the study period. It was further noted that there was a downward trend the relationship between the CEO's salaries and the performance of the SOEs in the 2012/2013 financial year, with the exception of turnover.
- In the case of STIs, there was an unstable trend throughout the study period. This could suggest that SOEs do not use a range of performance targets to determine the CEOs' STIs. An upward trend was noted in the strength of the linear relationship for the 2013/2014 financial year.
- In the case of the relationship between the CEO's total remuneration and the measures of the SOEs' performance, the trend seemed to mirror that of the CEOs' fixed salaries, where the researcher did not note a consistent trend over the study period. Further, no definite pattern of improvement in the strength of the linear relationship was noted. A downward trend was noted for 2013, with the exception of turnover.

In summary, in answering Research Question 2, the results indicate no consistent trend in the relationship between the components of the CEOs' remuneration and the performance of SOEs. Turnover (having a positive relationship throughout the period) was the only exception, and played a stronger role in both the fixed salaries and total remuneration of the CEOs. The initial expectation was that the relationship between the CEOs' remuneration and the SOEs' performance would strengthen over the nine-year period, due to the effects of increased monitoring and regulation. However, the fluctuations seen appear to relate more to the macroeconomic environment than improved corporate governance (Bussin 2014).

Research Question 3 focused on analysing the relationship between the components of CEO remuneration and the measures of the SOEs' performance for the periods 2006 to 2010 and 2011 to 2014. For the period 2006 to 2010, the results indicate that:

- There is a positive relationship between the CEOs' fixed salaries and one measure of the SOEs' performance, namely turnover.
- There is a moderate to strong statistically significant positive relationship between the CEOs' remuneration and the SOEs' turnover, and a strong statistically negative relationship between the CEOs' remuneration and the SOEs' LR, ROE, and ROCE.
- There is a positive relationship between the CEOs' total remuneration and the SOEs' OP, and a negative relationship between the CEOs' total remuneration and the SOEs' NP.

The positive relationship between the CEOs' remuneration and the SOEs' performance was contrary to expectation, due to the poor performance of the SOEs. In fact, six of the eight measures of their performance declined during the period 2006 to 2011, while all the components of the CEOs' remuneration increased.

For the period 2011 to 2014, classified in this study as the aftermath of the financial crisis, a relationship was found between the CEOs' remuneration and the performance of the SOEs. However, the performance measures with which the components of the CEOs' remuneration had a relationship were, in some instances, different for the two periods (before and during, and after the financial crisis).

- The CEOs' fixed salaries showed a positive relationship with the SOEs turnover and LRs, and a negative relationship with their IFWE.
- The measures of the SOEs' performance that displayed a strong to very strong statistically significant positive relationship with the CEOs' STIs are turnover, OP, and NP. Further, a very strong statistically negative relationship was found between the STIs and the SOE's ROCE.

- A positive relationship was found between the CEOs' total remuneration and the SOEs' ROE, and a negative relationship was found between the CEO's total remuneration and the SOEs' ROCE and IFWE.

SOEs typically have close political connections with the government. The literature suggests that IFWE signals poor management or board oversight, which could result in a loss of crucial political connections for these SOEs. As a result, the board and shareholders could reduce executive remuneration to penalise them for such a loss. From the negative relationship between the components of the CEOs' remuneration and the SOEs' IFWE, it could be inferred that CEOs are penalised for IFWE by receiving lower remuneration.

Research Question 4 aimed to establish to what extent the CEOs' demographic variables affected their remuneration. The results indicate the following:

- In the case of fixed pay, there is a relationship with the CEO's age in years, gender, tenure, and level of education. It is evident that male CEOs of SOEs earn more than their female counterparts. However, this finding should be interpreted with caution, as the sample contained only 19.2% female CEOs. Surprisingly, the results revealed that the CEOs with a bachelor's degree earned more than those with an honours degree. The expectation, based on previous research, was that CEOs with a higher level of education would earn more. The positive relationship with tenure suggests that, as CEOs' experience increases, their worth to the company increases, resulting in a higher fixed pay. It was further noted that Coloured CEOs earned more fixed pay than white CEOs did. This suggests that race has an effect on the fixed salaries of CEOs in South African SOEs.
- In the case of STIs, a weak positive relationship existed with tenure, suggesting that STIs will show a weak increase as a CEO's tenure increases.
- In the case of total remuneration, there was a negative relationship with race and education, and a positive relationship with tenure. The analysis of this dataset showed that a CEO with a Master's degree would earn less than a CEO with a bachelor's degree, while the positive relationship with tenure

suggests that the longer a CEO remains with an SOE, the higher his or her total remuneration would be. This suggests that the CEOs are remunerated for years of experience, and not according to their level of education. The results further reveal that black African CEOs earn more than white CEOs.

Based on the findings for Research Question 4, it could be argued that an SOE's performance may improve when the CEO is remuneration in line with his or her preferences, which may be related to personal circumstances. These circumstances are likely to change over time, suggesting that reward strategies should be flexible, in order to accommodate these circumstances.

The aim of Research Question 5 was to determine whether there is a relationship between the components of the CEO's remuneration and the size of the SOE. The results showed the following:

- The size of the SOE is not a statistical predictor of the CEO's fixed pay.
- There is a strong positive relationship between the CEO's STIs and the size of the SOE.
- An SOE being classified as very large in terms of revenue (R2.54bn to R27.6bn) and assets (R3bn3 to R78.8bn) has an effect on the CEO's total remuneration.

7.4.2 Secondary research findings

The secondary research findings provide additional context to the relationship between CEOs' remuneration and the performance of South African SOEs.

- The growth in the medians of the components of CEO remuneration showed fluctuation over the study period. However, STIs' movement was more volatile during the study period than that of the other two remuneration components. A worrying observation was the weakening of the relationship between the STIs component of CEO remuneration and the SOEs' performance. In conjunction with the weakening relationship between the STIs and company

performance, the descriptive statistics indicated an increase in the CEOs' fixed pay during the study period.

- The decline of STIs, coupled with the increase in fixed pay during the nine-year period, suggests that CEOs have moved away from STIs, preferring a fixed pay, possibly to avoid performance-related considerations in the determination of their remuneration. This has created a misalignment between what the CEOs are being paid and the performance of the SOEs — an inverse relationship between some measures of SOE performance and the CEOs' remuneration.

- The results of the present study revealed that the CEOs received high STIs during the worst period of the financial crisis, even when the SOEs' performance was poor. Public anger over the amounts top executives are paid, including bonuses irrespective of company performance, might be harmful to SOEs' reputation. This has a ripple effect — people lose trust in the company, and the company becomes hesitant to pay bonuses. This is especially true for companies under continuous public scrutiny (such as SOEs) and in times when high unemployment rates prevail (Nellkrans & Dogan 2015), such as in South Africa.

- An important observation from the descriptive statistics was the decline in the performance of the SOEs in the period 2006 to 2011, as evidenced by the decline in the results of six of the eight measures of the SOEs' performance. As found by Otieno (2014), the deterioration in the performance of the SOEs was most evident in 2009. However, the components of the CEOs' remuneration did not show a similar decline during the same period. In fact, their fixed salaries increased by 11% year on year, STIs increased by 21% year on year, and their total remuneration increased by 14% year on year for the period 2006 to 2011. This disconnect signals that the SOEs' remuneration committees did not adjust the CEOs' remuneration to reflect the poor performance of the SOEs. However, it could also suggest that the CEOs were compensated for the difficult task of managing the SOEs during a period of economic turmoil. This would indicate that the decline in the SOEs'

performance is considered an exogenous factor for which the CEOs are not held accountable (Nellkrans & Dogan 2015).

- Furthermore, the above constituted a value-deteriorating step for government as a shareholder, as the CEOs' remuneration increased despite the poor performance of the SOEs. The CEOs therefore received remuneration that was not aligned to the performance of their SOEs. This is contrary to the proposition by Jensen and Meckling (1976) that shareholders appoint executives to act in their best interests. Thus, although CEO remuneration in South African SOEs does not necessarily seem excessive, there are concerns about the separation of SOEs' company performance from the CEOs' remuneration. However, considering the responsibilities and risk associated to the position, CEOs may not be overpaid although their remuneration is not aligned to SOE performance.

- Further, the misalignment between SOEs' performance and the CEOs' remuneration could be evidence of inappropriately designed remuneration packages that promote self-interested behaviour by management (Kang, Kumar, & Lee 2006). This corroborates the discussion on self-interested behaviour of executives in Chapter 2. It also supports the postulation of Fontrodona and Sison (2006) that individuals motivated by economic benefits will attempt to maximise their own benefits. This self-interested behaviour is contrary to the tenet of the stewardship theory, as discussed in Chapter 2. However, it supports the notion of the public choice theory, where the primary consideration in the political sphere is self-interest (Shaw 2008; Mbo & Adjasi 2013). It would have been expected that, due to the high level of scrutiny and regulation of SOEs, remuneration would be controlled and appropriate (Mengistae & Xu 2004). However, this does not seem to be the case in South African SOEs.

7.3 CONCEPTUAL FRAMEWORK

Figure 2 in Chapter 1 presented the theoretical framework on which this study was based. From the results of the empirical investigation, discussed in Chapter 5, the conceptual framework for this study is presented in Figures 33 to 35.

Figure 33 Conceptual framework: *Fixed pay*

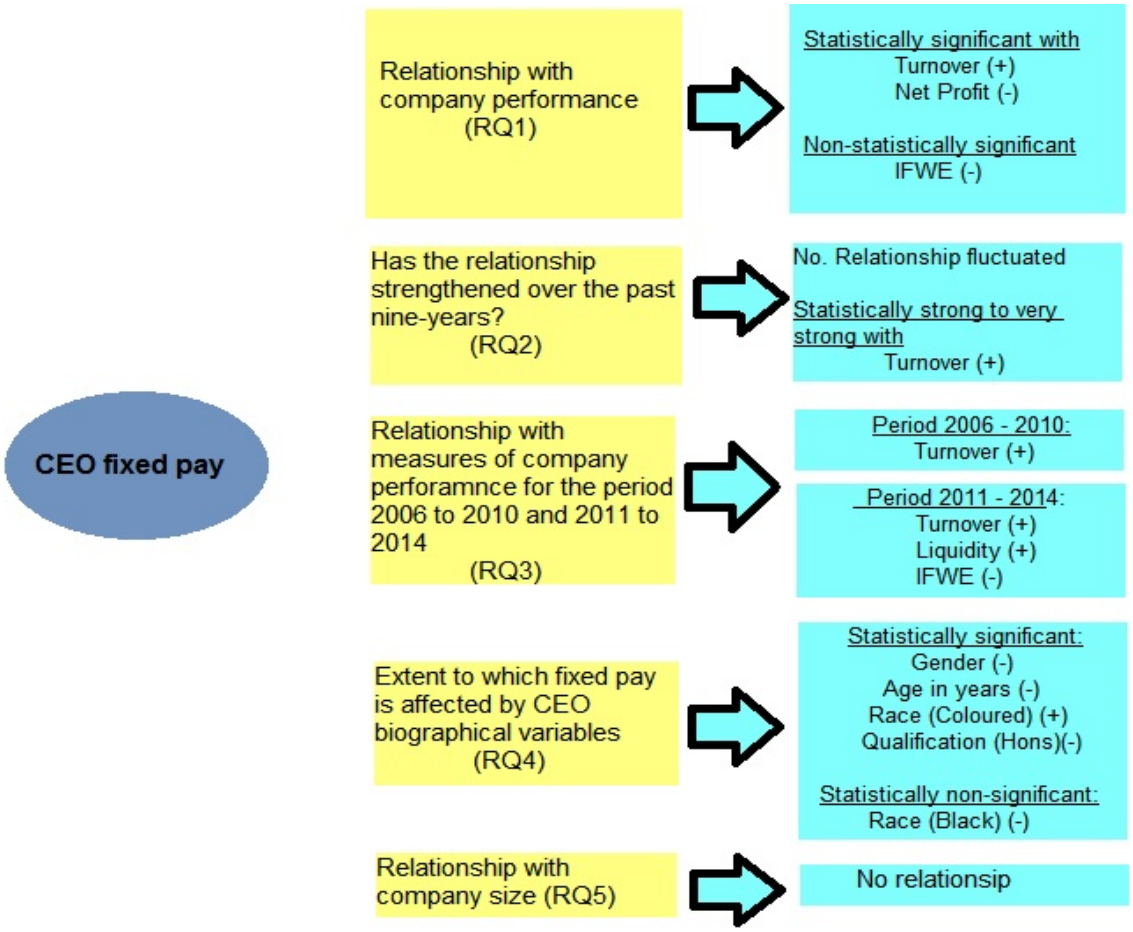


Figure 34 Conceptual framework: *STIs*

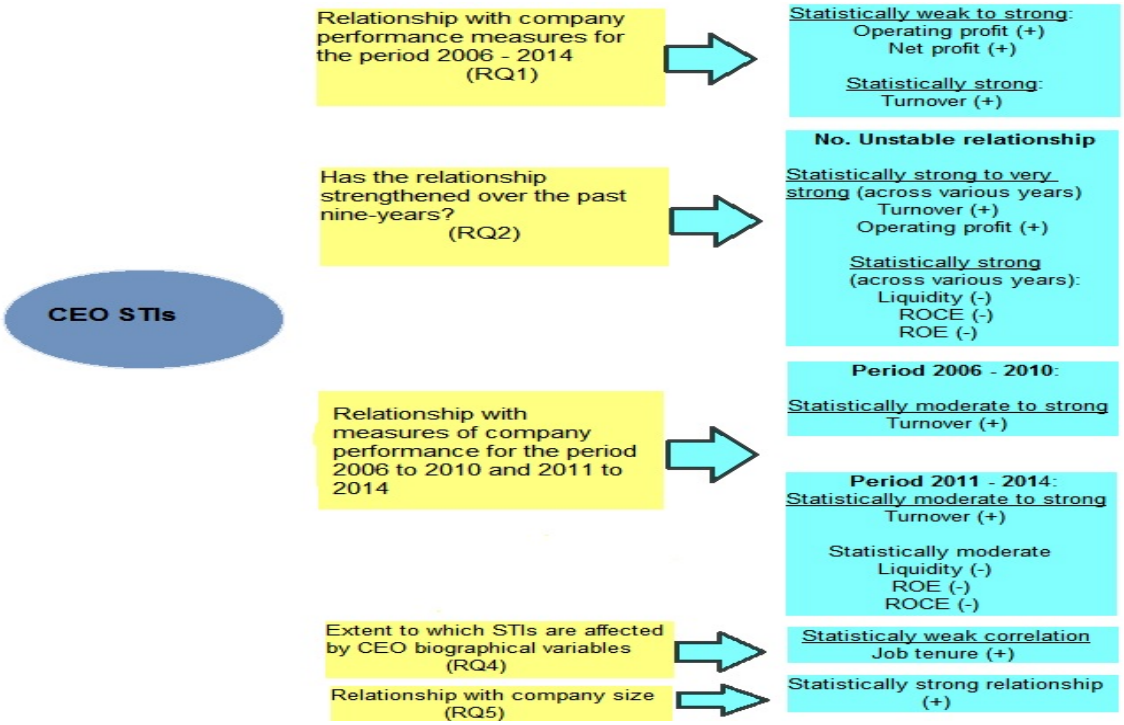
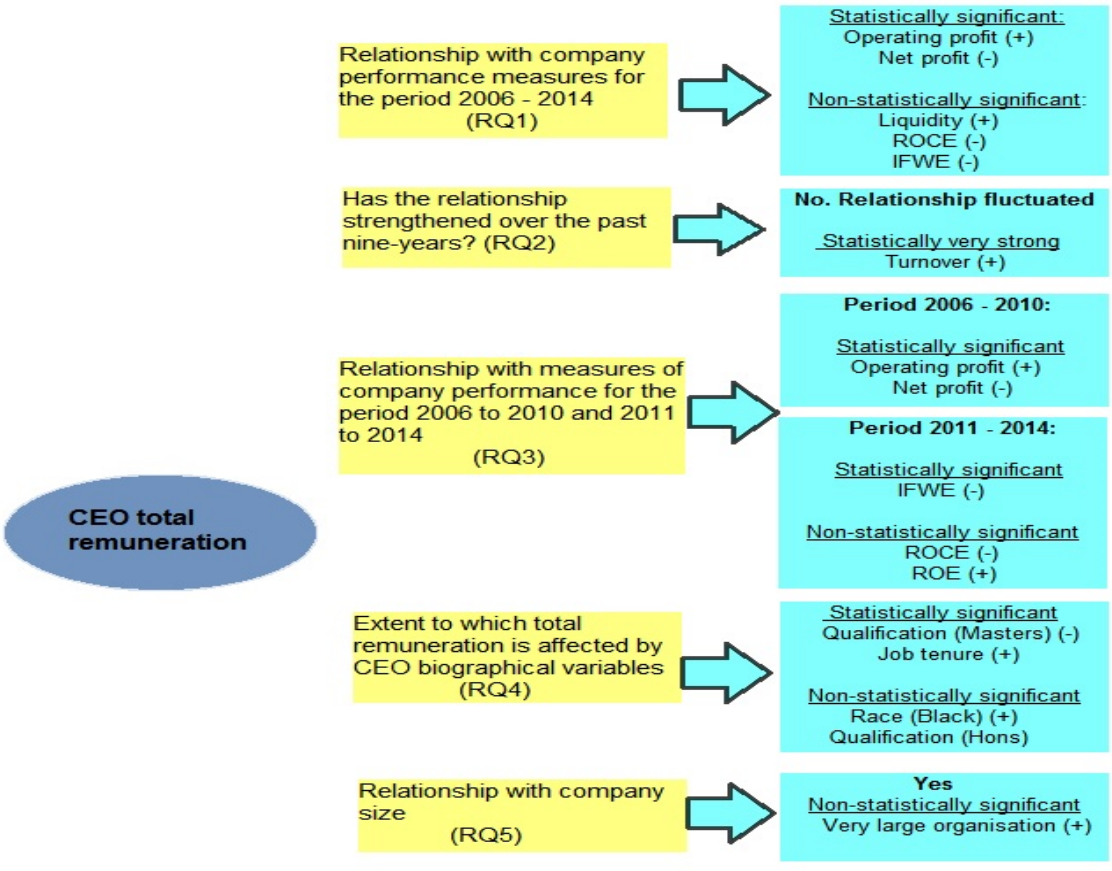


Figure 35 Conceptual framework: *Total remuneration*



During the study, the attention moved from the key concepts and theoretical frameworks underpinning the context of the study (Figure 2) to the conceptual and practical outcomes of the study (Figures 33 to 35). Robson (2011) defines a conceptual framework as a structure of beliefs, suppositions, theories, and concepts that support and inform a research study. Figures 33 to 35 therefore visually illustrate the researcher's understanding of the relationships between the components of CEO remuneration and the dependent variables (the components of *Company performance* and *CEO demographic variables*).

7.4 RECOMMENDATIONS

This study provides an original contribution with regard to the relationship between CEOs' remuneration and the performance of Schedule 2 SOEs in South Africa. This will be of particular interest to investors and other stakeholders, such as unions and regulators, who expect CEOs' remuneration to be aligned with the SOEs' performance.

7.4.1 Recommendations to stakeholders

In managing the relationship between SOEs' performance and their CEOs' remuneration, it is recommended that the relevant stakeholders consider the following:

- Regarding the effect of the CEO's preferences in determining his or her remuneration, it is recommended that SOEs develop a formal, standardised policy that deals specifically with discretion with regard to the strategy for the CEO's rewards;
- Regarding the alignment of CEO's remuneration with SOEs' performance, the current notable misalignment could be evidence of inappropriately designed remuneration frameworks that promote self-interested behaviour by CEOs. It is therefore recommended that SOEs develop a remuneration framework that ensures alignment between SOEs' performance and the CEOs' remuneration;
- Regarding company performance measures that are important when determining CEOs' remuneration, it is recommended that SOEs' boards and

remuneration committees meticulously consider the following measures to determine remuneration: turnover, operating profit, net profit liquidity and IFWE. This should ensure that the right measures are used to determine the right components. Further, more attention needs to be paid to different accounting- and market-based measures in measuring CEOs' performance;

- Jensen *et al.* (2004) maintain that inappropriate measurement of performance leads to inappropriate incentives. SOEs need to communicate measures of CEO performance to CEOs, stakeholders and employees within the company, with the remuneration of CEOs clearly linked to these measures, to ensure high performance of SOEs;
- Once SOEs have identified the suitable and relevant measures of their performance, these need to be linked to realistic and achievable targets for CEOs, in alignment with stakeholders' expectations;
- SOEs need to develop well-defined, all-inclusive, and contemporary guidelines for setting CEOs' remuneration. As discussed in Chapter 3, the DPE provided remuneration guidelines in 2007. However, not all SOEs follow these guidelines, and of the application of these guidelines occurs primarily in SOEs that report to the DPE. Furthermore, these guidelines are not linked to the components of SOEs' performance. The current guidelines are therefore obsolete, and need to be appropriate for the markets in which SOEs operate, with specific regard for the skills and talent that SOEs need to attract;
- As noted in Chapter 6, the inconsistent relationship between CEOs' STIs and SOEs' performance may suggest that SOEs do not follow a standard policy when awarding bonuses. Moreover, the present research indicates inconsistencies within SOEs regarding remuneration of their CEOs. The development of an overarching framework for remuneration for Schedule 2 SOEs is recommended, in line with recommendations by the Presidential Review Committee on State-Owned Entities (2013);
- SOE boards should hold CEOs liable for the performance of the SOE. This ought to ensure that CEOs do not act purely out of self-interest, but that the interests of the shareholder are also taken into consideration;

- SOEs' remuneration committees should ensure that non-performing CEOs do not receive enormous salary increases or STIs. Therefore, CEOs should be rewarded or penalised, depending on the performance of their SOEs;
- SOE management need to disclose executive remuneration in a clear and understandable manner. SOEs should state "one figure" for remuneration that includes the value of all remuneration paid during the year, including salary, bonus, pension, benefits, and the value of any incentives granted.

7.4.2 Recommendations to remuneration- and HR practitioners

In designing any HR programme, remuneration specialists and HR practitioners have the opportunity to ensure that the design principles and features of the programme are aligned with market practices and the organisation's objectives. Based on the results of the present study, it is recommended that remuneration specialists and HR practitioners ensure that:

- SOEs' remuneration committees set remuneration in an equitable and fair manner, and are aware of social out-group bias (the tendency to have negative views about people who are not members of one's own group);
- As per findings of Maloa (2015), inconsistencies and absence of checks and balances exist in terms of the implementation of transformation in executive remuneration. Remuneration specialists and HR practitioners therefore need to ensure that the *Employment Equity Act (EEA) 55 of 1998* is adhered to in setting CEOs' remuneration. The EEA requires employers to take measures to progressively reduce a disproportionate income differential and to institute an equal pay for equal work philosophy;
- STI payments are aligned with agreed-upon performance objectives. These objectives should not be repeated across incentives and if the performance criteria are not met, they should not be re-tested in a subsequent year;
- SOEs' remuneration committees calculate CEOs' remuneration according to a prescribed and rational method and in a transparent way, which will ensure that the shareholders' and the taxpayers' interests are protected;
- A remuneration framework and policy for CEOs of SOEs is developed that is fair and responsible with reference to all employees;

- The development of a tool that sets out greater clarity in terms of the breakdown and the necessary EEA targets, in setting CEO remuneration. The purpose of this tool would be to establish equity in CEO remuneration pay levels in order to assist South African SOEs in the process of implementing transformation;
- Benchmarking of CEOs' remuneration is appropriate and not just an alignment of their remuneration to private sector salaries.

7.5 CONTRIBUTION OF THE STUDY

The primary contribution of this research is its extension of the literature on CEO remuneration practices in South Africa. This research examined the popular belief that CEOs' pay should reflect the performance of the company. The main aim was to examine whether there is a relationship between CEOs' remuneration and the performance of South African Schedule 2 SOEs. This study opened up new and potentially fruitful avenues for future research.

From a theoretical perspective, this study provides a mini meta-analysis of studies that found either a negative relationship or no relationship between CEOs' remuneration and companies' performance. Past research on executive remuneration and company performance concentrated mainly on public companies. This study therefore contributes new knowledge to the scarce research on SOEs' performance and CEOs' remuneration, particular with regard to the relationship between the constructs in the South Africa context.

The present study found that there is a relationship (either negative or positive) between the components of CEOs' remuneration and the performance of South African Schedule 2 SOEs. Further, as with Otieno's (2011) study, public companies could use the results of this study to compare how their alignment of executive remuneration to company performance measures up to that of the SOEs, in the context of the debate around excessive executive remuneration in both SOEs and public companies.

This research is one of few studies that assessed the relationship between CEO remuneration and company performance before and during, as well as after the financial crisis (2006 to 2014). The study contributes to the literature on the effects of CEO remuneration on company performance in the pre- and post-crisis periods. The aim was to test how the financial crisis had impacted the relationship between the constructs. In this respect, criticisms and concerns regarding excessive executive remuneration seem valid, especially given the negative impact of the financial crisis on South Africa's and the global economy.

This research focused on different components of executive remuneration, to determine the relationship of these components with components of company performance, as suggested by Otieno (2011) and Farmer *et al*. (2010). The present researcher included three components of executive remuneration, namely fixed pay, STIs, and total remuneration, and tested the relationship of each with the components of company performance. In doing so, this study shed more light on the relationship between executive remuneration and company performance.

Otieno further recommended that future research extend the period of such a study, to ascertain whether the results obtained were applicable only to the short term, or if there is a long-term association between executive remuneration and company performance. Furthermore, in their study, Deysel and Kruger (2015) propose that researchers concentrating on a short-term horizon of less than seven years may produce skewed research findings, thereby impeding the ability to reach conclusions. The period of the current study was nine years (2006 to 2014). This study therefore addressed the concerns of Otieno (2011) and Deysel and Kruger (2015). The present researcher selected a period of nine years to ensure a long-term view, as investors deem this a sufficient period to account for possible short-term recessions or fluctuations (Deysel 2013).

Ochien'elly (2012) posits that one category of variables distinctly lacking from the majority of empirical models explaining the pay–performance relationship is CEOs' demographic information. The present study included the demographic variables of

age, tenure, gender, race, and education, thereby contributing to the knowledge of the effect of these variables on CEOs' remuneration.

Lastly, with the focus on the inequalities of remuneration between executives and employees, it has become important that all remuneration practices and strategies are beyond criticism, and reflect justifiable and realistic reasoning.

Literature, theories, and industry surveys brought forward by researchers, consultants, and scholars have not sufficiently investigated the relationship between CEO remuneration, remuneration strategies, and organisational performance, especially within the South African context. Had these contributions provided conclusive proof of the relationship between pay and performance, there would be no debate around equitable remuneration in South Africa or abroad. This study may serve as a useful source of information for labour representatives, organisations, human resources practitioners, and remuneration committees in setting strategies for CEOs' remuneration in such a way as to increase the likely impact thereof on company performance.

7.6 SUGGESTIONS FOR FUTURE RESEARCH

Despite the fact that this study provides meaningful insights into the relationship between CEOs' remuneration and various variables, the researcher highlighted several limitations of the study in Chapter 4. These, in conjunction with additional observations made during the research project, suggest that further research is necessary to address these limitations. The following areas for future research are suggested:

- In this research, the researcher did not consider the different industries/sectors within which the SOEs under study operated. Duffhues and Kabir (2008), and Goh and Gupta (2010), among others, postulate that the type of industry within which a company operates significantly influences the CEO's remuneration. Further, considering that Henderson *et al*. (2006) found that the influence of tenure is industry-specific, future studies could focus on the specific industries within which SOEs operate.

- The focus of this study was South African SOEs, and it may be meaningful to undertake a study of SOEs in other countries, in order to compare the results. This will clarify whether the association between company performance and CEO remuneration found in the present study is only applicable to South African SOEs, or if a similar alignment can be observed in SOEs in other countries.
- The relevance of IFWE in relation to the components of CEO remuneration in SOEs was noted. However, there is a paucity of literature that either supports or disagrees with this finding. It is therefore recommended that future studies explore this relationship in more depth.
- This study investigated the relationship between STIs and long-term company performance, with LTIs excluded, because, as mentioned in Chapter 1, few SOEs offer LTIs. Future studies could include LTIs, as the exclusion of LTIs as a component of CEO remuneration may have led to a significant aspect CEOs' remuneration and its effect on company performance not being considered. Further, the exclusion of LTIs might create prejudice against the pay–performance relationship.
- As put forward in this research, the "political" objectives of SOEs could play a role in the setting of CEO remuneration as well as company performance. Therefore, reporting to a political functionary with a stronger political focus can even outweigh the financial results when it comes to recognition and reward of the CEOs. It is therefore recommended that future studies include a political dimension as a variable.
- Attaway (2000) suggests that, in order for a study to be able to determine whether CEO remuneration is linked to company performance, the same CEO should be in place for the period under study. Ngwenya and Khumalo (2012) applied this criterion in their study. The present study, however, did not meet this criterion, and it is therefore recommended that future studies replicate this study using data for a period when the same CEO managed an organisation, to determine whether and how the results differ from those of the current study.
- Considering that employee strikes are an ongoing phenomenon in South Africa, further studies on CEOs' remuneration in relation to that of employees

could add quantifiable data for use in annual wage negotiations between organised labour and business.

- Although an investigation into the culture of teamwork did not form part of this research, Beer and Katz (2003) found that neither executive bonuses nor any other aspect of remuneration predicted organisational performance. These authors found that the only variable that significantly predicted company performance was the extent to which the organisational culture is characterised by teamwork. It would therefore be interesting for future researchers to assess whether this holds true for South African SOEs.
- It is recommended that future research focus on the self-interested behaviour of CEOs to determine whether it plays in role in setting CEO remuneration and what influence, if any, it has on the relationship between CEO remuneration and company performance.
- As Conyon (2006) suggests, financial incentives are only one factor motivating executives. Executives are as likely to be motivated by other factors such as intrinsic factors of the job, career concerns, social norms, and the like. It is therefore recommended that future studies include these factors in their study.

7.7 CONCLUDING REMARKS

In this study, the researcher sought to contribute to the understanding of the relationship between CEOs' remuneration and the performance of South African SOEs. The results of abundant empirical research examining the relationship are surprisingly inconsistent and, at times, even contradictory. In addition, the role of executive remuneration in skewing income equality is cause for concern.

The statistics on CEO remuneration provided in Chapter 2 show the rapid increase in CEO remuneration over the last decades. A great deal of the public debate on CEO remuneration has highlighted the steady eroding of income equality (and the growing wage gap) accelerating in recent years. The discussion provided in Chapter 2 emphasised the increasing gap between CEO remuneration and salary received by ordinary employees. The increase in CEO remuneration, as well as the

accompanying misalignment between remuneration and performance of the SOEs, was discussed in Chapters 5 and 6.

Although the present researcher expected to find a negative relationship between the CEOs' remuneration and the SOEs' performance, this was not the case in all instances. Some positive relationships were found in this study. The results suggest that there is indeed a relationship between the components of CEO remuneration and some of the measures of the performance of South African SOEs. Turnover seemed to be the most stable measure of SOE's performance, as could be seen from the discussion of the trend analysis. This could suggest that turnover is the primary measure used in determining the remuneration of the CEOs of South African SOEs. This could suggest that SOEs generate sufficient turnover to sustain their operations, without being overly dependent on government grants and subsidies (Ngwenya & Khumalo 2012).

While the results of the present study suggest that there is a relationship between CEOs' remuneration and SOEs' performance, the declining performance of SOEs during the study period, despite high CEO remuneration, is a concern. Moreover, the evidence of a negative relationship between CEOs' remuneration and some of the measures of the SOEs' performance suggests that the CEOs' remuneration is not aligned with all of the measures of the SOEs' performance, which may be a contributing factor with regard to poor performance of South African SOEs. It also suggests that the dissatisfaction with the CEOs' remuneration may be justified. This indicates that challenges still exist in maintaining a link between company performance and CEO remuneration.

Notwithstanding the fact that the CEOs' fixed pay and total remuneration increased during the study period, these components did not show the runaway growth suggested in the media by social commentators. It is questionable whether the average year-on-year increase of between 8% and 9% over the nine-year period was larger than the increases received by employees. However, the results from this study revealed that the CEOs' fixed pay and total remuneration were not

dependent on the performance of their SOEs. These remuneration components continued to increase, even when the SOEs were performing poorly.

The findings of this research support the notion that successfully linking pay to performance is dependent on appropriate performance targets and measures of both the CEO's performance and that of the organisation. Because there is no regulation of performance targets and measures used by SOEs, SOEs use diverse performance targets and performance measures. All performance measures have their limitations, but some take a longer-term view. To ensure the long-term success of SOEs, more long-term performance measures should be incorporated in SOEs' remuneration strategies.

The results of this study indicate that there is a need in South Africa to complement the relationship between company performance and CEOs' and executives' pay through adherence to the recommendations of King III (or King IV, to be implemented with effect from 1 April 2017).

Never in the history of South Africa has it been more important to ensure that executive remuneration is aligned to company performance. This is due to the prevailing economic climate, as well as the high levels of unemployment and social unrest. High executive remuneration that is not linked to company performance poses a long-term risk, not only the continued existence of SOEs, but also to the broader society. Until executive remuneration is perceived to be fair and aligned with company performance, it will continue to receive intense criticism from unions, regulators, shareholders, and the public.

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ANNEXURE A

EXECUTIVE REMUNERATION THEORIES

Theory	Proponent (s)	Explanation
Agency theory	Bearl and Means 1932	Separation of ownership and control causes agency costs
Class hegemony theory	Gomez-Mejia 1994	Fellow CEOs as board numbers follow own interests
Efficiency wage theory	Prendergast 1999	Premiums paid to CEOs to incentivise extra efforts
Figurehead theory	Ungston and Steers 1984	CEOs are paid as leaders and figureheads, rather than for results
Human capital theory	Agarwal 1981	Executive remuneration based knowledge and skills
Managerialism theory	Gomez-Mejia 1994	Managers have absolute power and control to pursue own interests
Marginal productivity theory	Gomez-Mejia 1994	CEOs should receive compensation based on value added
Prospect theory	Wiseman and Gomez-Mejia 1998	CEOs paid for risk aversion
Social comparison theory	O'Reilly, Main, and Crystal 1998	Board members' pay informs top management's pay
Tournament theory	Lazear and Rosen 1981	Executive remuneration sets incentives for direct subordinates
The pay compression hypothesis	Lazear 1989 1991	The pay difference between managers may be smaller than the productivity difference, because pay compression will lead to high performance

Source: Ulrich (2010: 408), Otten (2008: 28) and Kubo (2010: 85-86)

Extreme values — *CEO remuneration* variables

			Case Number	Value
CEO salary	Highest	1	15	8416000
		2	100	7931000
		3	28	6500000
		4	29	6402150
		5	127	5769000
	Lowest	1	71	870000
		2	144	887158
		3	45	968714
		4	70	974000
		5	90	985855
CEO total benefits	Highest	1	34	13218772
		2	33	7430452
		3	100	5508000
		4	30	4692588
		5	124	4324231
	Lowest	1	162	0
		2	161	0
		3	159	0
		4	158	0
		5	157	0[a]
CEO bonus	Highest	1	129	6473000
		2	133	5790000
		3	28	5200000
		4	51	4392000
		5	147	4385000
	Lowest	1	162	0
		2	161	0
		3	160	0
		4	159	0
		5	157	0[a]
TCEO total remuneration	Highest	1	34	19108837
		2	100	13439000
		3	33	12827648
		4	129	12473000
		5	30	12067321

	Lowest	1	90	1077074
		2	119	1150518
		3	89	1171937
		4	88	1184692
		5	71	1360000
TCEO total remuneration adjusted for *Job tenure* (1% per year)	Highest	1	34	18933609
		2	100	12901440
		3	33	12699372
		4	129	12348270
		5	30	11946648
	Lowest	1	90	1068996
		2	119	1139013
		3	89	1152366
		4	88	1160998
		5	71	1346400

a. Only a partial list of cases with the value 0 are shown in the table of lower extremes.

Extreme values — *Company performance* variables

			Case Number	Value
Turnover/Revenue (R'000)	Highest	1	100	139506000000
		2	101	128869000000
		3	102	114760000000
		4	103	91447000000
		5	104	71209000000
	Lowest	1	83	93908207
		2	84	113460341
		3	87	127517726
		4	89	133657847
		5	88	139824507
(EBIT) Operating profit_income/loss (R'000)	Highest	1	102	22329000000
		2	32	17138000000
		3	36	14677000000
		4	103	14515000000
		5	34	14482000000
	Lowest	1	29	-11047000000
		2	105	-3195000000
		3	109	-2307000000

		4	59	-1429210000
		5	55	-1414991000
Net Profit/Loss for the year (R'000)	Highest	1	32	37585000000
		2	102	13248000000
		3	36	9321000000
		4	35	8849000000
		5	103	8356000000
	Lowest	1	29	-11499000000
		2	105	-9181000000
		3	109	-2554000000
		4	154	-1977000000
		5	55	-1432145000
Liquidity ratio	Highest	1	63	10.487668
		2	58	10.409452
		3	57	9.471043
		4	60	9.350079
		5	122	8.779604
	Lowest	1	161	.044289
		2	73	.056116
		3	160	.060898
		4	80	.070007
		5	74	.086905
Solvency ratio	Highest	1	50	9.765425
		2	51	8.817231
		3	136	7.860097
		4	49	7.774494
		5	52	6.200411
	Lowest	1	109	.820276
		2	162	.833010
		3	87	.834044
		4	161	.850073
		5	160	.855085
ROCE	Highest	1	109	4.462282
		2	42	2.866288
		3	45	.864518
		4	44	.827029
		5	43	.822581
	Lowest	1	99	-.477744
		2	110	-.410182

		3	29	-.387655
		4	15	-.362349
		5	96	-.304511
ROE	Highest	1	85	4.987218
		2	99	2.269941
		3	110	1.375736
		4	32	1.241905
		5	69	.775487
	Lowest	1	111	-1.902935
		2	90	-.915019
		3	98	-.867868
		4	84	-.829881
		5	96	-.640636
Total *Irregular, fruitless and wasteful expenditure*	Highest	1	130	8264500000
		2	10	3418809000
		3	55	2531011000
		4	38	2231756411
		5	56	1009422000
	Lowest	1	162	0
		2	161	0
		3	160	0
		4	159	0
		5	158	0[a]

UNISA university of south africa

27 May 2013

Ref #: 2013_CEMS_022

COLLEGE OF ECONOMIC AND MANAGEMENT SCIENCES
RESEARCH ETHICS REVIEW COMMITTEE (CRERC)

To the researchers:

Mrs. ML Bezuidenhout (bezuiml@unisa.ac.za; 012-429 4535)

Dr. Marc Bussin

Prof. M Coetzee (staff # 1114824)

This is to certify that the application for ethics clearance submitted by

Mrs. ML Bezuidenhout (student nr # 50610295)

For a *research project making use of secondary data, entitled:*

The Relationship between CEO remuneration and company performance in South African State Owned Entities

*has received **ethics approval** from the College of Economic and Management Sciences Research Ethics Review Committee.*

You may proceed with the study provided that the research ethics principles outlined by the Unisa Policy on Research Ethics are adhered to throughout the entire project. Please be advised that the committee needs to be informed should any part of the research methodology as outlined in the Ethics application (Ref. Nr.2013_CEMS_022) change in any way.

The College Research Ethics Review Committee wishes you all the best with this research undertaking.

Kind regards,

Dr. RG Visagie

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ANNEXURE D

Correlation coefficient — *Fixed pay* and *Company performance*

(n = 18)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Turnover	0.63**	0.51*	0.51*	0.77**	0.71**	0.51*	0.64**	0.65**	0.74**
Operating profit	0.43	0.45	0.28	0.28	0.55*	0.44	0.58*	0.10	0.72**
Net profit	0.41	0.37	0.17	-0.19	0.29	0.34	0.49*	-0.23	0.66**
Liquidity	-0.26	-0.34	-0.17	-0.14	-0.23	-0.16	0.09	-0.55*	-0.41
Solvency	-0.22	-0.26	-0.15	-0.11	-0.07	-0.04	-0.00	-0.38	-0.23
ROCE	-0.26	-0.01	-0.35	-0.27	-0.17	0.04	-0.34	-0.50*	0.19
ROE	0.36	-0.43	-0.34	-0.20	0.12	-0.12	-0.00	-0.20	0.14
IFWE	0.53*	-0.02	-0.00	-0.18	0.07	0.14	0.17	-0.23	-0.18
**** p < .01 (2-tailed)** *** p < 0.05 (2 tailed)**									

Correlation coefficient — *STIs* and *Company performance*

	2006 (n=13)	2007 (n=15)	2008 (n=12)	2009 (n=12)	2010 (n=13)	2011 (n=12)	2012 (n=11)	2013 (n=10)	2014 (n=10)
Turnover	0.63*	0.77**	0.55	0.31	0.40	0.07	0.38	0.35	0.76*
Operating profit	0.43	0.44	0.34	0.15	0.48	0.57	0.71*	-0.30	0.82**
Net profit	0.48	0.47	0.43	0.05	0.43	0.48	0.58	-0.30	0.86**
Liquidity	-0.62*	-0.09	-0.18	0.04	-0.45	0.01	0.11	-0.19	-0.50
Solvency	-0.39	0.09	0.18	0.15	-0.48	0.34	0.36	-0.37	-0.02
ROCE	-0.01	0.39	0.40	-0.59*	-0.14	0.42	-0.19	-0.69*	0.38
ROE	0.34	0.64*	-0.47	0.64*	0.32	0.25	-0.13	-0.30	0.44
IFWE	-0.21	0.15	-0.41	-0.27	0.05	-0.39	0.14	0.44	0.18
**** p < .01 (2-tailed)** *** p < 0.05 (2 tailed)**									

Correlation coefficient — *Total remuneration* and *Company performance*

	2006 (n=13)	2007 (n=15)	2008 (n=12)	2009 (n=12)	2010 (n=13)	2011 (n=12)	2012 (n=11)	2013 (n=10)	2014 (n=10)
Turnover	0.72**	0.70**	0.79**	0.74**	0.50*	0.71**	0.73**	0.76**	0.74**
Operating profit	0.46	0.36	0.21	0.20	0.66**	0.66**	0.75**	0.26	0.79**
Net profit	0.53*	0.29	0.32	0.24	0.59**	0.58**	0.53*	0.14	0.69**
Liquidity	-0.52*	-0.17	0.05	0.03	-0.39	-0.33	-0.28	-0.63**	-0.11
Solvency	-0.22	-0.03	0.25	0.34	0.06	0.10	0.29	-0.30	-0.11
ROCE	0.01	-0.10	-0.32	-0.44	-0.13	-0.00	0.21	-0.11	0.39
ROE	0.31	-0.53*	-0.31	-0.31	0.29	-0.06	0.07	-0.24	0.07
IFWE	0.01	-0.20	-0.19	-0.21	-0.14	-0.23	0.20	-0.13	-0.12
**** p < .01 (2-tailed)** *** p < 0.05 (2 tailed)**									

ANNEXURE E

E.1: *FIXED PAY* AND *COMPANY PEFORMANCE*

Panel unit root test: Summary
Series: CEOSALARY
Date: 08/04/15 Time: 15:42
Sample: 2006 2014
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin, & Chu t*	-1.27133	0.1018	18	126
Null: Unit root (assumes individual unit root process)				
Im, Pesaran, and Shin W-stat	0.67222	0.7493	18	126
ADF - Fisher Chi-square	28.5664	0.8064	18	126
PP - Fisher Chi-square	55.3714	0.0205	18	144

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/04/15 Time: 15:47
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (balanced) observations: 144
Convergence achieved after 11 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.02E-05	7.80E-06	3.872878	0.0002
EBITOPERATINGPROFIT_INCO	4.41E-05	4.62E-05	0.955059	0.3413
NETPROFITAFTERTAXR000	-7.34E-05	2.98E-05	-2.460348	0.0152
LIQUIDITYRATIOS	65696.59	65255.70	1.006756	0.3159
SOLVENCYRATIO	-8801.988	106403.7	-0.082723	0.9342
ROCE	104220.5	148395.3	0.702317	0.4837
ROE	-18989.40	100384.3	-0.189167	0.8503
TOTALIRREGULAREXPENDITUR	-9.87E-05	7.82E-05	-1.261953	0.2092
DUM_AUDIT1	-20617.58	369254.5	-0.055836	0.9556
DUM_AUDIT2	-28699.62	211250.6	-0.135856	0.8921
DUM_AUDIT4	-356500.1	797353.6	-0.447104	0.6555
C	2774276.	349439.6	7.939214	0.0000
AR(1)	0.664009	0.066315	10.01299	0.0000

R-squared	0.650092	Mean dependent var	2971893.
Adjusted R-squared	0.618039	S.D. dependent var	1344702.
S.E. of regression	831066.1	Akaike info criterion	30.18475
Sum squared resid	9.05E+13	Schwarz criterion	30.45285
Log likelihood	-2160.302	Hannan-Quinn criter.	30.29369
F-statistic	20.28199	Durbin-Watson stat	2.535566
Prob(F-statistic)	0.000000		

Inverted AR Roots .66

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/04/15 Time: 15:49
Sample (adjusted): 2007 2014 (Baseline model)
Periods included: 8
Cross-sections included: 18
Total panel (balanced) observations: 144
Convergence achieved after 9 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.02E-05	7.70E-06	3.929788	0.0001
EBITOPERATINGPROFIT_INCO	4.45E-05	4.50E-05	0.988874	0.3245
NETPROFITAFTERTAXR000	-7.44E-05	2.91E-05	-2.559952	0.0116
LIQUIDITYRATIOS	64197.29	58112.63	1.104705	0.2713
ROCE	104960.1	145481.6	0.721466	0.4719
TOTALIRREGULAREXPENDITUR	-9.97E-05	7.65E-05	-1.302527	0.1950
DUM_AUDIT4	-354703.1	785459.7	-0.451587	0.6523
C	2750492.	287427.7	9.569337	0.0000
AR(1)	0.667616	0.064329	10.37812	0.0000

R-squared	0.649934	Mean dependent var	2971893.
Adjusted R-squared	0.629189	S.D. dependent var	1344702.
S.E. of regression	818846.3	Akaike info criterion	30.12964
Sum squared resid	9.05E+13	Schwarz criterion	30.31526
Log likelihood	-2160.334	Hannan-Quinn criter.	30.20506
F-statistic	31.33017	Durbin-Watson stat	2.536752
Prob(F-statistic)	0.000000		

Inverted AR Roots .67

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/04/15 Time: 15:50
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (balanced) observations: 144
Convergence achieved after 9 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.04E-05	7.64E-06	3.977453	0.0001
EBITOPERATINGPROFIT_INCO	4.48E-05	4.49E-05	0.998495	0.3198
NETPROFITAFTERTAXR000	-7.45E-05	2.90E-05	-2.570868	0.0112
LIQUIDITYRATIOS	63404.60	57885.91	1.095337	0.2753
ROCE	104575.7	145114.5	0.720642	0.4724
TOTALIRREGULAREXPENDITUR	-0.000102	7.62E-05	-1.344226	0.1811
C	2736442.	282510.3	9.686167	0.0000
AR(1)	0.664768	0.064092	10.37213	0.0000

R-squared	0.649408	Mean dependent var	2971893.
Adjusted R-squared	0.631363	S.D. dependent var	1344702.
S.E. of regression	816442.8	Akaike info criterion	30.11725
Sum squared resid	9.07E+13	Schwarz criterion	30.28224
Log likelihood	-2160.442	Hannan-Quinn criter.	30.18430
F-statistic	35.98788	Durbin-Watson stat	2.537441
Prob(F-statistic)	0.000000		

Inverted AR Roots .66

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/04/15 Time: 15:52
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (balanced) observations: 144
Convergence achieved after 9 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.40E-05	6.88E-06	4.936018	0.0000
NETPROFITAFTERTAXR000	-5.03E-05	1.69E-05	-2.983139	0.0034
LIQUIDITYRATIOS	58383.31	57681.39	1.012169	0.3132
TOTALIRREGULAREXPENDITUR	-0.000111	7.58E-05	-1.465899	0.1450
C	2765884.	278297.0	9.938605	0.0000
AR(1)	0.661874	0.064540	10.25520	0.0000

R-squared	0.645335	Mean dependent var	2971893.
Adjusted R-squared	0.632485	S.D. dependent var	1344702.
S.E. of regression	815199.2	Akaike info criterion	30.10103
Sum squared resid	9.17E+13	Schwarz criterion	30.22477
Log likelihood	-2161.274	Hannan-Quinn criter.	30.15131
F-statistic	50.21993	Durbin-Watson stat	2.547718
Prob(F-statistic)	0.000000		

Inverted AR Roots	.66

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/04/15 Time: 15:54
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (balanced) observations: 144
Convergence achieved after 6 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.35E-05	6.65E-06	5.041276	0.0000
NETPROFITAFTERTAXR000	-4.91E-05	1.70E-05	-2.892115	0.0044
TOTALIRREGULAREXPENDITUR	-0.000112	7.62E-05	-1.471394	0.1434
C	2877548.	235542.6	12.21668	0.0000
AR(1)	0.644687	0.065295	9.873402	0.0000

R-squared	0.642838	Mean dependent var	2971893.
Adjusted R-squared	0.632560	S.D. dependent var	1344702.
S.E. of regression	815116.3	Akaike info criterion	30.09415
Sum squared resid	9.24E+13	Schwarz criterion	30.19727
Log likelihood	-2161.779	Hannan-Quinn criter.	30.13606
F-statistic	62.54470	Durbin-Watson stat	2.518909
Prob(F-statistic)	0.000000		

Inverted AR Roots	.64

E.2: *TOTAL REMUNERATION* AND *COMPANY PEFORMANCE*

Dependent Variable: TOTALCEOPACKAGE

Method: Panel Least Squares
Date: 06/11/15 Time: 15:15
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (unbalanced) observations: 142
Convergence achieved after 9 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	1.13E-05	1.68E-05	0.670977	0.5034
EBITOPERATINGPROFIT_INCO	0.000270	8.67E-05	3.113969	0.0023
NETPROFITAFTERTAXR000	-0.000184	5.46E-05	-3.376617	0.0010
LIQUIDITYRATIOS	167115.5	121760.8	1.372489	0.1723
SOLVENCYRATIO	-93446.08	211979.2	-0.440827	0.6601
ROCE	-305089.1	274814.1	-1.110165	0.2690
ROE	82217.63	180144.9	0.456397	0.6489
TOTALIRREGULAREXPENDITUR	-0.000163	0.000143	-1.142685	0.2553
DUM_AUDIT1	-457843.3	672983.6	-0.680319	0.4975
DUM_AUDIT2	-302816.0	394310.1	-0.767964	0.4439
DUM_AUDIT4	-212477.0	1517721.	-0.139997	0.8889
C	4734563.	792377.1	5.975139	0.0000
AR(1)	0.740126	0.058285	12.69832	0.0000

R-squared	0.662868	Mean dependent var	4672678.
Adjusted R-squared	0.631507	S.D. dependent var	2561919.
S.E. of regression	1555178.	Akaike info criterion	31.43916
Sum squared resid	3.12E+14	Schwarz criterion	31.70977
Log likelihood	-2219.181	Hannan-Quinn criter.	31.54913
F-statistic	21.13660	Durbin-Watson stat	2.711734
Prob(F-statistic)	0.000000		

Inverted AR Roots	.74

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 06/11/15 Time: 15:19
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (unbalanced) observations: 142
Convergence achieved after 9 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	1.21E-05	1.65E-05	0.735385	0.4634
EBITOPERATINGPROFIT_INCO	0.000267	8.60E-05	3.103818	0.0023
NETPROFITAFTERTAXR000	-0.000181	5.40E-05	-3.346787	0.0011
LIQUIDITYRATIOS	145303.3	111932.5	1.298134	0.1965
ROCE	-294257.7	272730.3	-1.078933	0.2826
TOTALIRREGULAREXPENDITUR	-0.000169	0.000141	-1.196021	0.2338
DUM_AUDIT1	-464156.3	670105.2	-0.692662	0.4897
DUM_AUDIT2	-300267.4	391884.3	-0.766214	0.4449
DUM_AUDIT4	-183179.9	1506341.	-0.121606	0.9034
C	4545667.	662437.1	6.862035	0.0000

AR(1)	0.734400	0.058274	12.60261	0.0000

R-squared	0.661842	Mean dependent var	4672678.
Adjusted R-squared	0.636029	S.D. dependent var	2561919.
S.E. of regression	1545607.	Akaike info criterion	31.41403
Sum squared resid	3.13E+14	Schwarz criterion	31.64300
Log likelihood	-2219.396	Hannan-Quinn criter.	31.50708
F-statistic	25.63931	Durbin-Watson stat	2.700525
Prob(F-statistic)	0.000000		

Inverted AR Roots	.73

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 06/11/15 Time: 15:21
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (unbalanced) observations: 142
Convergence achieved after 8 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	1.22E-05	1.64E-05	0.745815	0.4571
EBITOPERATINGPROFIT_INCO	0.000267	8.57E-05	3.116707	0.0022
NETPROFITAFTERTAXR000	-0.000181	5.38E-05	-3.359445	0.0010
LIQUIDITYRATIOS	144970.8	111496.0	1.300233	0.1958
ROCE	-294233.8	271738.2	-1.082784	0.2809
TOTALIRREGULAREXPENDITUR	-0.000170	0.000141	-1.209012	0.2288
DUM_AUDIT1	-463094.1	667657.9	-0.693610	0.4891
DUM_AUDIT2	-299320.4	390208.8	-0.767078	0.4444
C	4536532.	655034.0	6.925643	0.0000
AR(1)	0.733663	0.058055	12.63737	0.0000

R-squared	0.661804	Mean dependent var	4672678.
Adjusted R-squared	0.638746	S.D. dependent var	2561919.
S.E. of regression	1539827.	Akaike info criterion	31.40006
Sum squared resid	3.13E+14	Schwarz criterion	31.60822
Log likelihood	-2219.404	Hannan-Quinn criter.	31.48464
F-statistic	28.70074	Durbin-Watson stat	2.702584
Prob(F-statistic)	0.000000		

Inverted AR Roots	.73

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 06/11/15 Time: 15:22
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (unbalanced) observations: 142
Convergence achieved after 7 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	1.21E-05	1.65E-05	0.732768	0.4650
EBITOPERATINGPROFIT_INCO	0.000273	8.47E-05	3.224874	0.0016
NETPROFITAFTERTAXR000	-0.000184	5.32E-05	-3.452491	0.0007
LIQUIDITYRATIOS	140075.5	110211.9	1.270965	0.2059
ROCE	-285637.6	269357.8	-1.060440	0.2909
TOTALIRREGULAREXPENDITUR	-0.000170	0.000140	-1.219533	0.2248

C	4436095.	645487.4	6.872474	0.0000
AR(1)	0.739692	0.056949	12.98858	0.0000

R-squared	0.659926	Mean dependent var	4672678.
Adjusted R-squared	0.642161	S.D. dependent var	2561919.
S.E. of regression	1532532.	Akaike info criterion	31.37743
Sum squared resid	3.15E+14	Schwarz criterion	31.54395
Log likelihood	-2219.797	Hannan-Quinn criter.	31.44510
F-statistic	37.14737	Durbin-Watson stat	2.724027
Prob(F-statistic)	0.000000		

Inverted AR Roots	.74

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 06/11/15 Time: 15:24
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (unbalanced) observations: 142
Convergence achieved after 7 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EBITOPERATINGPROFIT_INCO	0.000293	7.98E-05	3.675828	0.0003
NETPROFITAFTERTAXR000	-0.000191	5.20E-05	-3.680973	0.0003
LIQUIDITYRATIOS	137633.1	109952.1	1.251755	0.2128
ROCE	-280666.9	268202.7	-1.046473	0.2972
TOTALIRREGULAREXPENDITU R	-0.000156	0.000136	-1.139881	0.2564
C	4647930.	615260.2	7.554415	0.0000
AR(1)	0.754297	0.053274	14.15876	0.0000

R-squared	0.658649	Mean dependent var	4672678.
Adjusted R-squared	0.643478	S.D. dependent var	2561919.
S.E. of regression	1529709.	Akaike info criterion	31.36709
Sum squared resid	3.16E+14	Schwarz criterion	31.51280
Log likelihood	-2220.064	Hannan-Quinn criter.	31.42630
F-statistic	43.41453	Durbin-Watson stat	2.740114
Prob(F-statistic)	0.000000		

Inverted AR Roots	.75

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 06/11/15 Time: 15:35
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (unbalanced) observations: 142
Convergence achieved after 12 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EBITOPERATINGPROFIT_INCO	5.66E-05	8.43E-05	0.671391	0.5033
NETPROFITAFTERTAXR000	-7.53E-05	6.01E-05	-1.252919	0.2127
LIQUIDITYRATIOS	170716.0	117210.1	1.456495	0.1479
ROCE	-215080.5	269908.0	-0.796866	0.4271
TOTALIRREGULAREXPENDITU R	-5.02E-05	0.000152	-0.329412	0.7424
C	4360112.	319488.2	13.64718	0.0000
AR(1)	0.187824	0.092291	2.035138	0.0441

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.755933	Mean dependent var	4672678.
Adjusted R-squared	0.708361	S.D. dependent var	2561919.
S.E. of regression	1383529.	Akaike info criterion	31.27106
Sum squared resid	2.26E+14	Schwarz criterion	31.77064
Log likelihood	-2196.245	Hannan-Quinn criter.	31.47407
F-statistic	15.89018	Durbin-Watson stat	2.186303
Prob(F-statistic)	0.000000		
Inverted AR Roots	.19		

E.3: *FIXED PAY* AND C*OMPANY PERFORMANCE* (2006 – 2010)

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/17/15 Time: 19:44
Sample (adjusted): 2007 2010
Periods included: 4
Cross-sections included: 18
Total panel (balanced) observations: 72
Convergence achieved after 11 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.53E-05	1.33E-05	2.652116	0.0101
EBITOPERATINGPROFIT_INCO	3.01E-05	7.55E-05	0.398771	0.6914
NETPROFITAFTERTAXR000	-8.88E-06	4.06E-05	-0.218735	0.8276
LIQUIDITYRATIOS	-4755.164	89236.17	-0.053287	0.9577
SOLVENCYRATIO	-38462.60	118768.4	-0.323845	0.7471
ROCE	-30123.22	297476.0	-0.101263	0.9197
ROE	-227824.4	289136.1	-0.787949	0.4337
TOTALIRREGULAREXPENDITU R	0.000189	0.001065	0.177557	0.8596
C	2478817.	360437.2	6.877251	0.0000
AR(1)	0.535009	0.105596	5.066581	0.0000
R-squared	0.591715	Mean dependent var		2580099.
Adjusted R-squared	0.532448	S.D. dependent var		1190284.
S.E. of regression	813890.4	Akaike info criterion		30.18529
Sum squared resid	4.11E+13	Schwarz criterion		30.50149
Log likelihood	-1076.670	Hannan-Quinn criter.		30.31117
F-statistic	9.983845	Durbin-Watson stat		2.612094
Prob(F-statistic)	0.000000			
Inverted AR Roots	.54			

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/17/15 Time: 19:46
Sample (adjusted): 2007 2010
Periods included: 4
Cross-sections included: 18
Total panel (balanced) observations: 72
Convergence achieved after 11 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.

TURNOVERREVENUER000	3.53E-05	1.32E-05	2.671640	0.0096
EBITOPERATINGPROFIT_INCO	3.06E-05	7.41E-05	0.413642	0.6805
NETPROFITAFTERTAXR000	-9.15E-06	3.99E-05	-0.229166	0.8195
SOLVENCYRATIO	-41530.09	102583.9	-0.404840	0.6870
ROCE	-29531.79	295065.4	-0.100086	0.9206
ROE	-226683.7	286562.5	-0.791045	0.4319
TOTALIRREGULAREXPENDITU R	0.000187	0.001057	0.177406	0.8598
C	2476152.	352643.9	7.021678	0.0000
AR(1)	0.535972	0.104543	5.126824	0.0000

R-squared	0.591696	Mean dependent var	2580099.
Adjusted R-squared	0.539848	S.D. dependent var	1190284.
S.E. of regression	807423.2	Akaike info criterion	30.15755
Sum squared resid	4.11E+13	Schwarz criterion	30.44214
Log likelihood	-1076.672	Hannan-Quinn criter.	30.27085
F-statistic	11.41212	Durbin-Watson stat	2.613094
Prob(F-statistic)	0.000000		

Inverted AR Roots	.54

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/17/15 Time: 19:52
Sample (adjusted): 2007 2010
Periods included: 4
Cross-sections included: 18
Total panel (balanced) observations: 72
Convergence achieved after 8 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.53E-05	1.31E-05	2.706340	0.0087
EBITOPERATINGPROFIT_INCO	2.90E-05	7.20E-05	0.402889	0.6884
NETPROFITAFTERTAXR000	-8.70E-06	3.94E-05	-0.220790	0.8260
SOLVENCYRATIO	-41288.12	102200.0	-0.403993	0.6876
ROE	-226046.0	283341.9	-0.797786	0.4279
TOTALIRREGULAREXPENDITU R	0.000177	0.001044	0.169082	0.8663
C	2476627.	351582.2	7.044232	0.0000
AR(1)	0.539004	0.102884	5.238928	0.0000

R-squared	0.591636	Mean dependent var	2580099.
Adjusted R-squared	0.546971	S.D. dependent var	1190284.
S.E. of regression	801150.1	Akaike info criterion	30.12992
Sum squared resid	4.11E+13	Schwarz criterion	30.38289
Log likelihood	-1076.677	Hannan-Quinn criter.	30.23063
F-statistic	13.24611	Durbin-Watson stat	2.616974
Prob(F-statistic)	0.000000		

Inverted AR Roots	.54

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/17/15 Time: 19:53
Sample (adjusted): 2007 2010
Periods included: 4
Cross-sections included: 18
Total panel (balanced) observations: 72
Convergence achieved after 8 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.52E-05	1.29E-05	2.717238	0.0084
EBITOPERATINGPROFIT_INC O	2.95E-05	7.14E-05	0.412838	0.6811
NETPROFITAFTERTAXR000	-8.90E-06	3.91E-05	-0.227635	0.8206
SOLVENCYRATIO	-43042.58	101024.7	-0.426060	0.6715
ROE	-225606.1	281042.2	-0.802748	0.4250
C	2490376.	340886.5	7.305586	0.0000
AR(1)	0.540044	0.101945	5.297388	0.0000

R-squared	0.591453	Mean dependent var	2580099.
Adjusted R-squared	0.553741	S.D. dependent var	1190284.
S.E. of regression	795141.2	Akaike info criterion	30.10259
Sum squared resid	4.11E+13	Schwarz criterion	30.32394
Log likelihood	-1076.693	Hannan-Quinn criter.	30.19071
F-statistic	15.68340	Durbin-Watson stat	2.631750
Prob(F-statistic)	0.000000		

Inverted AR Roots	.54

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/17/15 Time: 19:54
Sample (adjusted): 2007 2010
Periods included: 4
Cross-sections included: 18
Total panel (balanced) observations: 72
Convergence achieved after 8 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.59E-05	1.25E-05	2.868961	0.0055
EBITOPERATINGPROFIT_INC O	1.66E-05	4.31E-05	0.384411	0.7019
SOLVENCYRATIO	-44364.28	100037.5	-0.443477	0.6589
ROE	-243348.0	267929.2	-0.908255	0.3670
C	2496220.	337087.5	7.405259	0.0000
AR(1)	0.539348	0.101380	5.320045	0.0000

R-squared	0.591126	Mean dependent var	2580099.
Adjusted R-squared	0.560151	S.D. dependent var	1190284.
S.E. of regression	789410.1	Akaike info criterion	30.07561
Sum squared resid	4.11E+13	Schwarz criterion	30.26534
Log likelihood	-1076.722	Hannan-Quinn criter.	30.15114
F-statistic	19.08379	Durbin-Watson stat	2.635208
Prob(F-statistic)	0.000000		

Inverted AR Roots	.54

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/17/15 Time: 19:59
Sample (adjusted): 2007 2010
Periods included: 4
Cross-sections included: 18
Total panel (balanced) observations: 72
Convergence achieved after 8 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.

TURNOVERREVENUER000	3.81E-05	1.09E-05	3.476797	0.0009
SOLVENCYRATIO	-40497.57	99619.87	-0.406521	0.6857
ROE	-209075.0	252218.2	-0.828945	0.4101
C	2501185.	338300.2	7.393389	0.0000
AR(1)	0.544359	0.100922	5.393881	0.0000

R-squared	0.590221	Mean dependent var	2580099.
Adjusted R-squared	0.565757	S.D. dependent var	1190284.
S.E. of regression	784363.2	Akaike info criterion	30.05005
Sum squared resid	4.12E+13	Schwarz criterion	30.20815
Log likelihood	-1076.802	Hannan-Quinn criter.	30.11299
F-statistic	24.12572	Durbin-Watson stat	2.620786
Prob(F-statistic)	0.000000		

Inverted AR Roots	.54

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/17/15 Time: 20:00
Sample (adjusted): 2007 2010
Periods included: 4
Cross-sections included: 18
Total panel (balanced) observations: 72
Convergence achieved after 8 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.79E-05	1.10E-05	3.456013	0.0009
ROE	-205925.4	249649.3	-0.824859	0.4123
C	2416219.	257556.2	9.381326	0.0000
AR(1)	0.550302	0.099281	5.542851	0.0000

R-squared	0.589227	Mean dependent var	2580099.
Adjusted R-squared	0.571104	S.D. dependent var	1190284.
S.E. of regression	779518.7	Akaike info criterion	30.02469
Sum squared resid	4.13E+13	Schwarz criterion	30.15118
Log likelihood	-1076.889	Hannan-Quinn criter.	30.07505
F-statistic	32.51382	Durbin-Watson stat	2.632630
Prob(F-statistic)	0.000000		

Inverted AR Roots	.55

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/17/15 Time: 20:02
Sample (adjusted): 2007 2010
Periods included: 4
Cross-sections included: 18
Total panel (balanced) observations: 72
Convergence achieved after 6 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.61E-05	1.13E-05	3.189935	0.0021
C	2454341.	275529.6	8.907721	0.0000
AR(1)	0.578090	0.094626	6.109207	0.0000

R-squared	0.585246	Mean dependent var	2580099.
Adjusted R-squared	0.573224	S.D. dependent var	1190284.
S.E. of regression	777590.3	Akaike info criterion	30.00656
Sum squared resid	4.17E+13	Schwarz criterion	30.10142

Log likelihood	-1077.236	Hannan-Quinn criter.	30.04433
F-statistic	48.68177	Durbin-Watson stat	2.637842
Prob(F-statistic)	0.000000		
Inverted AR Roots	.58		

E.4: *FIXED PAY* AND *COMPANY PEFORMANCE* (2011–2014)

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/17/15 Time: 20:09
Sample (adjusted): 2012 2014
Periods included: 3
Cross-sections included: 18
Total panel (unbalanced) observations: 53
Convergence achieved after 9 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.20E-05	1.04E-05	3.075310	0.0036
EBITOPERATINGPROFIT_INCO	9.81E-05	0.000144	0.679233	0.5006
NETPROFITAFTERTAXR000	-0.000123	0.000171	-0.718432	0.4764
LIQUIDITYRATIOS	215725.9	139410.7	1.547413	0.1291
SOLVENCYRATIO	-67223.29	184279.0	-0.364791	0.7171
ROCE	118507.7	171561.7	0.690758	0.4934
ROE	-18732.71	153570.8	-0.121981	0.9035
TOTALIRREGULAREXPENDITUR	-0.000138	0.000127	-1.082406	0.2851
C	2539841.	559739.1	4.537545	0.0000
AR(1)	0.643311	0.107571	5.980319	0.0000

R-squared	0.721641	Mean dependent var	3433612.
Adjusted R-squared	0.663380	S.D. dependent var	1399247.
S.E. of regression	811828.7	Akaike info criterion	30.22023
Sum squared resid	2.83E+13	Schwarz criterion	30.59199
Log likelihood	-790.8362	Hannan-Quinn criter.	30.36319
F-statistic	12.38630	Durbin-Watson stat	2.913668
Prob(F-statistic)	0.000000		
Inverted AR Roots	.64		

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/17/15 Time: 20:10
Sample (adjusted): 2012 2014
Periods included: 3
Cross-sections included: 18
Total panel (unbalanced) observations: 53
Convergence achieved after 9 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.19E-05	1.03E-05	3.114592	0.0032
EBITOPERATINGPROFIT_INCO	9.76E-05	0.000143	0.684044	0.4975
NETPROFITAFTERTAXR000	-0.000123	0.000169	-0.728713	0.4700
LIQUIDITYRATIOS	215090.9	137749.8	1.561461	0.1256
SOLVENCYRATIO	-68709.25	181719.1	-0.378107	0.7072
ROCE	117255.3	169336.8	0.692438	0.4923

TOTALIRREGULAREXPENDITU				
R	-0.000139	0.000126	-1.103686	0.2757
C	2549470.	546573.9	4.664457	0.0000
AR(1)	0.642609	0.106070	6.058375	0.0000

R-squared	0.721544	Mean dependent var	3433612.
Adjusted R-squared	0.670916	S.D. dependent var	1399247.
S.E. of regression	802689.4	Akaike info criterion	30.18284
Sum squared resid	2.83E+13	Schwarz criterion	30.51742
Log likelihood	-790.8454	Hannan-Quinn criter.	30.31151
F-statistic	14.25181	Durbin-Watson stat	2.923349
Prob(F-statistic)	0.000000		

Inverted AR Roots	.64

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/17/15 Time: 20:12
Sample (adjusted): 2012 2014
Periods included: 3
Cross-sections included: 18
Total panel (unbalanced) observations: 53
Convergence achieved after 8 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.23E-05	1.02E-05	3.160492	0.0028
EBITOPERATINGPROFIT_INCO	9.28E-05	0.000142	0.655596	0.5154
NETPROFITAFTERTAXR000	-0.000120	0.000168	-0.712167	0.4800
LIQUIDITYRATIOS	188999.7	115433.8	1.637299	0.1085
ROCE	119753.0	167432.7	0.715231	0.4782
TOTALIRREGULAREXPENDITU				
R	-0.000147	0.000121	-1.207034	0.2337
C	2447136.	484895.5	5.046728	0.0000
AR(1)	0.651544	0.104064	6.261016	0.0000

R-squared	0.720669	Mean dependent var	3433612.
Adjusted R-squared	0.677217	S.D. dependent var	1399247.
S.E. of regression	794967.8	Akaike info criterion	30.14825
Sum squared resid	2.84E+13	Schwarz criterion	30.44565
Log likelihood	-790.9286	Hannan-Quinn criter.	30.26261
F-statistic	16.58557	Durbin-Watson stat	2.927775
Prob(F-statistic)	0.000000		

Inverted AR Roots	.65

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/17/15 Time: 20:13
Sample (adjusted): 2012 2014
Periods included: 3
Cross-sections included: 18
Total panel (unbalanced) observations: 53
Convergence achieved after 7 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.51E-05	9.35E-06	3.752875	0.0005
NETPROFITAFTERTAXR000	-1.24E-05	4.19E-05	-0.296499	0.7682
LIQUIDITYRATIOS	178166.9	112356.6	1.585727	0.1197
ROCE	113021.7	165688.3	0.682134	0.4986

TOTALIRREGULAREXPENDITU				
R	-0.000167	0.000116	-1.445160	0.1552
C	2511930.	478249.4	5.252343	0.0000
AR(1)	0.663216	0.099102	6.692277	0.0000

R-squared	0.718046	Mean dependent var	3433612.
Adjusted R-squared	0.681269	S.D. dependent var	1399247.
S.E. of regression	789962.3	Akaike info criterion	30.11986
Sum squared resid	2.87E+13	Schwarz criterion	30.38009
Log likelihood	-791.1763	Hannan-Quinn criter.	30.21993
F-statistic	19.52450	Durbin-Watson stat	2.991106
Prob(F-statistic)	0.000000		

Inverted AR Roots	.66

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/17/15 Time: 20:14
Sample (adjusted): 2012 2014
Periods included: 3
Cross-sections included: 18
Total panel (unbalanced) observations: 53
Convergence achieved after 6 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.45E-05	9.05E-06	3.812858	0.0004
LIQUIDITYRATIOS	176581.9	110699.1	1.595151	0.1174
ROCE	112537.3	164048.5	0.686000	0.4961
TOTALIRREGULAREXPENDITU				
R	-0.000165	0.000114	-1.448016	0.1543
C	2520434.	473891.1	5.318594	0.0000
AR(1)	0.665815	0.097207	6.849451	0.0000

R-squared	0.717510	Mean dependent var	3433612.
Adjusted R-squared	0.687458	S.D. dependent var	1399247.
S.E. of regression	782255.2	Akaike info criterion	30.08402
Sum squared resid	2.88E+13	Schwarz criterion	30.30707
Log likelihood	-791.2265	Hannan-Quinn criter.	30.16980
F-statistic	23.87553	Durbin-Watson stat	3.036955
Prob(F-statistic)	0.000000		

Inverted AR Roots	.67

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 08/17/15 Time: 20:15
Sample (adjusted): 2012 2014
Periods included: 3
Cross-sections included: 18
Total panel (unbalanced) observations: 53
Convergence achieved after 6 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	3.46E-05	9.01E-06	3.845827	0.0004
LIQUIDITYRATIOS	173260.1	110021.8	1.574780	0.1219
TOTALIRREGULAREXPENDITU				
R	-0.000171	0.000113	-1.510123	0.1376
C	2557187.	467634.2	5.468349	0.0000
AR(1)	0.666083	0.097147	6.856423	0.0000

R-squared	0.714678	Mean dependent var	3433612.
Adjusted R-squared	0.690901	S.D. dependent var	1399247.
S.E. of regression	777934.8	Akaike info criterion	30.05626
Sum squared resid	2.90E+13	Schwarz criterion	30.24214
Log likelihood	-791.4909	Hannan-Quinn criter.	30.12774
F-statistic	30.05770	Durbin-Watson stat	3.007931
Prob(F-statistic)	0.000000		

Inverted AR Roots	.67

E.5: *TOTAL REMUNERATION* AND *COMPANY PERFORMANCE* (2006–2010)

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 08/11/15 Time: 22:25
Sample (adjusted): 2007 2010
Periods included: 4
Cross-sections included: 18
Total panel (unbalanced) observations: 70
Convergence achieved after 12 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	-2.50E-05	3.35E-05	-0.745542	0.4589
EBITOPERATINGPROFIT_INCO	0.000414	0.000162	2.561725	0.0129
NETPROFITAFTERTAXR000	-0.000205	8.77E-05	-2.336088	0.0228
LIQUIDITYRATIOS	171366.6	177512.8	0.965376	0.3382
SOLVENCYRATIO	-96199.69	274420.7	-0.350555	0.7271
ROCE	299364.0	532036.6	0.562675	0.5758
ROE	-13464.73	478114.4	-0.028162	0.9776
TOTALIRREGULAREXPENDITUR	-0.001082	0.001996	-0.542418	0.5895
C	4537979.	1144915.	3.963596	0.0002
AR(1)	0.731772	0.095923	7.628704	0.0000

R-squared	0.611111	Mean dependent var	4225210.
Adjusted R-squared	0.552778	S.D. dependent var	2253156.
S.E. of regression	1506790.	Akaike info criterion	31.42043
Sum squared resid	1.36E+14	Schwarz criterion	31.74164
Log likelihood	-1089.715	Hannan-Quinn criter.	31.54802
F-statistic	10.47620	Durbin-Watson stat	2.514105
Prob(F-statistic)	0.000000		

Inverted AR Roots	.73

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 08/11/15 Time: 22:28
Sample (adjusted): 2007 2010
Periods included: 4
Cross-sections included: 18
Total panel (unbalanced) observations: 70
Convergence achieved after 9 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	-2.49E-05	3.26E-05	-0.763555	0.4480
EBITOPERATINGPROFIT_INCO	0.000409	0.000157	2.607735	0.0114
NETPROFITAFTERTAXR000	-0.000204	8.00E-05	-2.551257	0.0132

LIQUIDITYRATIOS	149619.7	162588.0	0.920238	0.3610
ROCE	310308.0	523319.5	0.592961	0.5554
TOTALIRREGULAREXPENDITUR	-0.001010	0.001953	-0.516932	0.6070
C	4357463.	949146.7	4.590926	0.0000
AR(1)	0.730898	0.088340	8.273692	0.0000

R-squared	0.610292	Mean dependent var	4225210.
Adjusted R-squared	0.566293	S.D. dependent var	2253156.
S.E. of regression	1483848.	Akaike info criterion	31.36539
Sum squared resid	1.37E+14	Schwarz criterion	31.62236
Log likelihood	-1089.789	Hannan-Quinn criter.	31.46746
F-statistic	13.87051	Durbin-Watson stat	2.497102
Prob(F-statistic)	0.000000		

Inverted AR Roots	.73

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 08/11/15 Time: 22:29
Sample (adjusted): 2007 2010
Periods included: 4
Cross-sections included: 18
Total panel (unbalanced) observations: 70
Convergence achieved after 9 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	-2.26E-05	3.20E-05	-0.706356	0.4826
EBITOPERATINGPROFIT_INCO	0.000405	0.000156	2.601476	0.0116
NETPROFITAFTERTAXR000	-0.000201	7.94E-05	-2.533930	0.0138
LIQUIDITYRATIOS	149407.1	161262.1	0.926486	0.3577
ROCE	273949.0	517089.1	0.529791	0.5981
C	4245834.	894206.4	4.748159	0.0000
AR(1)	0.725419	0.088211	8.223678	0.0000

R-squared	0.608623	Mean dependent var	4225210.
Adjusted R-squared	0.571348	S.D. dependent var	2253156.
S.E. of regression	1475174.	Akaike info criterion	31.34109
Sum squared resid	1.37E+14	Schwarz criterion	31.56594
Log likelihood	-1089.938	Hannan-Quinn criter.	31.43040
F-statistic	16.32832	Durbin-Watson stat	2.455631
Prob(F-statistic)	0.000000		

Inverted AR Roots	.73

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 08/11/15 Time: 22:30
Sample (adjusted): 2007 2010
Periods included: 4
Cross-sections included: 18
Total panel (unbalanced) observations: 70
Convergence achieved after 8 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	-2.21E-05	3.15E-05	-0.701893	0.4853
EBITOPERATINGPROFIT_INCO	0.000421	0.000150	2.803490	0.0067
NETPROFITAFTERTAXR000	-0.000204	7.86E-05	-2.597130	0.0117
LIQUIDITYRATIOS	148583.4	159721.6	0.930265	0.3557

C	4213653.	860720.7	4.895494	0.0000
AR(1)	0.715875	0.089031	8.040705	0.0000

R-squared	0.606921	Mean dependent var	4225210.
Adjusted R-squared	0.576212	S.D. dependent var	2253156.
S.E. of regression	1466782.	Akaike info criterion	31.31686
Sum squared resid	1.38E+14	Schwarz criterion	31.50958
Log likelihood	-1090.090	Hannan-Quinn criter.	31.39341
F-statistic	19.76344	Durbin-Watson stat	2.457810
Prob(F-statistic)	0.000000		

Inverted AR Roots	.72

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 08/11/15 Time: 22:31
Sample (adjusted): 2007 2010
Periods included: 4
Cross-sections included: 18
Total panel (unbalanced) observations: 70
Convergence achieved after 6 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EBITOPERATINGPROFIT_INC O	0.000383	0.000140	2.726314	0.0082
NETPROFITAFTERTAXR000	-0.000188	7.63E-05	-2.467968	0.0162
LIQUIDITYRATIOS	143712.5	156590.4	0.917761	0.3621
C	3954614.	706591.2	5.596749	0.0000
AR(1)	0.685680	0.086734	7.905522	0.0000

R-squared	0.604127	Mean dependent var	4225210.
Adjusted R-squared	0.579765	S.D. dependent var	2253156.
S.E. of regression	1460620.	Akaike info criterion	31.29537
Sum squared resid	1.39E+14	Schwarz criterion	31.45598
Log likelihood	-1090.338	Hannan-Quinn criter.	31.35916
F-statistic	24.79847	Durbin-Watson stat	2.474086
Prob(F-statistic)	0.000000		

Inverted AR Roots	.69

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 08/11/15 Time: 22:32
Sample (adjusted): 2007 2010
Periods included: 4
Cross-sections included: 18
Total panel (unbalanced) observations: 70
Convergence achieved after 5 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EBITOPERATINGPROFIT_INC O	0.000361	0.000138	2.619639	0.0109
NETPROFITAFTERTAXR000	-0.000175	7.49E-05	-2.331553	0.0228
C	4247169.	607315.3	6.993351	0.0000
AR(1)	0.675645	0.087622	7.710930	0.0000

R-squared	0.599025	Mean dependent var	4225210.
Adjusted R-squared	0.580799	S.D. dependent var	2253156.
S.E. of regression	1458823.	Akaike info criterion	31.27960

Sum squared resid	1.40E+14	Schwarz criterion	31.40809
Log likelihood	-1090.786	Hannan-Quinn criter.	31.33064
F-statistic	32.86622	Durbin-Watson stat	2.463284
Prob(F-statistic)	0.000000		
Inverted AR Roots	.68		

E.6: *TOTAL REMUNERATION* AND *COMPANY PEFORMANCE* (2006–2010)

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 08/11/15 Time: 22:39
Sample (adjusted): 2012 2014
Periods included: 3
Cross-sections included: 18
Total panel (unbalanced) observations: 53
Convergence achieved after 8 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	1.12E-05	2.80E-05	0.400130	0.6910
EBITOPERATINGPROFIT_INCO	4.90E-05	0.000334	0.146791	0.8840
NETPROFITAFTERTAXR000	6.26E-06	0.000391	0.016011	0.9873
LIQUIDITYRATIOS	195518.4	293829.3	0.665415	0.5093
SOLVENCYRATIO	-152083.7	422285.7	-0.360144	0.7205
ROCE	-625030.2	371311.0	-1.683306	0.0996
ROE	289099.1	306074.4	0.944539	0.3502
TOTALIRREGULAREXPENDITU R	-0.000426	0.000256	-1.664655	0.1033
C	5615339.	1628627.	3.447899	0.0013
AR(1)	0.763239	0.101465	7.522153	0.0000

R-squared	0.676163	Mean dependent var	5214295.
Adjusted R-squared	0.608383	S.D. dependent var	2852641.
S.E. of regression	1785163.	Akaike info criterion	31.79618
Sum squared resid	1.37E+14	Schwarz criterion	32.16794
Log likelihood	-832.5989	Hannan-Quinn criter.	31.93914
F-statistic	9.975858	Durbin-Watson stat	3.397837
Prob(F-statistic)	0.000000		
Inverted AR Roots	.76		

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 08/11/15 Time: 22:40
Sample (adjusted): 2012 2014
Periods included: 3
Cross-sections included: 18
Total panel (unbalanced) observations: 53
Convergence achieved after 7 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	1.54E-05	2.66E-05	0.579881	0.5649
LIQUIDITYRATIOS	180448.9	282566.6	0.638606	0.5263
SOLVENCYRATIO	-108479.4	409557.1	-0.264870	0.7923
ROCE	-619048.3	364403.6	-1.698799	0.0963
ROE	323082.4	298270.7	1.083185	0.2845
TOTALIRREGULAREXPENDITU R	-0.000449	0.000245	-1.832049	0.0736
C	5533097.	1549321.	3.571304	0.0009
AR(1)	0.760332	0.100246	7.584647	0.0000

R-squared	0.672650	Mean dependent var	5214295.
Adjusted R-squared	0.621729	S.D. dependent var	2852641.
S.E. of regression	1754481.	Akaike info criterion	31.73150
Sum squared resid	1.39E+14	Schwarz criterion	32.02890
Log likelihood	-832.8848	Hannan-Quinn criter.	31.84587
F-statistic	13.20965	Durbin-Watson stat	3.378435
Prob(F-statistic)	0.000000		

Inverted AR Roots	.76

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 08/11/15 Time: 22:41
Sample (adjusted): 2012 2014
Periods included: 3
Cross-sections included: 18
Total panel (unbalanced) observations: 53
Convergence achieved after 7 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	1.53E-05	2.65E-05	0.578795	0.5656
LIQUIDITYRATIOS	141505.1	236995.1	0.597080	0.5534
ROCE	-614510.1	360262.6	-1.705728	0.0948
ROE	316546.9	293750.1	1.077606	0.2868
TOTALIRREGULAREXPENDITU R	-0.000460	0.000238	-1.930817	0.0597
C	5366363.	1405702.	3.817569	0.0004
AR(1)	0.762069	0.100283	7.599157	0.0000

R-squared	0.672141	Mean dependent var	5214295.
Adjusted R-squared	0.629377	S.D. dependent var	2852641.
S.E. of regression	1736654.	Akaike info criterion	31.69532
Sum squared resid	1.39E+14	Schwarz criterion	31.95555
Log likelihood	-832.9260	Hannan-Quinn criter.	31.79539
F-statistic	15.71738	Durbin-Watson stat	3.348401
Prob(F-statistic)	0.000000		

Inverted AR Roots	.76

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 08/11/15 Time: 22:42
Sample (adjusted): 2012 2014
Periods included: 3
Cross-sections included: 18
Total panel (unbalanced) observations: 53
Convergence achieved after 6 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROCE	-616921.1	354298.3	-1.741248	0.0880
ROE	333883.7	286557.6	1.165154	0.2497
TOTALIRREGULAREXPENDITU R	-0.000478	0.000231	-2.063480	0.0445
C	6068994.	1083386.	5.601876	0.0000
AR(1)	0.770364	0.085180	9.043992	0.0000

R-squared	0.667891	Mean dependent var	5214295.
Adjusted R-squared	0.640216	S.D. dependent var	2852641.
S.E. of regression	1711072.	Akaike info criterion	31.63273
Sum squared resid	1.41E+14	Schwarz criterion	31.81860
Log likelihood	-833.2673	Hannan-Quinn criter.	31.70421
F-statistic	24.13275	Durbin-Watson stat	3.412727
Prob(F-statistic)	0.000000		

Inverted AR Roots	.77

E.7: *FIXED PAY* AND *CEO DEMOGRAPHIC VARIABLES*

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 10/19/15 Time: 15:58
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 17
Total panel (unbalanced) observations: 119
Convergence achieved after 12 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	1.42E-05	9.69E-06	1.463046	0.1464
NETPROFITAFTERTAXR000	-5.34E-05	1.25E-05	-4.253635	0.0000
TOTALIRREGULAREXPENDITU R	-2.07E-05	6.73E-05	-0.307107	0.7594
C	4031843.	1756163.	2.295825	0.0237
GENDER_CODED	-830136.5	224281.8	-3.701310	0.0003
AGEINYEARS	-12215.48	28634.77	-0.426596	0.6705
DUMRACE1	1049664.	578486.8	1.814500	0.0725
DUMRACE2	1582107.	714425.7	2.214516	0.0290
DUMRACE3	985706.1	2529805.	0.389637	0.6976
JOB TENUREINYEARS	188522.6	40851.86	4.614786	0.0000
QUAL2_DUM	-940228.4	496023.5	-1.895532	0.0608
QUAL3_DUM	-361900.6	254390.3	-1.422620	0.1578
QUAL4_DUM	-291791.3	794862.0	-0.367097	0.7143
AR(1)	0.872053	0.053254	16.37549	0.0000

R-squared	0.798233	Mean dependent var	3087910.
Adjusted R-squared	0.773253	S.D. dependent var	1376705.
S.E. of regression	655559.1	Akaike info criterion	29.73450
Sum squared resid	4.51E+13	Schwarz criterion	30.06145
Log likelihood	-1755.202	Hannan-Quinn criter.	29.86726
F-statistic	31.95408	Durbin-Watson stat	2.638123
Prob(F-statistic)	0.000000		

Inverted AR Roots	.87

Dependent Variable: CEOSALARY
Method: Panel Least Squares

Date: 10/19/15 Time: 16:13
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 17
Total panel (unbalanced) observations: 119
Convergence achieved after 10 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	1.31E-05	9.25E-06	1.417167	0.1593
NETPROFITAFTERTAXR000	-5.37E-05	1.24E-05	-4.336097	0.0000
C	4265769.	1676500.	2.544449	0.0124
GENDER_CODED	-824878.4	218934.2	-3.767700	0.0003
AGEINYEARS	-18531.44	23895.97	-0.775505	0.4398
DUMRACE1	1130413.	548141.8	2.062265	0.0416
DUMRACE2	1672238.	682259.3	2.451030	0.0159
DUMRACE3	1196152.	2477520.	0.482802	0.6302
JOB TENUREINYEARS	189360.3	39325.78	4.815169	0.0000
QUAL2_DUM	-838771.5	352743.2	-2.377853	0.0192
QUAL3_DUM	-329068.2	234478.2	-1.403406	0.1634
AR(1)	0.874521	0.050862	17.19414	0.0000

R-squared	0.797834	Mean dependent var	3087910.
Adjusted R-squared	0.777051	S.D. dependent var	1376705.
S.E. of regression	650045.6	Akaike info criterion	29.70286
Sum squared resid	4.52E+13	Schwarz criterion	29.98311
Log likelihood	-1755.320	Hannan-Quinn criter.	29.81666
F-statistic	38.38803	Durbin-Watson stat	2.631916
Prob(F-statistic)	0.000000		

Inverted AR Roots	.87

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 10/19/15 Time: 16:15
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 17
Total panel (unbalanced) observations: 119
Convergence achieved after 9 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	1.21E-05	9.25E-06	1.305692	0.1944
NETPROFITAFTERTAXR000	-5.35E-05	1.23E-05	-4.359810	0.0000
C	4446008.	1672223.	2.658740	0.0090
GENDER_CODED	-826086.4	217741.5	-3.793886	0.0002
AGEINYEARS	-18614.95	23757.61	-0.783536	0.4350
DUMRACE1	1092078.	538944.3	2.026328	0.0452
DUMRACE2	1638475.	674549.6	2.428991	0.0168
JOB TENUREINYEARS	189213.8	39055.32	4.844765	0.0000
QUAL2_DUM	-869831.6	344678.3	-2.523604	0.0131
QUAL3_DUM	-332891.1	233388.8	-1.426337	0.1567
AR(1)	0.882283	0.048531	18.17990	0.0000

R-squared	0.797430	Mean dependent var	3087910.
Adjusted R-squared	0.778674	S.D. dependent var	1376705.
S.E. of regression	647674.9	Akaike info criterion	29.68805
Sum squared resid	4.53E+13	Schwarz criterion	29.94494
Log likelihood	-1755.439	Hannan-Quinn criter.	29.79236
F-statistic	42.51500	Durbin-Watson stat	2.649728

Prob(F-statistic)	0.000000
Inverted AR Roots	.88

Dependent Variable: CEOSALARY
Method: Panel Least Squares
Date: 10/19/15 Time: 16:17
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (balanced) observations: 144
Convergence achieved after 9 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	2.24E-05	8.43E-06	2.651663	0.0090
NETPROFITAFTERTAXR000	-5.16E-05	1.47E-05	-3.518962	0.0006
C	2595019.	527410.6	4.920302	0.0000
GENDER_CODED	-591643.6	232239.6	-2.547557	0.0120
DUMRACE1	1068968.	311822.1	3.428133	0.0008
DUMRACE2	1339961.	480840.9	2.786703	0.0061
JOB TENUREINYEARS	171249.5	32559.68	5.259558	0.0000
QUAL2_DUM	-437461.7	293455.3	-1.490727	0.1384
QUAL3_DUM	-169713.0	225719.4	-0.751876	0.4534
AR(1)	0.781210	0.056323	13.87015	0.0000

R-squared	0.712363	Mean dependent var	2971893.
Adjusted R-squared	0.693044	S.D. dependent var	1344702.
S.E. of regression	745014.0	Akaike info criterion	29.94711
Sum squared resid	7.44E+13	Schwarz criterion	30.15335
Log likelihood	-2146.192	Hannan-Quinn criter.	30.03091
F-statistic	36.87381	Durbin-Watson stat	2.597273
Prob(F-statistic)	0.000000		
Inverted AR Roots	.78		

Size not significant

Dependent Variable: CEOSALARY
Method: Panel Least Squares

Date: 10/19/15 Time: 16:20
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 17
Total panel (unbalanced) observations: 119
Convergence achieved after 11 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNOVERREVENUER000	1.17E-05	9.33E-06	1.254082	0.2126
NETPROFITAFTERTAXR000	-5.34E-05	1.24E-05	-4.305318	0.0000
C	3042350.	2945625.	1.032837	0.3040
GENDER_CODED	-812027.3	226824.4	-3.579982	0.0005
AGEINYEARS	-17754.29	24006.44	-0.739564	0.4612
DUMRACE1	1108575.	544624.0	2.035487	0.0443
DUMRACE2	1707985.	690058.1	2.475132	0.0149
JOB TENUREINYEARS	189376.2	39395.50	4.807052	0.0000
QUAL2_DUM	-884876.8	349286.1	-2.533386	0.0128
QUAL3_DUM	-349589.9	240623.7	-1.452849	0.1492

DUM_SIZE3	1413989.	2450275.	0.577074	0.5651
DUM_SIZE4	1368887.	2434449.	0.562299	0.5751
AR(1)	0.878970	0.049722	17.67770	0.0000

R-squared	0.798070	Mean dependent var	3087910.
Adjusted R-squared	0.775210	S.D. dependent var	1376705.
S.E. of regression	652723.8	Akaike info criterion	29.71850
Sum squared resid	4.52E+13	Schwarz criterion	30.02210
Log likelihood	-1755.251	Hannan-Quinn criter.	29.84178
F-statistic	34.91117	Durbin-Watson stat	2.642848
Prob(F-statistic)	0.000000		

Inverted AR Roots	.88

E.8: *TOTAL REMUNERATION* AND *CEO DEMOGRAPHIC VARIABLES*

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 11/03/15 Time: 08:36
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 17
Total panel (unbalanced) observations: 117
Convergence achieved after 12 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EBITOPERATINGPROFIT_INCO	0.000303	8.91E-05	3.404308	0.0009
NETPROFITAFTERTAXR000	-0.000197	5.43E-05	-3.622865	0.0005
LIQUIDITYRATIOS	168311.7	152769.0	1.101740	0.2732
TOTALIRREGULAREXPENDITUR	-0.000134	0.000158	-0.845848	0.3996
C	3989296.	3902606.	1.022213	0.3091
DUMRACE1	1993107.	1315448.	1.515155	0.1328
DUMRACE2	1921269.	1655191.	1.160754	0.2485
DUMRACE3	1975257.	3718170.	0.531244	0.5964
AGEINYEARS	-24293.21	67588.45	-0.359428	0.7200
GENDER_CODED	256702.7	544958.4	0.471050	0.6386
QUAL2_DUM	-525595.9	1116888.	-0.470589	0.6389
QUAL3_DUM	-1524025.	631215.7	-2.414427	0.0175
QUAL4_DUM	164361.2	1819417.	0.090337	0.9282
JOB TENUREINYEARS	224415.1	93053.10	2.411689	0.0177
AR(1)	0.790338	0.060673	13.02617	0.0000

R-squared	0.697994	Mean dependent var	4900455.
Adjusted R-squared	0.656542	S.D. dependent var	2662876.
S.E. of regression	1560587.	Akaike info criterion	31.47823
Sum squared resid	2.48E+14	Schwarz criterion	31.83236
Log likelihood	-1826.477	Hannan-Quinn criter.	31.62200
F-statistic	16.83866	Durbin-Watson stat	2.859279
Prob(F-statistic)	0.000000		

Inverted AR Roots	.79

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 11/03/15 Time: 08:37
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (unbalanced) observations: 142
Convergence achieved after 8 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EBITOPERATINGPROFIT_INCO	0.000303	8.05E-05	3.765225	0.0003
NETPROFITAFTERTAXR000	-0.000198	5.06E-05	-3.918655	0.0001
LIQUIDITYRATIOS	143818.3	107220.5	1.341332	0.1822
TOTALIRREGULAREXPENDITUR	-0.000158	0.000136	-1.166257	0.2457
C	3730910.	1104920.	3.376635	0.0010
DUMRACE1	819211.1	625546.3	1.309593	0.1927
DUMRACE2	713627.7	984888.6	0.724577	0.4700
DUMRACE3	-364665.3	1470437.	-0.247998	0.8045
GENDER_CODED	270503.4	467182.1	0.579011	0.5636
QUAL2_DUM	-656805.1	609575.7	-1.077479	0.2833
QUAL3_DUM	-1003480.	458363.8	-2.189265	0.0304
JOB TENUREINYEARS	192848.1	65035.77	2.965262	0.0036
AR(1)	0.779826	0.053396	14.60456	0.0000

R-squared	0.694210	Mean dependent var	4672678.
Adjusted R-squared	0.665765	S.D. dependent var	2561919.
S.E. of regression	1481124.	Akaike info criterion	31.34158
Sum squared resid	2.83E+14	Schwarz criterion	31.61219
Log likelihood	-2212.253	Hannan-Quinn criter.	31.45155
F-statistic	24.40490	Durbin-Watson stat	2.790597
Prob(F-statistic)	0.000000		

Inverted AR Roots	.78

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 11/03/15 Time: 08:45
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (unbalanced) observations: 142
Convergence achieved after 7 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EBITOPERATINGPROFIT_INCO	0.000319	7.79E-05	4.097989	0.0001
NETPROFITAFTERTAXR000	-0.000203	4.99E-05	-4.072856	0.0001
LIQUIDITYRATIOS	144143.4	106242.0	1.356746	0.1772
TOTALIRREGULAREXPENDITUR	-0.000164	0.000134	-1.223636	0.2233
C	4203129.	855307.1	4.914175	0.0000
QUAL2_DUM	-765780.5	549358.8	-1.393953	0.1657
QUAL3_DUM	-1015897.	453844.6	-2.238425	0.0269
JOB TENUREINYEARS	182116.6	61638.86	2.954575	0.0037
DUMRACE1	565025.3	513607.2	1.100112	0.2733
AR(1)	0.770815	0.051318	15.02049	0.0000

R-squared	0.692368	Mean dependent var	4672678.
Adjusted R-squared	0.671393	S.D. dependent var	2561919.
S.E. of regression	1468601.	Akaike info criterion	31.30534
Sum squared resid	2.85E+14	Schwarz criterion	31.51350
Log likelihood	-2212.679	Hannan-Quinn criter.	31.38993
F-statistic	33.00931	Durbin-Watson stat	2.796934
Prob(F-statistic)	0.000000		

Inverted AR Roots	.77

E.9: *TOTAL REMUNERATION* AND *COMPANY SIZE*

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 07/26/16 Time: 16:23
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (unbalanced) observations: 142
Convergence achieved after 8 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EBITOPERATINGPROFIT_INCO	0.000285	7.87E-05	3.617143	0.0004
NETPROFITAFTERTAXR000	-0.000185	5.23E-05	-3.535739	0.0006
LIQUIDITYRATIOS	123038.3	109143.3	1.127309	0.2616
ROCE	-292645.3	269016.2	-1.087835	0.2786
DUM_SIZE3	1649044.	1930201.	0.854338	0.3945
DUM_SIZE4	2796956.	1895675.	1.475440	0.1425
C	2307917.	1825823.	1.264042	0.2084
TOTALIRREGULAREXPENDITUR	-0.000156	0.000139	-1.124065	0.2630
AR(1)	0.703716	0.058173	12.09695	0.0000

R-squared	0.667170	Mean dependent var	4672678.
Adjusted R-squared	0.647150	S.D. dependent var	2561919.
S.E. of regression	1521810.	Akaike info criterion	31.36998
Sum squared resid	3.08E+14	Schwarz criterion	31.55732
Log likelihood	-2218.269	Hannan-Quinn criter.	31.44611
F-statistic	33.32540	Durbin-Watson stat	2.727072
Prob(F-statistic)	0.000000		

Inverted AR Roots	.70

Dependent Variable: TOTALCEOPACKAGE
Method: Panel Least Squares
Date: 07/26/16 Time: 16:29
Sample (adjusted): 2007 2014
Periods included: 8
Cross-sections included: 18
Total panel (unbalanced) observations: 142
Convergence achieved after 8 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EBITOPERATINGPROFIT_INCO	0.000286	7.86E-05	3.642462	0.0004
NETPROFITAFTERTAXR000	-0.000186	5.21E-05	-3.573453	0.0005
LIQUIDITYRATIOS	132127.4	108744.9	1.215022	0.2265
ROCE	-286912.0	268396.5	-1.068985	0.2870
DUM_SIZE4	1263352.	696566.6	1.813685	0.0720
C	3781641.	687034.1	5.504299	0.0000

TOTALIRREGULAREXPENDITUR	-0.000154	0.000138	-1.114989	0.2669
AR(1)	0.710573	0.057282	12.40476	0.0000

R-squared	0.665376	Mean dependent var	4672678.
Adjusted R-squared	0.647895	S.D. dependent var	2561919.
S.E. of regression	1520202.	Akaike info criterion	31.36127
Sum squared resid	3.10E+14	Schwarz criterion	31.52780
Log likelihood	-2218.650	Hannan-Quinn criter.	31.42894
F-statistic	38.06415	Durbin-Watson stat	2.740563
Prob(F-statistic)	0.000000		

Inverted AR Roots	.71