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**Gordon Institute  
of Business Science**  
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**Chief Executive Officer remuneration and financial performance of  
Australian and South African publicly listed companies**

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

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## **Abstract**

Executive remuneration has been discussed extensively in both academia and industry, causing much disagreement. This dilemma is not exclusive to South Africa as executive remuneration has been central in a number of company scandals globally and considered a critical contributor to the global financial crisis.

The purpose of this research was to identify and compare the significant CEO pay-performance relationships between the developed and developing economies of Australian and South African publicly listed companies respectively.

International comparisons of CEO pay-performance relationships are scarce, with the majority of studies comprising of only single-country analyses. Historical inconsistent remuneration practices of publicly listed companies have resulted in varied effects on company performance and shareholder value creation. CEOs are witnessed receiving large remuneration packages while delivering little shareholder value. Increased public attention has called for stringent corporate governance measures for CEO remunerations schemes.

The research study was conducted as an empirical explanatory quantitative study to further understand the relationship between CEO remuneration practices and the financial performance of Australian and South African publicly listed companies.

The overarching principal finding of the study was the confirmation of the difference in the significant pay-performance relationships between Australian and South African publicly listed companies, with results indicating that only a negligible portion of the variance in CEO remuneration can be attributed to financial performance measures.

The increase in the globally mobility of CEOs has added an additional level of complexity to the pay-performance relationship. Contributing to the field of human resource management and remuneration this study builds on the understanding of CEO pay-performance relationship to maximise shareholder value creation and retain talented CEOs.

Keywords: Australia, South Africa, CEO compensation, pay-performance

## **Declaration**

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Pascal Gerard Desfontaines

12 March 2018

Illovo, Sandton

## List of abbreviations

ASX	-	Australian Securities Exchange
AUD	-	Australian Dollar
AUS	-	Australia
CEO	-	Chief Executive Officer
EPS	-	Earnings per share
EVA™	-	Economic Value Added
FP	-	Fixed pay
JSE	-	Johannesburg Stock Exchange
LTI	-	Long-term incentives
MC	-	Market Capitalisation
MVA	-	market Value Added
ROA	-	Return on assets
ROE	-	Return on equity
SA	-	South Africa
STI	-	Short-term incentives
TP	-	Total pay
UK	-	United Kingdom
USA	-	United States of America
VP	-	Variable pay
ZAR	-	South African Rand

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# Chapter 1: Introduction to the Research Problem

## 1.1 Background to the research problem

Executive remuneration is a topic that has been discussed extensively in both academia and industry, causing much disagreement in its wake (Melis, Gaia, & Carta, 2015). The discussions and debate around executive remuneration is however not exclusive to South Africa (SA) and is rather a global dilemma ranging across a myriad of industries. Executive remuneration has been central in a number of organisational scandals, and has been considered to have been a critical contributor to the global financial crisis (Melis et al., 2015).

Executive remuneration is explained as the remuneration received by executives in exchange for their services. Such remuneration differs significantly from employee remuneration, due primarily to the responsibility and accountability that executives carry in operating a company. Executives are accountable to drive and ensure that shareholder value increases through the satisfactory financial performance of the organisation. Chief executive officer (CEO) pay is directly linked to the financial performance of the organisation, with remuneration usually being based on the past performance of the organisation (Doucouliagos, Haman, & Askary, 2007).

Local and international publications are filled with eye-catching headlines relating to excessive CEO remuneration, corporate governance scandals and mismanagement by executive teams. The increased public attention on executive remuneration has led to the call for more significant and stringent corporate governance measures including transparency when formulating executive remunerations schemes (De Franco, Hope, & Larocque, 2013).

The Viceroy Research Group recently released a report on the South African retail giant Steinhoff detailing allegations of falsifying reported earnings, tax-evasion by senior executives and document forgery and fraudulent transactions. The release of the report led to the immediate resignation of CEO Markus Jooste, shortly followed by the chairman, Christo Wiese stepping down (Viceroy Research Group, 2017). Viceroy Research Group reported irregularities in other JSE listed companies, such as Aspen Pharmacare Holdings Ltd and Capitec Bank Holdings Ltd (Naidoo, 2018).

Australia has also experienced its share of corporate governance scandals, the latest being the unplanned early retirement of CBA Australia's CEO Ian Narev in response to calls for his resignation stemming from damaging publicity in relation to a federal lawsuit launched by the Australian Transaction Reports and Analysis Centre, wherein the CBA faces allegations of money laundering (Reuters, 2018).

With the increase of globalisation, organisations are seen to be expanding their trade across borders and are electing to operate in a host of countries. This however comes with its own challenges for organisations and CEO's as corporate governance systems may differ from one country to another which in turn may affect the manner in which CEO pay should be determined.

Gerakos, Piotroski and Srinivasan (2012) investigated the interaction between executive remuneration in the United Kingdom (UK) and the United States of America (USA), finding that UK executives generally receive lower compensation packages in comparison to their US counterparts. With business operations spread across numerous countries, organisation's may find themselves at the mercy of various corporate governance demands or the absence thereof. This is evident in China, where their corporate governance legislation has historically lacked complexity and stringent requirements in comparison to the USA corporate governance regulations on executive remuneration (Firth, Fung, & Rui, 2006), and the UK corporate governance regulations which stipulate strict guidelines when disclosing executive remuneration (Gerakos et al., 2012).

## **1.2 Research problem**

Historical problems of inconsistent remuneration practices adopted by listed companies has resulted in varied effects on both long and short-term organisation performance and shareholder value creation. Executives have been seen to receive large remuneration packages and bonuses while delivering little to no value to shareholders. The global financial crisis further highlighted these problems and emphasised the importance of executive compensation and the negative implications that may result from the misalignment of executive remuneration schemes and the financial requirements of the firm (Amzaleg, Azar, Ben-Zion, & Rosenfeld, 2014). This pay-performance relationship has historically been regarded as weak and insignificant in promoting an organisation's financial performance.

Executive remuneration has not gone unnoticed by labour unions, with unions and their members applying increasing pressure on company boards and remuneration committees to curb executive remuneration increases (Huang, Jiang, Lie, & Que, 2017). South Africa placed last globally out of 137 countries surveyed on labour-employer relations in the World Economic Forum's annual Global Competitiveness Report (World Economic Forum, 2017), highlighting the current labour instabilities and tension within the country. Faber and Chambers (2017) quoted Patrick Craven of the South African Federation of Trade Unions who stated that the companies who are currently under wage negotiations with the Unions for lower wages increases are the same companies whose executives are believed to be the highest paid (Faber & Chambers, 2017 "R69,000-a-day CEOs", para. 10).

In South Africa the pay gap between executives and employees has widened substantially from a ratio of 50:1 30 years ago to 500:1 in 2017 (Faber & Chambers, 2017). Shoprite Holdings Ltd's CEO Whitey Basson (who has since retired) earned R100.1 million in 2016, resulting in a pay gap of 1:13332 between the veteran CEO and the average earning employee (BusinessTech, 2017). In comparison, Australian CEOs earn on average 78 times the average employee salary (Liddy, Spraggon, & Hoad, 2017), while Mishel and Schieder (2017) presented the USA pay-gap to be a 271:1 ratio of CEO to employee remuneration, this being down from 299:1 in 2014.

This study aims to identify and compare if significant relationships exist between CEO remuneration and the financial performance of Australian and South African publicly listed companies between the years 2011 to 2016.

### **1.3 Research objective**

The overarching research objective of this study is to develop a deeper understanding of the relationship between CEO remuneration and the financial performance of Australian and South African publicly listed companies between the years 2011 and 2016. The research will attempt to answer two key questions; the first is, whether a significant remuneration relationship does indeed exist between the CEO's remuneration and the organisation's financial performance measures in both Australia and South Africa, and secondly, whether there are significant differences between the two countries pay-performance relationships.

The research will add to the body of knowledge in the field of Human Resources management literature by providing remuneration committees and CEOs themselves with further insight into designing and negotiating optimal pay-performance contracts to maximise the value returned to shareholders while still balancing wealth creation for CEOs. The improvement of the alignment between shareholder value creation and CEO remuneration will aid to improve corporate governance standards and limit rent-seeking behaviour. These relationships will be established through the use of correlation and regression analysis of CEO remuneration and the financial performance measures of the publicly listed companies on the Australian Securities Exchange (ASX) and the Johannesburg Stock Exchange (JSE) over a six-year period.

#### **1.4 Research scope**

The research is aimed to empirically study the relationship between CEO remuneration and the financial performance of publicly listed companies in Australia and South Africa by using quantitative research methods, analysed through the use of publicly available secondary data in line with the constructs above.

Statistical analysis of CEO remuneration and company financial performance metrics was conducted to establish if a significant relationship existed between CEO remuneration and company financial performance. Legislated corporate governance reporting criteria requires organisations listed on both the ASX and JSE to make their annual audited financial reports publicly available, these reports were utilised as a primary source of secondary data, therefore confirming the degree of credibility to be high.

#### **1.5 Research Motivation**

Research investigations into international comparisons of CEO remuneration and pay-performance relationship are scarce, with the majority of CEO remuneration studies comprising of only single-country analysis studies (Canyon, Core, & Guay, 2011). Previous studies include:

- “The Prince and the Pauper? CEO Pay in the United States and the United Kingdom” by Canyon and Murphy (2000);
- “Are U.S. CEOs Paid More Than U.K. CEOs? Inferences from Risk-adjusted Pay” by Canyon et al, (2011);
- “Which U.S. market interactions affect CEO pay? Evidence from UK companies” Gerakos et al. (2012); and

- “Directors remuneration: A comparison of Italian and UK non-financial listed firms disclosure” by (Melis et al., 2015).

From the literature quoted above, all comparisons utilised the UK as one of the countries in their analysis. Numerous papers have been published on the pay-performance relationship in South African either tailored to a specific industry or the country as a whole. Following this analysis, a gap in the literature was identified as there is lack of comparative studies on the CEO remuneration and pay-performance relationship of a developing country like South African and another country.

The effectiveness of both remuneration schemes and organisational financial performance is determined by the organisation’s ability to achieve the desired outcomes and objectives required by shareholders (Pepper & Gore, 2015). Conyon et al. (2011) conducted a comparison between UK and USA firms and found that although the countries share crucial corporate governance features, the UK was found to be less affected by excessive CEO compensation, indicating that corporate governance policies and legislation are only part of the solution to combating overstated CEO compensation.

Having an understanding of “whether or how much, when, and where” (p.1) executives are remunerated relative to company performance is imperative to the advancement of academic literature and theory in a wide range of backgrounds (Hambrick & Quigley, 2013). The results of previous pay-performance studies have found the relationship between executive remuneration and organisational performance to be remarkably inconsistent (Tosi, Werner, Katz, & Gomez-Mejia, 2000).

Amzaleg et al., (2014) comments on the negative consequences derived from the misalignment between executive and managerial incentives and the optimal risk exposure for a company, resulting in excessive risk-taking as highlighted by the global financial crisis (Melis et al., 2015). Examples of this misalignment include the overstating of profits by Worldcom through the improper classification of \$3.2 billion of investments, or the highly publicised corporate fraud scandal of Enron whose executives moved debt off their balance sheets (Darrat, Gray, Park, & Wu, 2016). It has been well established in the pay-performance literature that executives are known for exposing organisations to increased risk in the form of mergers and acquisitions to increase the organisation size. Therefore, allowing the CEO to command greater compensation due to the increased responsibility (Amzaleg et al., 2014).



The Global Competitiveness Index 2017 - 2018 edition ranks Australia 22<sup>st</sup> and South Africa 61<sup>st</sup> in the world based on their ability to maintain a competitive position in the global economy, as represented by Table 1 below. South Africa had shown promise, ranking first globally in the 2016 - 2017 edition for strength of auditing and reporting standards and protection of minority shareholder interests, but has recently fallen to 30<sup>th</sup> position globally for both components. Australia achieved 10<sup>th</sup> and 21<sup>st</sup> position respectively for both components in 2017 - 2018 edition. The report highlights the concern of decreasing institutional quality and transparency, both being critical corporate governance issues (World Economic Forum, 2017).

**Table 1**

*World Economic Forum Global Competitiveness Index Summary*

Global ranking out of 137 countries	Australia	South Africa
Ranking	21	61
Population (Million)	24,3	55,9
GDP (US\$ Billion)	1 259,00	294,1
GDP per capita (US\$)	51 850,30	5 260,90
Ethical behaviour of firms	11	72
Strength of auditing and reporting standards	10	30
Efficacy of corporate boards	8	34
Protection of minority shareholder interests	21	30
Inflation	1	105
Cooperation in the labour force	72	137
Flexibility of wage determination	109	132
Pay and productivity	31	99
Reliance on professional management	6	43
Country capacity to retain talent	23	78
Country capacity to attract talent	17	66
Female participation in the labour force	55	72

Source: World Economic Forum (2017)

Within the top 10 most problematic factors for doing business in Australia and South Africa as chosen by the respondent in the World Economic Opinion Survey 2017, 6 were common to both countries. These being: restrictive labour legislation, tax rates, inefficient government bureaucracy, poor work ethic in the national labour force, and government instability/coups (World Economic Forum, 2017). Other comparisons can be established between Australia and South Africa for the purposes of this study. Both countries lie in the southern hemisphere with similar climates. English has remained the dominant language adopted for business in Australia, with 2.6% of the Australian

population having been born in South Africa, and nearly 20% of all immigrants to Australia have arrived after 2012 (Australian Bureau of Statistics, 2017). Gender representation of female CEOs in South Africa is below the world average of 12%, 10% of all CEOs and 2.2% of all publicly listed companies on the JSE CEOs are female (Gumede, 2017), with only 5% of the top 200 ASX companies led by female CEOs (Chief executive women, 2017).

The managerial implications of the study will seek to identify if compensation schemes adopted by publicly listed companies in South Africa, which has a developing economy, and the developed market of Australia bare any similarities in their effectiveness and whether any significant relationships are identified. These relationships will allow remuneration boards and committees to enhance the effectiveness of their respective executive pay-performance relationship to maximise shareholder value creation.

The opportunity exists that through the completion of this study a positive contribution can be made to literature as to the understanding of the effectiveness of the remuneration schemes adopted by listed companies. Proposing solutions to manage the conflict of interest between shareholders desired value maximisation and CEOs wealth creation can be identified as the agency problem (Pepper & Gore, 2015). Therefore, limiting the effects of rent-seeking behaviour by CEOs and the erosion of shareholder value.

## **1.6 Introduction summary**

In summary, the relationship between CEO remuneration and company performance is an established research topic in both academia and business, yet no conclusive pay performance relationships have been established over the numerous years of investigation. Chapter 1 provides a background into the motivation and objectives of the study to be conducted, providing context into the similarities that can be established between Australia and South Africa in motivation for this study.

This study seeks to build on the existing literature by identifying if any significant relationships between CEO remuneration and organisational financial performance are present. Further comparing these relationships to determine if comparisons between Australia and South Africa can be established, and if any relevance of sound corporate governance standards can be extracted.

The following chapter provides a review of theory and literature essential to CEO remuneration and company financial performance measures, including the agency-theory, corporate governance, components of executive remuneration and the establishment of an optimal contract. Chapter 2 aims to highlight the various and opposing viewpoints expressed in literature. The methodology adopted and variables utilised in the study are discussed in Chapter 4, followed by the results and their interpretation in chapters 5 and 6. Concluding remarks will follow in chapter 7, with the managerial implications of the research and recommendations for future research in the field.

## **Chapter 2: Literature Review**

### **2.1 Introduction**

Within the field of remuneration, the topic of Chief Executive Officer (CEO) compensation schemes has been widely debated in both academia and industry, with the argument relating to the interests of both the executives and the shareholders (Mobbs, 2013). The primary focus of this research is to provide insight and clarity into the requirements needed to develop effective pay-performance relationships between the company and its executives in a bid to maximise shareholder value and uphold corporate governance standards through the reduction of the agency problem.

The purpose of this study is explored through an in-depth literature review of the relevant theories and literature on CEO compensation, corporate governance and financial performance measure utilised globally.

This literature review will commence by defining the role of the CEO in a company, followed by an analysis of the significant theories relevant to the determining the principles that govern executive remuneration practices. This is done by focusing on the effects of the adoption of the principal-agent theory, behavioural agency theory, the managerial power and optimal contracting approach by boards when establishing their respective CEO compensation scheme.

With these theories in mind, the role of remuneration committees, the remuneration constructs and the financial performance measures used to access CEO remuneration is discussed, with a focus on both the traditional accounting and market-related measures of performance, leading into an examination of the pay-performance relationship. This chapter concludes with a review of relevant literature on the role corporate governance legislation plays on executive remuneration and the financial performance of the company in both a local and global context.

### **2.2 The role of the Chief Executive Officer**

A CEO is regarded as the leader of the organisation and the most influential decision maker. CEOs are perceived to possess a diverse set of skills, an optimistic outlook and are said to be less risk-averse than other senior executives. CEOs are held accountable for the establishment and execution of the firm's strategy and organisational architecture

(Graham, Harvey, & Puri, 2013; Hambrick & Quigley, 2013; Pepper & Gore, 2015). The effectiveness of a CEO varies substantially between countries and formal and informal organisations, with American CEOs exercising greater influence over their organisation than Japanese CEOs (Hambrick & Quigley, 2013).

The above requirements and organisational accountability lead CEOs to command a higher remuneration package in comparison with other senior executives, receive remuneration packages in excess of six figures annually (Tosi et al., 2000). Although entrusted with the responsibility of the organisation, CEOs' receive more leeway than subordinate managers from board members and stakeholders, albeit constrained in their actions by corporate governance standards, culture and financial position of the organisation (Hambrick & Quigley, 2013).

### **2.3 Principal-agent theory**

The seminal work of Eisenhardt (1989) describes the fundamental concepts of the agency theory as the relationship between the manner in which the principal delegates work to the agent, who in turn is tasked to ensure the completion of the delegated work. The principal can be said to be the shareholders of the organisation and the agent, the CEO. If the principal loses the ability to monitor the agent, the agent may pursue their self-interest, leading to potential adverse effects on the company's performance and shareholder returns (Frydman & Jenter, 2010).

The principal-agent theory, commonly referred to in academic literature as the standard agency model, is broadly adopted and a vital component of the economic theory of the firm, and maintains a focus on the alignment of monitoring costs and incentives to achieve the desired performance (Pepper & Gore, 2015). The theory proceeds to assume that all principals (shareholders) are risk neutral and agents (CEO) are averse to risk, due to the potential adverse effects of risk on their respective financial incentives.

Agency costs, refer to the costs associated with the potential conflict between the interests of the principals and agents (Michiels, Voordeckers, Lybaert, & Steijvers, 2013), the principal may therefore incur agency costs or losses when the objectives of the parties are misaligned (Tosi et al., 2000). The aim of remuneration committees is to develop an optimal compensation package that will mitigate the risk of agency costs to the company.

De Cesari and Ozkan (2015) identified in their study the importance of an optimal CEO compensation package in mitigating any potential conflict of interest that may arise between principals and agents, while simultaneously motivating the agent to perform. The need for appropriate compensation packages further enforce the need for organisations to establish impartial remuneration committees to facilitate the adoption of compensation packages that promote effectiveness and alignment between the principal and agent.

A significant shortcoming of the agency theory was identified by Jensen and Murphy (1990a) through an extensive study spanning a 50 year period which failed to establish any conclusive links between remuneration received by CEOs and stock price performance of the organisation to which they were responsible.

#### **2.4 Behavioural agency theory**

Pepper and Gore (2015) define the behavioural agency theory as placing the “agent performance at the centre of the agency model” (p. 1045). Behavioural agency theory is held to be an extension of the principal-agent theory, arguing that the probability of achieving improved alignment between shareholder interests and the interests of the CEO increases when “executives are motivated to perform to the best of their abilities” (Pepper & Gore, 2015, p. 1045).

The behavioural agency theory as discussed in Pepper and Gore (2015) established the argument of the connection between four components of the model identified as CEO compensation, firm and agent performance and the interests of shareholders. The four fundamental constructs of the theory are identified as, loss aversion, risk preference, time discounting, and inequity aversion (p. 1047). The agency theory proposes that the higher the pay-performance sensitivity, the more an executive is encouraged to improve the company's performance through increased inputs (Amzaleg et al., 2014, p. 172).

Two critical problems arise from the agency theory; the first referred to as the agency problem is the misalignment of the goals of the principal and agent, and the inability to assess the actions of the agent accurately. The Second is the difference in the willingness to adopt risk between the principal and agent (Eisenhardt, 1989).

The behaviour agency theory addresses the two critical problems through four modifications:

1. Focusing on the principal-agent relationship to improve motivation and alignment;
2. the establishment of reference points for risk aversion of each individual agent;
3. the determination of the individual time preferences of agents, indicating the discount rates adopted by each agent varies and must be determined empirically;
4. the establishment of what each agent determines as equitable compensation in relation to their inputs, skill and effort (Pepper & Gore, 2015).

## **2.5 Managerial power approach**

The managerial power approach establishes the view that the CEO exerts influence through their controlling power over decisions that pertain to their compensation, limiting the impartiality of the remuneration committee in their decision making (Amzaleg et al., 2014). For a CEO to employ their personal risk preferences on an company's decision-making process, the CEO must exert considerable control over the policy in question (Cain & McKeon, 2016).

Companies find themselves in a continual struggle between the remuneration requirements of their respective CEO in line with company performance and the avoidance of public outcry due to the CEO compensation publicly perceived as excessive (Amzaleg et al., 2014). This situation intensifies through the ability of the CEO to exercise their influence over remuneration committee members to extract economic rents through cash-based compensation packages in excess of a defensible risk premium (Mobbs, 2013).

The managerial power approach further indicates that a risk-averse CEO will use their power of influence when negotiating their remuneration package to limit the effects of poor corporate performance on their remuneration (Amzaleg et al., 2014). CEOs through their position with the organisation are privy to economic and strategic challenges facing the firm, having the ability to control the information communicated to shareholders and the board as a method of managing expectations (Amzaleg et al., 2014). Through their meta-analysis study, Frydman and Jenter (2010) comment that a potential criticism of the managerial power approach is its inability to account for the steady increase of CEO remuneration since 1970. This longitudinal study spanning 70 years further identified that both principal-agency theory and managerial hypothesis theory presented inconsistencies within the collected data.

## 2.6 Optimal contracting approach

The establishment of an optimal contract occurs when the CEO compensation aligns to the company's financial performance, therefore overcoming the first agency problem of the misalignment of the agent and principal's goals (Michiels et al., 2013). CEOs' will always strive to structure their remuneration package in such a manner as to achieve the maximum compensation. "Agency theory predicts that an optimal contract will tie the agent's expected utility to the principal's wealth; therefore agency theory predicts that CEO compensation policies will depend on changes in shareholder wealth" (Jensen & Murphy, 1990b, p. 242). An optimal remuneration contract must achieve two constructs, the first, compensation must be high enough to yield the CEO's interest and effort, and secondly must not be deemed excessive by stakeholders in a bid to avoid public scrutiny (Amzaleg et al., 2014).

Remuneration committees must be conscious of the individual risk profile of their CEO when contracting (Fama, 1980). The standard contracting model establishes that the compensation demanded by a CEO in an optimal contract can be predicted by the CEO's unique risk-aversion (Frydman & Jenter, 2010; Graham et al., 2013). A risk-averse CEO will be partial to guaranteed compensation, whereby a CEO with an increased propensity for risk will demand higher total remuneration on the provision of the attainment of predetermined targets (Amzaleg et al., 2014). Graham et al. (2013) found that by matching a CEO's compensation package with the CEO's own unique tolerance for risk the company can implement cost-effective remuneration strategies through the implementation of performance-based pay schemes. An executive's unique risk profile is the result of a number of factors including gender, age and the industry in which they operate. Female executives adopt a far more conservative approach to risk than their male counterparts, executives aged between 55 and 59 had the highest risk aversion scores and executives working in industry expressed the greatest aversion to risk (Pepper & Gore, 2013).

On average CEOs prefer a less risky outcome, but the willingness to accept risk varies between companies, individuals and countries, with more risk tolerant CEOs located in France, China and Mexico (Pepper & Gore, 2013). An informative finding from Pepper and Gore (2013) was the misalignment of Chinese executives' aversion to uncertainty and their relative tolerance for risk (p. 19).



To enable optimal contract development additional factors such as the unique time preferences of each CEO must be considered (Pepper & Gore, 2015) with an impatient CEO demanding higher compensation (Graham et al., 2013). The CEO's time preference is therefore applicable to the effective implementation of short-term and long-term bonus when negotiating an optimal contract. If a requirement of an optimal contract stipulates that a CEO must hold a significant percentage of his/her total remuneration in incentive pay, then the CEO will demand an increased total remuneration package to compensate for the time discounting (Conyon et al., 2011).

In the seminal work by Fama (1980), for an organisation to ensure they have achieved an optimal contract, the pressure exerted by the labour market on firms to compensate managers in line with their performance and perceived ability must be considered. Enforcing the need for remuneration committees to be conscious of the available skills in the labour market and what compensation scheme will facilitate the retention of their CEO. Frydman and Jenter (2010) concluded that the determination of CEO pay is affected by both the managerial power exerted by the CEO and competitive market forces, proceeding to state that neither determinant can be observed in isolation.

A key consideration in combating the agency problem is the linking of CEO interests with those of the stakeholders; Frydman and Jenter (2010) propose the granting of an equity stake in the organisation to the CEO through equity-linked compensation. Arguing that by allowing CEOs to extract some economic rents through pay, these rents may be moderated through the reduction in other forms of remuneration, and therefore does not directly lead to an executive remuneration package that exceeds the competitive level.

## **2.7 Remuneration committees**

A remuneration committee or board comprises of an executive and non-executive director who act within the best interests and on behalf of the shareholders to formulate the CEO's compensation package, focusing on motivating the CEO to achieve their predetermined and measurable objectives (Pepper, Gosling, & Gore, 2015).

Agency theorists argue that a remuneration committee's objective is to achieve alignment between CEO performance and pay, while maximising returns delivered to shareholders, however, empirical findings prove inconclusive (Gupta & Wowak, 2017; Ozkan, 2011). The findings of Ozkan (2011) suggest that larger companies and companies with larger boards pay their CEO higher total compensation packages,

however, the link between board compliment and company size was excluded from this study.

Remuneration committees nevertheless deviate from their objectivity in the decision-making process, being persuaded by the CEO's power to influence their decisions and the committees organisational objective of profit maximisation (Amzaleg et al., 2014; Mobbs, 2013). De Franco, Hope and Larocque (2013) suggest that although members of the remuneration committee have a legal responsibility to shareholders, they are conflicted through their incentive to support the CEO. De Franco et al. (2016) suggest that companies offer their overconfident CEOs highly incentivised remuneration packages in a bid to exploit the CEO's optimistic view of the company, confirming the tailoring of remuneration packages based on behavioural traits. Overconfident CEOs are found to perform to a higher standard in more innovative and riskier organisations (Humphery-Jenner et al., 2016).

External pressure may be present through the involvement of labour unions and the need for the company to mitigate industrial action, improve goodwill or utilise executive remuneration as a bargaining tool with unions (Huang et al., 2017). In a study on how the political ideologies of a board influence CEO pay, Gupta and Wowak (2017) found conservative boards more likely to award the CEO a higher compensation package, founded on the boards' belief in the CEO's ability and not environmental factors in delivering value, viewing higher pay as a mechanism to retain their talented CEO.

For a board to be successful in their duties, they must possess detailed industry knowledge and maintain their impartiality in reviewing the company's strategy, and not merely be a pawn for the CEO (Mascarenhas, 2009).

When formulating the CEO's remuneration package, boards assess the CEO's worth to the company within the given labour market and the CEO's past and potential performance (Gupta & Wowak, 2017), remaining aware of the external environment in which the company operates. The CEO's skill set demanded by companies has shifted from historically a firm or industry specific skill set to the need for general managerial skills, allowing talented CEOs the flexibility to move between industries, maximising their remuneration through increased rent extraction (Frydman & Jenter, 2010).

This increased CEO mobility has resulted in boards coming under increased pressure to retain talented CEOs. The loss of a talented CEO results in the loss of intellectual capital (Mascarenhas, 2009), and the loss of the organisation's competitive advantage should the CEO commence employment with a competitor.

Pepper et al., (2015) found fairness to be a central consideration to executives that cannot be disregarded by remuneration committees. A lack of perceived fairness may lead to a reduction in CEO motivation, decreasing effectiveness and ultimately shareholder returns through poor organisational performance. Pepper, Gore and Crossman (2013) identified that although CEOs are motivated intrinsically through the achievement, power and the intimacy of teamwork, intrinsic motivation cannot be a substitute for the extrinsic motivation derived through a level of minimum remuneration. Determining what constitutes a substantial level of minimum remuneration is highly dependent on an individual's unique perception of their worth and fairness (Pepper et al., 2013).

Pepper and Gore (2013) argue that company boards find themselves trapped between recommending the use of inefficient Long-term incentives (LTI) in line with legislated corporate governance standards while subsequently eroding value through inflated executives compensation schemes. Mobbs (2013) found an increase in board independence alone will not always reduce excess CEO remuneration, as the possibility exists that compensation may be increased through less publicly visible means of prerequisites.

Cybinski and Windsor (2013), expressed findings similar to those of Mobbs (2013), with smaller companies having a weaker link between CEO performance and remuneration. These CEOs receive their full remuneration as there is less public scrutiny on the actions of the remuneration committee and the inability of these committees to remove the conflict of interest regardless of their level of independence. Gupta and Wowak (2017) established through theory and empirical evidence that a more liberal board is less responsive to financial performance measures, therefore, awarding the CEO lower compensation, although liberal boards grant lower pay increases, in good financial times and agree to lower pay cuts in periods of poor performance.

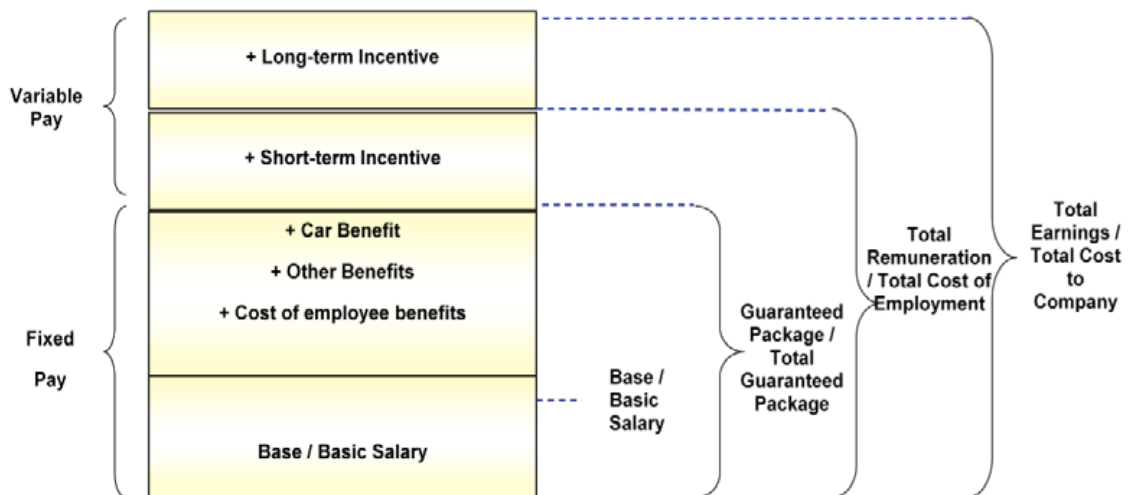
## 2.8 Remuneration constructs

CEO pay in South Africa and Australia consist of the same core constructs. Executive total remuneration packages are comprised of the basic salary, annual short-term incentives (STI), benefits-in-kind, annual stock options, restricted stock grants and long-term incentive plans (LTI) (Coles, Daniel, & Naveen, 2014; Frydman & Jenter, 2010).

Up until the 1950s, CEO remuneration predominantly comprised of salaries and short-term bonuses, through the evolution of the organisation remuneration policies adapted to include incentive bonuses paid to the CEO in either stock options or cash on the achievement of financial performance measures (Frydman & Jenter, 2010). Companies in the UK and USA use the terms direct and indirect compensation when discussing remuneration components. Indirect compensation is comprised of benefits, retirement plan contributions, leave and sick day allowances and educational grants. While direct compensation refers to basic salary, wages, commissions and both short and long-term bonus pay (Gerakos et al., 2012). Australia and South Africa do not use the terminology of direct and indirect compensation but rather the terminology defined below.

The composition of an executive's total annual package can be segmented into the following as illustrated in figure 1 (21st Century Pay Solutions Group, 2010).

Figure 1. Executive remuneration components



Source: 21st Century Pay Solutions Group (2010)

- 'Basic salary' is a fixed or guaranteed form of remuneration paid to a CEO in line with their perceived value to the organisation derived through the firm's perception of the CEO's talent, knowledge, experience and future ability (Cybinski & Windsor, 2013).

- ‘Benefits and perquisites’ received by CEOs are a lessor critiqued component of a CEO’s remuneration in literature (Frydman & Jenter, 2010). These are comprised of retirement funding contribution, referred to as pension in South Africa and superannuation in Australia, motor vehicles and living allowances, benefits are not contingent on the CEO’s performance but may vary in contribution-based upon the remuneration package negotiated between the parties (Cybinski & Windsor, 2013).
- ‘Short-term incentive’ are commonly explained as annual or cash bonuses paid to executives in response to the organisational performance over the previous 12-month period (Frydman & Jenter, 2010).
- ‘Long-term incentives’, Pepper and Gore (2013) extend the definition of long-term incentives to “include share-based incentives such as stock options, restricted stock and performance shares, as well as equity-linked cash-based incentives such as phantom options, and stock appreciation rights” (p. 2) which are paid to executives over a period greater than 12 months.

Further definitions relating to executive remuneration are (21st Century Pay Solutions Group, 2010):

- ‘Fixed-pay’ comprised of base salary and benefits;
- ‘Variable pay’ is the total of short-term and long-term incentives;
- ‘Total remuneration’ is comprised of fixed-pay and short-term incentives; and
- ‘Total cost to company’ is all remunerations received inclusive of fixed pay and variable pay.

Stock options or equity-based compensation may be utilised by firms with weak cash flows as a means of deferred CEO compensation and as a method to increase the reported short-term earnings to the shareholders, increasing the perceived value of the organisation (Li & Wang, 2016). Frydman and Jenter (2010) identified stock options as the largest component of CEO remuneration in the 1990s, followed by a shift to the use of restricted stock grants in the 2000’s. These findings are consistent with the study by Shinozaki, Moriyasu, and Uchida (2016), where it was found that stock options were not consistently granted to CEOs as a means of compensation, varying widely across industry and country due to both the CEO’s propensity for risk and the governance practices of the particular country. LTIs in 2010 comprising of stock options accounted for 47.8% of total compensation in the USA and 49.6% in the UK (Pepper & Gore, 2013, p. 2).

The performance criteria used by remuneration committees to award CEOs' performance bonus is grounded on both industry and company-specific criteria, including sales, earnings per share (EPS), net profit and economic value added (EVA™) (Li & Wang, 2016). These criteria are included as units of analysis in this study to assess financial performance.

Mobbs (2013) established the presence of strong negative relationships between CEO incentive pay and returns received by the shareholders. Companies' who's CEOs receive excessive incentives subsequently earn a substantially lower return in comparison to market companies. Pepper and Gore (2013) comment on the use of LTI as an inefficient use of shareholders money. LTIs awarded to CEO are not consistently reported in annual reports making for the sourcing of this data unreliable (Cybinski & Windsor, 2013; Ozkan, 2011). Further to this Pepper and Gore (2013) establish that LTIs' undermine the motivation of the recipient, through the perception that the LTI's value is lower than the respective cost of the LTI to the company based on future performance.

## **2.9 Company financial performance measures**

The success of a company cannot merely be attributed exclusively to net profit, instead determined through the interpretation of an array of financial and non-financial measures. These measures may include but not be limited to resource allocation decisions, productivity enhancements, and the innovative and timely decisions taken by management in response to the environment in which the company operates (Chari, 2009).

Through globalisation and increased competition, companies have been forced to re-evaluate their sole reliance on the traditional accounting-based measure for a more comprehensive value-based approach (Chari, 2009), basing performance criteria on earnings, turnover or effective measures like economic value added (EVA™) (Li & Wang, 2016).

Throughout the literature, the financial performance of a company is determined through the use of various equations, percentages and ratios (Park & Kruse, 2014). Financial performance measures of the firm can be grouped under traditional accounting-based measures of profitability, liquidity and leverage, and secondly shareholder value-creation or market-based measures. Traditional accounting-based measures incorporate the use of earnings per share (EPS), return on equity (ROE) and return on assets (ROA)

equations, whereas market-based measures reflect stock returns, firm size, fiscal-year end closing price, established through the market-based measures of market capitalisation (MC), economic value added (EVA™) and market value added (MVA) (Darrat et al., 2016; de Wet, 2012). In their study of directors remuneration in the Australian banking sector, Doucouliagos et al. (2007) established that the relationship between CEO remuneration and company performance has been strengthening since 1999 through the use of the traditional accounting-based measures of ROE, ROA and EPS.

#### *Market capitalisation*

Company size as derived by market capitalisation (MC) is an important metric in the determination of executive compensation. Larger companies can be said to require a more skilled and knowledgeable executive, as the CEO is held responsible for the company's financial performance and should be remunerated accordingly (Amzaleg et al., 2014), this view is supported by the findings of Ozkan (2011).

Company size is an important determinant to establish the alignment achieved between CEO remuneration and financial performance by remuneration committees, with greater alignment achieved in larger firms (Cybinski & Windsor, 2013). These findings are supported by Bussin and Modau (2015) who found a strong direct relationship between MC and fixed pay over the seven-year period of study.

#### *Return on assets*

Return on assets (ROA) is regarded in earlier literature as the most broadly used financial performance measure in determining pay-performance relationships (Park & Kruse, 2014). Park and Kruse (2014) found that incentivising of a group had a positive association with ROA, with more innovative companies experiencing a stronger relationship and therefore a higher ROA result. Core, Holthausen, and Larcker (1999) study on corporate governance, company performance and CEO compensation found the relationship between ROA and CEO remuneration not to be significant; these findings have been contradicted in prior studies by Amzaleg et al. (2014).

Amzaleg et al. (2014) conducted a study on 150 public Israel companies to assess the financial performance of these organisations by using ROA derived from the annual financial statements. Their findings of a positive and statistically significant correlation between financial performance and executive remuneration are consistent with agency theory and previous empirical research studies.

### *Return on equity*

Bussin and Modau (2015) identify return on equity (ROE) as a measure of the amount of profit generated by a company through the use of invested shareholder capital. It was found that ROE held a weak inverse relationship between fixed pay and a weak to moderate inverse relationship with STI and total remuneration. Their findings are supported by Cain and McKeon (2016) and van Blerck (2013).

### *Earnings per share*

Earnings per share (EPS) is utilised in 46% of all performance bonus schemes as a key financial performance metric (Bennett, Bettis, Gopalan, & Milbourn, 2017), although a central performance metric EPS has previously fallen foul to CEO manipulation in a bid to fulfil bonus performance criteria. EPS is manipulated through the repurchasing of shares by the company (Cheng, Harford, & Zhang, 2015), or a cut in discretionary spending on research and development (R&D), or through the increase in abnormal accruals (Bennett et al., 2017). These actions may result in short-term financial manipulation but in the long-term, the company may fall foul to adverse effects on performance and shareholder value creation.

### *Economic Value Added*

Economic value added (EVA™) can be utilised by companies to assess the efficiency of the capital investment decisions made by the CEO (Li & Wang, 2016), effectively acting as a measure of the organisation's true economic profit. Fatemi, Desai and Katz (2003) reported a positive relationship between executive remuneration and EVA™. Chari (2009) explains EVA™ as a measure that explains the results of corporate decision making on shareholder wealth, with EVA™ as the return required by shareholders to compensate for the risk taken.

### *Market value added*

Market value added (MVA) unlike EVA™ is not a measure of company performance, but a measure of company wealth, measured as the value created by the company over its lifetime (Bussin, 2015). Fatemi et al. (2003) established the existence of a strong positive relationship between executive remuneration and MVA, expressing in their findings the relationship between executive remuneration and the use of MVA and EVA™ to be stronger than with the traditional accounting measures in American companies.



de Wet (2012) concludes that his findings recognised a stronger relationship between the traditional accounting measures of ROA, ROE and EPS than the value-driven metrics of MVA and EVA™, showing South African companies to place a stronger emphasis on traditional accounting measures (p. 76).

## **2.10 CEO pay-performance relationship**

Pay-performance sensitivity as defined by Brick, Palmon and Wald (2012) is the measure of the “impact of a change in equity value on the manager's wealth” (p. 287). It is expressed as the sensitivity experienced by the CEO remuneration in relation to the organisation stock price, to be maximised through the alignment of the CEO pay incentives with the interests of shareholders (Coles et al., 2014).

Amzaleg et al. (2014) comment on agency theory suggesting that CEOs' are motivated to increase their inputs utilised and improve organisational performance when achieving a higher pay-performance sensitivity. Rewarding the CEO following the attainment of explicit performance goals allows for increased transparency in reporting, but falling short of the desired target may result in the CEO exposing the organisation to increased risk and potential long-term consequences to achieve their targets (Bennett et al., 2017).

Jenter & Kanaan (2015) comment that firms learn of their CEO's performance through the financial performance of the organisation, with the CEO's performance becoming more apparent during harsh economic conditions. Woodhams, Lupton, Perkins, and Cowling (2015) proceed to state that “more than 60 percent of UK organisations cited “individual performance” as the most common factor used to determine pay progression” (p. 287). The seminal work by Murphy (1985) stated that according to the economic theories of remuneration, “organisational performance should affect an executive's remuneration only to the extent that it serves as a proxy for unobservable managerial effort or productivity” (pp. 20–21).

Company size is an essential factor that should be taken into consideration when formulating a CEO remuneration package. The CEO of a company with a more substantial market capitalisation can command higher compensation due to the company requiring a CEO with more experience, knowledge and an advanced skill set to ensure the company achieves its financial performance goals (Amzaleg et al., 2014; Frydman & Jenter, 2010). The findings of Ozkan (2011), confirm that companies with a larger market capitalisation pay higher remuneration packages.

Jenter & Kanaan (2015) discuss the concept of “pay-for-luck” as a form of rent extraction by executives who exert their power over remuneration committees and boards in a means of controlling the remuneration and employment decision-making process. These powerful or influential executives are deemed more effective at defending themselves against the effects of peer performance in bad times and hiding peer performance in good times ensuring employment and remuneration security (Frydman & Jenter, 2010; Jenter & Kanaan, 2015). Greater CEO bargaining power has been associated with a decrease in the proportion of incentive pay a CEO will receive. Risk-averse CEOs see lower value in incentive pay compared to that of the company (Humphery-Jenner et al., 2016, p. 534), structuring their remuneration packages to maximise their fixed pay or cash component (Brick et al., 2012). The findings derived from Pepper and Gore (2013) confirm the disconnect between shareholder value and executive remuneration, establishing that executives perceive LTI value to be less than the actual cost to the company, undermining their motives as an agent and ultimately affecting performance.

There are increasing calls to ensure that there is a link between CEO’s remuneration and financial performance, and therefore a period of poor performance would adversely affect the remuneration of the CEO within that period. “Just because the stock price goes up, it does not mean that the performance of the firm is good” (Mascarenhas, 2009, p. 248). This pay-performance link would act as a means of combating the agency problems experienced by the organisation. In an effort to control future performance targets and subsequent pay-outs, CEOs may purposely only marginally exceed their performance targets to control the targeting setting criteria for future periods. Therefore to increase the ease of attainment, referred to as the “target ratcheting effect” (Bennett et al., 2017, p. 308).

The use of multiple performance metrics when determining goal attainment makes it very difficult for a CEO to achieve this successfully on all metrics and may result in the over and underachievement of some of the metrics (Bennett et al., 2017).

De Franco et al. (2013) hypothesised that increased transparency would result in improved evaluations and the rewarding of management. He proceeded to state that increased disclosure would allow external stakeholders to make their own informed decisions, applying pressure on the board to act with the best interests of shareholders in mind, increasing corporate governance. Boards rely on information from the company's management team to make decisions, yet the management team may only

declare information that places them in a favourable light, misleading the board's decision-making process. Through increased transparency, a publicly disclosed message will undergo more stringent examination and ensure that more care is taken by management when providing information.

### **2.11 Corporate governance requirements**

Following the accounting scandals of the 21<sup>st</sup> century, corporate governance, legislation and the behaviour of executives have attracted the attention of academics, policymakers and shareholders alike (Darrat et al., 2016). The financial crisis of 2007-2008 (Cuomo, Mallin, & Zattoni, 2016) and numerous corporate scandals have highlighted the inability of the current governance mechanisms to uphold transparency and accountability (Cuomo et al., 2016). Corporate governance measures cannot be implemented as a “blanket approach” to implementing and preventing governance issues; governance structures that are effective for one particular organisation may prove ineffective or even counterproductive for another organisation, even within the same industry (Darrat et al., 2016). The findings by Ozkan, (2011), identify the lack of congruence between the corporate governance requirements established to govern the link between the company's financial performance and executive remuneration not to have been sufficient.

The key outcome of the study into the relationship between corporate governance, CEO remuneration and company performance by Core et al., (1999) was, that the weaker a company's corporate governance standards, the more prevalent the agency problems experienced by the company, translating into weaker financial performance and inflated CEO remuneration (p. 371). Increased rent extraction by CEOs in companies with weak corporate governance practices is often concealed in remuneration components which are harder to value, including stock options and pensions (Frydman & Jenter, 2010). Conservative boards may believe that higher CEO compensation is a good corporate governance practice, believing they must retain the talented CEO, due to the belief that higher CEO impact equates to high remuneration (Gupta & Wowak, 2017). The seminal work of Fama (1980) refers to this method of remuneration as a reflection of the potential marginal product of the CEO.

In recent years CEOs' have come under mounting pressure to promote and meet transparent, ethical and accountable corporate governance standards within their organisation. These standards have extended beyond the traditional requirements where

CEOs' are held accountable to the board by including investors, institutions, employees, environmentalists and a myriad of regulatory bodies, the absence of a globally standardised corporate governance standard has resulted in each country implementing country-specific reporting regulations (Mascarenhas, 2009).

The Geiler and Renneboog (2016) analysis of the relationship between executive remuneration and organisation's payout decision highlights multiple important factors. A CEO's equity-based compensation contract is designed to align the interests of the CEO (agent) and shareholders (principal) through wealth maximisation, yet in reality, CEOs seek to maximise their individual wealth through their remuneration packages including equity-based performance compensation. When a company pays dividends, the value of the shareholder equity reduces, but when the organisation engages in share repurchase, the value of shareholder equity increases, therefore the paying of dividends reduces the value of the CEOs equity-based pay while a share-repurchases would increase it. The misalignment between the agent and the principal's is witnessed in the real-world example of pension funds reliance on dividends as a steady source of income.

To combat this problem, Geiler and Renneboog (2016) suggest that CEO remuneration package must be "dividend neutral" (p. 42), explained as removing the effect that dividend pay-outs have on the CEO's personal wealth. Brick, Palmon and Wald (2012) established through their investigation into the relationship between CEO pay-performance sensitivity and future stock returns that a decline in stock returns in companies with a high pay-performance sensitivity might reflect corporate governance problems, where the CEO increases their options component in an attempt to mask their actual compensation package.

The management and mitigation of diverse risks have become an essential governance component covering the traditional areas of credit, finance and operational risk, expanding to include business reputation, security and the threats of market bubbles. Companies' cannot rely on regulators to monitor and stabilise these bubbles as evident in the sub-prime mortgage and dot.com sectors (Mascarenhas, 2009, p. 247).

Corporate governance reporting requirements no longer maintain a focus on financial reporting in isolation. There is a call for a descriptive approach to accompany the financial statements in response to the demands by stakeholders, to incorporate the companies health, practices and policies (Mascarenhas, 2009, p. 248). Poor corporate governance can provide an early signal for bankruptcy to shareholders, institutions and

regulators (Darrat et al., 2016), with the possibility, if mitigation through a diverse gender representation on the board, and stricter management performance criteria and systems. Inversely an increase in corporate governance standards through transparency and ethical decision making can allow for improved investment decision making (Chen & Chen, 2011).

With the increase mentioned above in corporate governance standards and reporting criteria globally the likelihood of an organisation deviating from the prescribed standards has increased, describing a deviation as either over or under compliant with regulations (Aguilera, Judge, & Terjesen, 2018).

Aguilera, Judge and Terjesen (2018) describe four institutional logic perspectives and their effect on the adoption, utilisation and effectiveness of corporate governance standards. Found predominantly in liberal Anglo-Saxon countries like America, shareholder orientated governance prioritises shareholder wealth maximisation through detailed and prescriptive regulations. Social rights countries like Germany, Spain and Sweden adopted a stakeholder-orientated governance logic to ensure a balance between all stakeholder interests. Developmental type countries like Brazil and South Korea adopt a relational-orientated governance logic to archive the common goal of the contribution of the country's economy. Finally, socialist countries like China and Russia adopt a state-orientated governance logic function in a free market economy with the state as the key decision maker on governance standards (p. 90)

The increasing complexity of corporate governance standards in response to business failures and corporate misconduct as in the case of the American energy corporation Enron has resulted in various outcomes. Firstly the introduction of onerous regulations like the King Code (King III) in South Africa (Institute of Directors South Africa, 2009) (recently updated and republished as the King IV Report on Corporate Governance for South Africa 2016), the Cadbury Report in the UK (Committee on the Financial Aspects of Corporate Governance, 1996), the Corporate governance principles and recommendations in Australia (ASX Corporate Governance Council, 2014) and the Sarbanes Oxley (Nash, 2002) requirements in America (Mascarenhas, 2009).

Backdating of options was found to be more dominant in companies with weak corporate governance standards and dominating CEOs (Bebchuk, Grinstein, & Peyer, 2010). The passing of the Sarbanes-Oxley Act in 2002 by US Congress unintentionally eliminated backdating of options by requiring the disclosure of any new options issued within two

business days (Li & Wang, 2016). The second and potentially unintended consequence has resulted in an increase in the global mobility of companies who relocate in response to the escalation of a country's reporting requirements (Mascarenhas, 2009). Finally, talented and skilled CEOs of publicly traded companies have been witnessed seeking employment in non-public private equity firms in an effort of avoiding scrutiny of their performance and remunerations. Highlighted in the case of previous Home Depot CEO Robert Nardelli in his move to Chrysler, following public scrutiny of his \$250 million remuneration package on the back of mediocre share performance (Mascarenhas, 2009). In contrast to Home Depot, Whole Foods has chosen to set their own deviant over-compliant corporate governance standards relating to executive remuneration through the limiting of their co-CEOs' compensation to nineteen times the average employee annual salary (Aguilera et al., 2018).

The increase in corporate governance practice was coupled with an increase in regulatory enforcement prompted by political and cultural norms, each of the four institutional logic perspectives dealing with transgressions differently. The "hard law" approach of shareholder-orientated governance enforces sanctions through financial penalties, stakeholder-orientated governed countries adopt a "soft law" approach of nonbinding good governance codes to encourage cooperation among parties (Aguilera et al., 2018, p. 96). Frydman and Jenter 2010 suggest the increase in corporate governance reporting requirement has resulted in the growth of executive remuneration, a finding agreed to by Pepper and Gore (2013) recognising the use of inefficient LTI in line with legislated corporate governance standards as a contributor to inflated executive's compensation schemes and subsequent erosion of shareholder value. De Franco et al. (2013) found that a more direct link between the transparency and disclosure of information is established through a focused pay-performance relationship.

#### Dual CEO-Chairman position

CEO's who serve the dual role of CEO and Chairman of the organisation are found to be paid more in line with the increased responsibility of their dual role (Conyon et al., 2011). Amzaleg et al. (2014) findings reflect those of Conyon et al. (2011) with the exception of significantly higher compensation during periods of good financial performance. These findings suggest that through the appointment of the dual role these CEOs use their increased power and entrenchment to negotiate increased compensation. Literature suggests companies face an increased risk of bankruptcy through the adoption of such a dual role (Darrat et al., 2016).

## *Australia*

In Doucouliagos et al. (2007), a study on Australian banks established the adverse effect that board size has on CEO remuneration, with larger boards paying lower compensation, this finding was confirmed by Cybinski and Windsor (2013) in their study on Australian remuneration committees.

In Australia, the corporate governance framework consists of three of key elements, namely, legislation such as the Corporations Act (2001), the Australian Securities Exchange Limited listing rules (ASX Corporate Governance Council, 2014), and non-binding guidelines which include inter alia the Australian Securities Exchange Corporate Governance Council's Principles and Recommendations (ASX Corporate Governance Council, 2014).

The disclosure requirements of executives remuneration are largely set out in the Corporations Act, (2001) which requires that companies must disclose directors' remuneration where directed to do so by a member holding a minimum 5% shareholding or by at least 100 members, and require that a remuneration report (disclosing prescribed remuneration information) is to be incorporated into the directors' report for shareholders at each annual general meeting.

In July 2011 the Corporations Act was amended and the director's remuneration reporting approval became subject to the so-called "two strikes" rule, which was aimed to hold directors accountable for executive salaries and bonuses. The rule provides that where at least 25% of shareholders vote at two consecutive annual general meetings against the adoption of the remuneration report, then the shareholders can vote to determine whether the directors need to stand for re-election. The rule can be seen to encourage directors to be responsive to shareholder concerns following a "first strike" to avoid a "second strike" and the consequences which flow in terms of the Corporations Act for the board of directors.

The Corporations Legislation Amendment (Deregulatory and Other Measures) Act (2015), incorporated changes which affected inter alia remuneration reporting, in that it introduced changes concerning the disclosure obligations relating to options. It is thus no longer required that companies disclose the value of the options granted to management personnel where the same have lapsed, however disclosure will be required of the number of lapsed options and the value percentages of key management personnel's options forming part of their remuneration.

The Australian Securities Exchange Corporate Governance Council's Principles and Recommendations (ASX Corporate Governance Council, 2014), recommend that senior executives' remuneration packages and incentive schemes are reviewed by the company's remuneration committee (Regulation 8.1), which should be established for such purpose. The Australian Securities Exchange Corporate Governance Council Principles and Recommendations (ASX Corporate Governance Council, 2014), are as abovementioned, non-binding, thus creating a somewhat flexible environment for listed companies. That said, listed companies are encouraged to adopt the Principles as these were formulated to enhance investor confidence to satisfy shareholder expectations.

### *South Africa*

All listed companies on the JSE are required through their contractual obligation with the JSE to adhere to the requirements of the Companies Act of 2008 (Companies Act No. 71, 2009) and the King Code on Corporate Governance for South Africa (Institute of Directors South Africa, 2009). The King IV Report on Corporate Governance for South Africa was published on 1 November 2016 and replaced the King III Report (published in 2009) in its entirety (Institute of Directors South Africa, 2009). The King IV Report became effective in respect of financial years commencing on or after 1 April 2017 (Institute of Directors South Africa, 2016).

Key highlights of changes incorporated by King IV include the introduction of far more extensive remuneration disclosure requirements than previously required, this being in line with the international corporate governance developments. King IV (Institute of Directors South Africa, 2016) has narrowed the previous King III requirement that organisations must have an approved remuneration policy voted on by shareholders, by stipulating the minimum requirements of the remuneration policy to be voted on, which included inter alia:

- base salary;
- financial and non-financial benefits;
- incentives;
- payments on termination of employment;
- sign-on retention and restraint payments;
- pre and post-vesting forfeiture of remuneration; and
- fees of non-executive members of the governing body.



The incorporation of such components somewhat mirror the directors' remuneration requirements set out in the Companies Act 71, 2009 (Companies Act No. 71 of 2008, 2009). King IV recommends that shareholder approval is sought in respect of the remuneration policy and implementation report and where either or both are voted against by 25% or more by the shareholders, the shareholders should therefore be engaged and objections addressed. This suggests a more inclusive and transparent approach to remuneration which is further supported by the King IV requirement that the board must ensure fair and reasonable executive remuneration in view of overall employee remuneration. King IV also requires remuneration disclosure in three parts, namely, the remuneration background statement, policy and implementation (Institute of Directors South Africa, 2016).

The substantial enhancement in disclosure requirements by King IV is closely aligned to international trends, where transparency is highlighted as a key factor to good and improved corporate governance.

#### *Japan*

Although not legislative, Japanese organisations have come under increasing pressure from both domestic and foreign institutional investors to improve their corporate governance reporting by publishing corporate governance and voting principles. This pressure is in response to the increasing ownership of Japanese listed companies by foreign entities. Despite the call by shareholders for increased corporate governance practices in Japan, the characteristics of traditional Japanese corporate governance standards have remained intact, with the limited adoption of share options in equity-based remuneration (Shinozaki et al., 2016).

#### *UK*

As a listing requirement, all companies listed on the London Stock Exchange are required to abide by the UK Corporate Governance Code administered by the Financial Reporting Council (Financial Reporting Council Limited, 2016), stipulating the financial reporting criteria be adhered to for the reporting and auditing of the annual financial reports. Corporate governance standards in the UK have strengthened through the introduction of a number of significant reports focusing the attention of industry on pertinent corporate governance issues.

The Cadbury Report 1992 (Committee on the Financial Aspects of Corporate Governance, 1996) recommended the formation of remunerations committees, the Greenbury Report 1995 focused on executive remuneration policies and the linking of performance metric to long-term incentive pay, and lastly, the Hamble Report released in 1998 established the requirement on UK public companies to disclose detailed compensation information (Ozkan, 2011).

The Greenbury Report highlighted the link between share price movement and executive remuneration, establishing that an increase in share price may be attributed to a number of market factors and not just executive performance (Ozkan, 2011; Pepper et al., 2013), a sentiment echoed by Mascarenhas (2009) in commenting on the inability of a company's performance to be deemed good based solely on an increase in share price. The subsequent implementation of the London Stock Exchange Combined Code (Financial Reporting Council, 2006) drew from the recommendations of the three above-mentioned reports, forming mandatory listing requirements to which a company must comply with when listing on the exchange (Ozkan, 2011).

The remuneration of CEOs of UK listed companies is an area of particular government focus which has resulted in the establishment of the Executive Remuneration Working Group (ERWG) (established by the Investment Association in 2015) (Executive Remuneration Working Group, 2016). The ERWG was established to address the concern that executive remuneration has become intricate and complex and yet is not achieving its purpose, nor is it aligned to the companies' long-term interests. The ERWG published its final report in July 2016 (Executive Remuneration Working Group, 2016). One of the recommendations of the report was that the board should explain why the chosen remuneration level is appropriate, using both external and internal (such as the ratio between the CEO's pay and a median employee) measures (Executive Remuneration Working Group, 2016, p. 23)

### *USA*

The introduction of the Sarbanes Oxley Act of 2002 (Nash, 2002) called for increased monitoring through the mandating of a majority independent board and wholly independent audit committee, exposing CEOs to increased personal liability through increased accountability (Humphery-Jenner et al., 2016).

The personality of the CEO and their relationship with the board has the potential to affect the corporate governance standards of the organisation negatively. Narcissistic CEOs strive for the need for acclaim and the need to dominate the decision-making process; these needs often conflict resulting in the CEO having to manage the various groups differently. A narcissistic CEO may be perceived as dominant and demanding to one group yet charming and compassionate to another, continually adapting their management to suit their audience. The late Steve Jobs' tirades were passed off as a side effect of his genius, while the demanding and blunt leadership style of Elon Musk is admired.

The CEO's need for acclaim increases their desire for public attention, often resulting in the adoption of first-mover strategies and exposing shareholder value to excessive risk (Chatterjee & Pollock, 2017). The level to which a company adopts corporate governance standards is first stipulated by the legalisation of the prevailing country or industry, but the decision to either conform or deviate ultimately rests with the company's board and CEO (Aguilera et al., 2018).

The establishment of a *quid pro quo* relationship between the CEO and loyalist board members through incentivisation can result in a biased decision, rendering the board ineffective at maintaining corporate governance standards (Chatterjee & Pollock, 2017). This abuse of power by CEOs also increases the probability of unethical decision making and bankruptcy (Darrat et al., 2016).

## **2.12 Literature review summary**

In summary, executive compensation is one of the most widely debated topics in social science and business, drawing the attention of corporate governance scholars who seek to understand the logic applied to executive remuneration schemes (Gupta & Wowak, 2017).

Through the literature review it has been noted that there has been an increase in the need for more stringent corporate governance codes and legislation to act in the best interest of both the principal and agent. The traditional accounting-based and market-based measures of company financial performance was discussed in detail, highlighting their adoption in previous studies with varying outcomes. The inconsistencies in the findings of previous CEO pay-performance relationships in literature further indicates the need for additional research into the field.

The behavioural agency theory will be adopted in this study, seeking to overcome the shortcomings of the agency theory by focusing on the agent as an individual and their ability, motivation and opportunity to contribute to the financial performance of the company.

The purpose of the research is to establish if any significant relationships are present between CEO remuneration and the financial performance of Australian and South African publicly listed companies. If the information gathered in the literature review is considered, a number of significant relationships are identified for each country. However, the exact relationships cannot be predetermined due to the inconsistencies found in the findings of previous research. The direct comparison between the countries has also not been reported.

Chapter 3 states the individual research questions, that will be studied using the statistical techniques describes by the methodology presented in chapter 4, followed by a discussion of the data analysis in chapter 5.

## **Chapter 3: Research Questions**

### **3.1 Introduction**

Building on the information gathered through the extensive literature review carried out in chapter 2, a need has been identified to conduct further pay-performance research to investigate if comparisons can be established between the pay-performance relationships of Australian and South African publicly listed companies.

The research was conducted with the aim of establishing if the relationships between the six independent variables of company financial performance measures and the dependent variables of CEO remuneration between the period of 2011 to 2016 for Australian and South African publicly listed companies.

### **3.2 Specific Research Questions**

#### **3.2.1 Research question 1**

Is a significant relationship present between executive pay and the financial performance of ASX companies over the six-year research period and during each individual year of study?

- Sub-question 1.1: Is there a significant relationship between executive fixed pay and the financial performance of ASX companies over the six-year research period and during each individual year of study?
- Sub-question 1.2: Is there a significant relationship between executive variable pay and the financial performance of ASX companies over the six-year research period and during each individual year of study?
- Sub-question 1.3: Is there a significant relationship between total executive pay and the financial performance of ASX companies over the six-year research period and during each individual year of study?

### **3.2.2 Research question 2**

Is there evidence of a significant relationship present between executive pay and the financial performance of JSE companies over the six-year research period and during each individual year of study?

- Sub-question 2.1: Is there a significant relationship between executive fixed pay and the financial performance of JSE companies over the six-year research period and during each individual year of study?
- Sub-question 2.2: Is there a significant relationship between executive variable pay and the financial performance of JSE companies over the six-year research period and during each individual year of study?
- Sub-question 2.3: Is there a significant relationship between total executive pay and the financial performance of JSE companies over the six-year research period and during each individual year of study?

### **3.2.3 Research question 3**

What significant effects do the financial performance measures of company performance have on the variables of CEO remuneration and how does it differ between Australian and South African publicly listed companies over the research period?

## **3.3 Summary of the research questions**

In summary, research questions 1 and 2 pursue to identify if any significant relationships are present between CEO remuneration and company performance for both Australian and South African publicly listed companies over the six-year period of study. Question 1 and 2 will assess the presence of significant relationships yearly and cumulatively for the period of study through correlation analysis.

Question 3 sets to determine the variation in the dependant variables of CEO remuneration that can be accounted for by the company financial performance measures over the period of study.

Chapter 4 presents the research methodology identified during the extensive literature review reported in chapter 2, to test the research questions discussed above.

## **Chapter 4: Research Methodology**

### **4.1 An introduction to the research methodology**

The research study was conducted as an empirical explanatory quantitative study to further understand the relationship between the CEO remuneration practices and the financial performance of Australian and South African publicly listed companies (Saunders & Lewis, 2017).

An archival desktop study was conducted using secondary data sources comprised of the annual audited company financial reports and online databases to provide the required financial performance and CEO remuneration data. Secondary data sources as described by Kothari (2009) as data that has been previously collected for a prior purpose was used.

The research data utilised is *ex-post facto* for publicly listed companies on the ASX and JSE, with the focus of the study on the reporting of the data and not the manipulation of the data in any form. The annual financial reports for the Australian and South African publicly listed companies have been audited and made publicly available for each of the respective organisations in line with the ASX Corporate Governance Code (ASX Corporate Governance Council, 2014), and the King III (Institute of Directors South Africa, 2009) respectively. The credibility of the data is therefore high. The data utilised is longitudinal in nature and will be collected per year for the six-financial reporting period between 2011 to 2016 for each company.

To determine the appropriate methodology to adopt for this study, a literature review was conducted on previous research on executive pay-performance. The below methodology was chosen as appropriate for the study.

### **4.2 Research Design**

#### **4.2.1 Philosophy**

A pragmatic research approach was selected due to the structuring of the research methodology around the research objective, and therefore the relevance in determining the data collection process (Saunders & Lewis, 2017).

### **4.2.2 Approach**

A deductive research approach was utilised to test the theoretical outline of the relevant theories identified in the literature review (Saunders, Lewis, & Thornhill, 2015). This top-down approach allowed for the answering of the research questions through the analysis of the data to inquire and confirm or make contributions to the general theory in response to these findings (Saunders et al., 2015). The very nature of quantitative research allowed for a deductive reasoning approach (Creswell, 2012).

### **4.2.3 Strategy**

The nature of the study was formulated around the historical relationship of CEO remuneration and the pay-performance relationship, being non-predictive and assessed on past performance (Kothari, 2009).

To determine the effectiveness of the relationship between CEO remuneration and financial performance an archival longitudinal study was conducted. Due to time constraints of this longitudinal study data was utilised incorporating the past six audited financial reports, from the year ending 2011 to 2016 obtained through secondary data sources (Saunders et al., 2015).

The time-period was selected due to CEO remuneration disclosure only being publicly available since 2010 for the JSE (Bussin & Blair, 2015), and at the time of data collection not all results for the 2017 financial year had been published, prejudicing some organisations. For this reason, the time period was chosen to be from 2011 to 2016 to ensure 100% certainty of the availability of data. This approach allowed for the identification of patterns that may be present in the data or inconsistencies that may potentially lead to the data being skewed (Saunders et al., 2015). The approach was chosen to ensure research validity while limiting the effects of short-term irregularities and providing reliable estimates of the research theory (Bussin & Modau, 2015). Gomez-Mejia, Tosi, & Hinkin (1987) comment that the method of averaging of data for a four or five-year period provides for a more reliable and valid measure of organisational performance than does the use of annual figures (p. 58).

A mono quantitative research technique was selected due to needing to determine the relationship between CEO remuneration and company financial performance (Creswell, 2012), based on the statistical analysis of archival secondary data. Testing this relationship in line with the agency theory, to identify any shortcoming and misalignment



between the agent's goal of increased pay and principal's goals of financial performance (Frydman & Jenter, 2010). In the field of executive remuneration and performance this strategy is commonly adopted and includes works by Jenter and Kanaan (2015), Woodhams et al., (2015), Ozkan, (2011), Core et al. (1999) to name both seminal and recent publications.

The abovementioned research methodology provided a meaningful research framework due to:

- The mono quantitative approach allowed for the utilisation of panel data analysis as tool to conduct statistical analysis of the data;
- Being longitudinal in nature, the study allowed for trend identification, and further isolation and consideration of any observations that may skew the data; and
- The archival nature of the study eliminated the potentially unreliable challenge of generating sufficient primary data, due to the corporate governance and listing requirements for companies on the ASX and JSE, the required data was made publicly available after an auditing process.

#### **4.2.4 Universe**

The universe of this study is limited to ASX and JSE listed companies for the minimum period of between 2011 and 2016. The universe was determined by the regulatory requirement placed on companies listed on either of these stock exchanges to report the remuneration of their directors and their financial performance annually in their publicly disclosed audited financial statements. In line with the definition of a population by (Saunders et al., 2015), all publicly listed companies on the ASX and JSE cumulatively from 2011 to 2016 will form the population of the study.

#### **4.2.5 Sampling**

The sample population as defined by Creswell (2012) as a subgroup of the total population (p. 142). The sample size chosen to fulfil the requirements of efficiency, representativeness, reliability and flexibility as discussed by Kothari (2009) will be 60 firms in total, 30 firms from the ASX and 30 firms from the JSE.

To select the sample population, the non-probability sampling technique of purposive sampling was applied. Saunders & Lewis, (2017) explain this technique as a form of non-probability sampling that "selects the sample members based on a range of possible reasons and premises" (p. 138).

The reasons and premise for this study were:

- The firms must be within the top 30 cumulative highest-ranking firms over the past six years on either the ASX or JSE based upon market capitalisation as reported in their yearly audited annual reports and financial statements.
- The firms had been listed for the full period between 2011 and 2016.
- The study utilises secondary data for firms listed on both the ASX and JSE, the financial performance of the Australian Dollar (AUD) for ASX listed organisation and the JSE listed companies was reported in South African Rand (ZAR). Due to the stock exchanges located in different countries with fluctuating rates of exchange, only executives remunerated in the currency of the country in which the organisation is listed on the stock exchange will be utilised. The CEO of the organisation must be remunerated in the currency of the country in which the organisation is listed on the stock exchange, AUD in the AUS and ZAR in SA.

#### **4.2.6 Unit of analysis**

The purpose of this research was to develop a deeper understanding of the relationship between CEO remuneration and the financial performance of listed companies. To achieve the purpose of the study two units of analysis have been determined based on the previous research methodology utilised in published pay-performance literature, identified as CEO remuneration and company financial performance measure.

Banker, Darrough Rong Huang, and Plehn-Dujowich (2013) established that to effectively understand the pay-performance relationship remuneration must be separated into salary and bonus components to understand this dynamic relationship. Under the first unit of analysis, namely CEO remuneration, the researcher considered three criteria for analysis as discussed in Chapter 2 and Figure 1 (21st Century Pay Solutions Group, 2010). Remuneration values were collected in either AUD in Australia and ZAR in South Africa.

1. Fixed pay (FP), defined as the total guaranteed cash compensation and benefit.
2. Variable pay (VP) for this study, comprises of the short-term incentive bonuses paid to executives. Due to the nature of long-term incentives awarded on the achievement of targets and the inability to provide for an accurate present value figure long-term incentives were excluded from this study (Grey, Stathopoulos, & Walker, 2013).
3. Total pay (TP) awarded to CEOs. Seminal work by Core et al., (1999) established three components of executive remuneration, namely cash compensation as the sum

of salary and annual bonus, salary as the fixed compensation at the being of a given year and finally, total pay as the sum of salary, annual bonus, and stock options (p. 378). Gerakos et al., (2012) further includes benefits-in-kind to TP. Therefore TP will be comprised of the sum of fixed pay (FP), benefits-in-kind and short-term incentive bonuses (VP).

The second unit of analysis is the financial performance measures of the companies, measured by the following six equations:

- **Market capitalisation**

Market capitalisation (MC) is determined by multiplying the market share price by the number of shares in issue (Ozkan, 2011, p. 270). MC is utilised to determine the size of the organisation. MC has been selected to assess if the positive relationship identified in the previous literature between larger firms and higher CEO compensation packages applies to this study (Ozkan, 2011). MC was collected in AUD for the ASX and ZAR for the JSE.

Equation 1:

$$\begin{aligned} & \textit{Market capitalisation} \\ & = \textit{Market share price} \times \textit{Number of shares in issue} \end{aligned}$$

- **Return on equity**

Miller, (1995) utilises return on equity (ROE) as a measure of an organisational efficiency in generating profit for each unit of shareholders' equity, this simply illustrates how much profit was generated from the shareholders' investment. ROE is calculated by dividing net income by shareholders equity (McGregor BFA Database, 2014), and is expressed as a percentage.

Equation 2:

$$\textit{Return on equity} = \frac{\textit{Net income}}{\textit{Shareholders equity}}$$

- **Return on assets**

Hong, Li, and Minor (2016) identify firm performance to be measured utilising the return on assets (ROA) ratio. ROA is calculated as net income divided by total assets (McGregor BFA Database, 2014), expressed as a percentage. The figures utilised for this metric will be obtained from the annual year-end audited financial reports (Amzaleg et al., 2014).

Equation 3: 
$$\text{Return on assets} = \frac{\text{Net income}}{\text{Total assests}}$$

- **Earnings per share**

Annual earnings per share (EPS) is equated by dividing net income less dividends on preferred stock by the average number of outstanding shares, serving as an indicator of profitability (Grey et al., 2013). EPS measured in the AUD cents for the ASX and on the JSE as ZAR cents. EPS will aid in the identification of the profitability of the organisations over each financial reporting period.

Equation 4: 
$$\text{Earnings per share} = \frac{(\text{Net income} - \text{Dividends on preferred stock})}{\text{Average number of outstanding shares}}$$

- **Economic value added**

Economic value added (EVA™) was trademarked by the Stern Stewart & Co. consulting organisation, and is the expression of residual income as divisional profit achieved by deducting the cost of capital from conventional divisional profit (Drury, 2016). EVA™ encourages executive management to maintain their focus on shareholder value and not just traditional profit (Drury, 2016, p. 342). The unit of measurement is AUD for the ASX and ZAR for the JSE (Stern Value Management, 2015). If EVA™ is zero shareholders have earned a return that compensates their risk (Chari, 2009).

Equation 5:

$$\begin{aligned} & \text{Economic value added} \\ &= \text{Net operating profit after tax (NOPAT)} - \\ & (\text{Invested capital} \times \text{Weighted average cost of capital (WACC)}) \end{aligned}$$

- **Market value added**

Market value added (MVA) as identified by Bussin and Modau (2015) facilitates the comparison between organisations' of varying market capitalisation size and eliminates the effects of size on value creation.(p. 8). MVA is expressed as a ratio, MVA is calculated by diving market value by total capital, effectively standardising companies to facilitate comparisons of the company's ability to generate shareholder value.

Equation 6: 
$$\text{Market value added} = \frac{\text{Market value}}{\text{Total capital}}$$

## 4.3 Data collection and analysis

### 4.3.1 Data collection

Data required for the study was collected from multiple sources, the McGregor BFA database, Osiris database, GuruFocus database and the annual financial reports of the respective companies. The McGregor BFA database hosted on the IRESS research domain is a provider of financial performance data and analytical tools (IRESS Research Domain, 2017). GuruFocus is an internationally accredited online financial analysis database engaged in research, commentary and publishing of credible financial data (GuruFocus, 2018). Osiris is a comprehensive online company database hosted by Bureau van Dijk, a Moody's Analytical company with operations globally (Bureau van Dijk, 2018). Where data was unavailable, the annual financial reports were retrieved directly from the respective company websites.

Companies listed on the JSE are obligated to follow an audit procedure required by the King III (Institute of Directors South Africa, 2009) and the Companies Act (Companies Act No. 71 of 2008, 2009) and to publicly disclose this information (following the prescribed audit procedures), allowing for the information to be perceived as credible. Annual financial reports for companies listed on the ASX are required to adhere to the ASX Corporate Governance Code administered by the Financial Reporting Council (ASX Corporate Governance Council, 2014), this information is also required to be made publicly available (following the prescribed audit procedures), allowing for the information to be perceived as credible.

### 4.3.2 Data preparation

For the effective comparison of all data, data was collected in the local currency of each stock exchange, AUD for the ASX and ZAR for the JSE. The collected data pertaining to the ASX listed companies was converted to ZAR utilising the average exchange rate for each respective fiscal year. This process was conducted to ensure a standard currency measure for financial comparison and reporting.

Equation 7:

$$\begin{aligned} & \text{ASX exchange rate conversion} \\ & = \text{ASX figure} \times \text{Average annual exchange rate} \end{aligned}$$

#### 4.3.1 Test for normal distribution

To test the distribution of the data the Shapiro-Wilk test was conducted to determine if the distribution of the scores vary significantly from a normal distribution (Field, 2013). The Shapiro-Wilk test is deemed by Field (2013) to be more accurate than the Kolmogorov-Smirnov test at detecting the distribution of the scores and was therefore utilised for this study.

The following hypotheses were stated for the test:

$H_0$  = The data is normally distributed

$H_1$  = The data is not normally distributed

The P value of 0.05 represents a 5% level of significance or a 95% confidence interval; the test was interpreted as follows.

$H_0 = p \leq 0.05$ , reject the null hypothesis

$H_1 = p > 0.05$ , accept the null hypothesis

The outcome of the Shapiro-Wilk test was utilised to identify if the data was parametric or non-parametric, determining the appropriate test in correlation analysis of the variables.

#### 4.3.2 Test for autocorrelation

Due to the nature of time series data obtained through the use of secondary data, it is imperative to determine if autocorrelation is present in the data. Autocorrelation or serial correlation is defined by Saunders et al. (2015) as “the extent to which the value of a variable at a particular time (t) is related to its value at the previous time period (t - 1)” (p. 587). The presence of autocorrelation can be “viewed as the dependency of observations as a function of the time separating them” (Polakow, 2010, p. 54).

The Durbin-Watson test developed by J Durbin and G.S Watson (Durbin & Watson, 1950) seeks to identify the presence of autocorrelation in a dataset. The Durbin-Watson test statistic as represented as d or DW can range from 0 – 4, with a value of 2 indicating the absence of autocorrelation in the dataset. The size of the Durbin-Watson statistic is based upon the number of the sample size (N), the number of regressors (k) excluding or including the intercept and the level of significance ( $\alpha$ ) (Field, 2013). The upper limit  $d_U$  and the lower limit  $d_L$  is obtained from the Durbin-Watson significance tables (Savin & White, 1977).

Test for positive auto-correlation

$$H_0 = \rho \leq 0$$

$$H_1 = \rho > 0$$

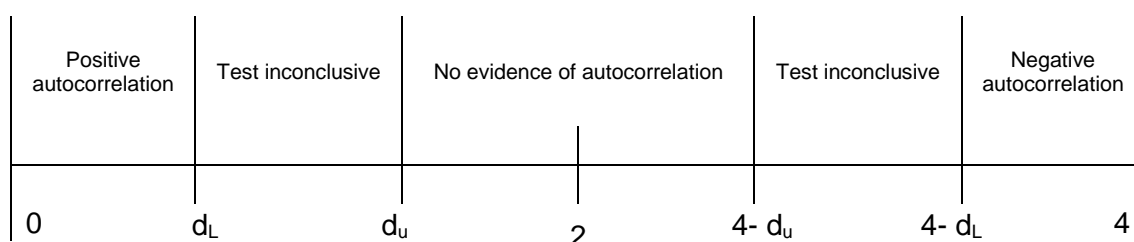
Test for negative auto-correlation

$$H_0 = \rho \geq 0$$

$$H_1 = \rho < 0$$

The results of the Durbin-Watson test are interpreted against the below scale in Figure 2.

Figure 2. Durbin-Watson autocorrelation two-tailed test



Source: Weiers, Gray and Peters (2011)

The presence of positive autocorrelation leads to the estimate of the variance being too small and the true null hypothesis being rejected. Negative autocorrelation results in the estimating of the errors being too large and the subsequent reduction in the power of the significance tests (Weiers et al., 2011).

#### 4.3.3 Data standardisation and transformation

To ensure the correct treatment of the time series data collected for the 6-year period of study and to ensure accurate statistical analysis and interpretation (Polakow, 2010), the dependent variables of FP, VP and TP and the independent variables of MC, ROE, ROA, EPS, MVA and EVA™ were required to be transformed. The transformation of the data addresses the effects of stationarity, linearity and the unequal variances (Field, 2013).

The process of transforming the data was conducted in two steps; the first step was conducted by obtaining the difference of the data through the use of equation 8 (as set out below) by subtracting the year-one value from year-two. The use of the difference calculation allowed for the correction of the effects of autocorrelation on the data (Saunders et al., 2015) and the elimination of hidden heterogeneity from the model (Greene, 2012). The negative consequence of the transformation process is that it reduced the number of observations through the elimination of one years' worth of sample data.

Equation 8:

$$Y_{diff} = Y_T - Y_{T-1}$$

Where:  $Y_{diff}$  is the differenced data point  
 $Y_T$  is the data point at year T  
 $Y_{T-1}$  is the data point at year T-1

The second step of the data transformation process was the standardisation of the data through the use of equation 9 (as set out below). The data standardisation process ensured that the data had a zero mean and unit variance by returning the data to a normalised value (Salkind, 2013).

Equation 9:

$$x_{new} = (x - \mu) / \sigma$$

Where:  $x_{new}$  is the standardised data point  
 $x$  is the original data point  
 $\mu$  is the mean of the dataset  
 $\sigma$  is the standard deviation of the dataset

The above process addressed the problem of stationarity in the time series data by ensuring a constant mean and variance over time (Polakow, 2010). The process of data transformation has the additional benefit of addressing outliers that may skew the distribution of the data (Field, 2013, p. 155).

#### 4.3.4 Retest for autocorrelation

Following the standardisation and transformation of the data, the data was retested for the presence of autocorrelation assessed against the  $d_U$  and  $d_L$  limits as defined by the Durbin-Watson tables in Savin and White (1977), with the new sample size following the reduction in observations due to the standardisation and transformation of the data.

#### 4.3.5 Analysis approach

On conclusion of the data collection process, the collected data was tabulated in Microsoft Excel in order for the data to be screened and cleaned for errors in line with the research requirements (Pallant, 2016). The SAS version 9.4 statistical software was utilised to conduct the statistical analysis of the data to answer the research questions.



The dependent variable is remuneration received by the CEOs measured through FP, VP and TP. The six independent variables of the study are MC, ROE, ROA, EPS, MVA and EVA™ relating to company financial performance expressed as either a percentage, ratio or currency value.

#### 4.3.6 Descriptive statistics

Descriptive statistics were used to provide a meaningful explanation of the collected data in both tabulated and graphical representation (Wegner, 2016), and to check the variables for any violations that may result in errors in the statistical technique used and report on any trends that may be observed for each variable (Pallant, 2016). The descriptive statistics reported on are the minimum, mean, median, maximum and standard deviation values for each dependent and independent variable, allowing for the summary of data to identify trends, profiles, patterns and outliers within the data (Wegner, 2016).

#### 4.3.7 Correlation analysis

A correlation coefficient is defined as the strength of the relationship between two variables, ranging between -1 and 1 (Field, 2013). The Spearman's correlation coefficient test was conducted for non-parametric data to determine the statistical association of the linear relationship between the variables and the strength of the relationship (Wegner, 2016). The Spearman's correlation coefficient does not rely on the assumptions of normally distributed data as required by a parametric test and may be referred to as Spearman's rho (Field, 2013) as in the case of the SAS statistical software.

**Table 2**

*Correlation Coefficient Values and Strengths*

Relationship direction	Correlation coefficient	Relationship strength
Positive relationship	0,70 < r ≤ 1,00	Very strong relationship
	0,50 < r ≤ 0,69	Strong relationship
	0,30 < r ≤ 0,49	Moderate relationship
	0,10 < r ≤ 0,29	Weak relationship
	0,00 < r ≤ 0,09	Negligible relationship
	r = 0	No relationship
Negative relationship	-0,09 ≤ r < 0,00	Negligible relationship
	-0,29 ≤ r < -0,10	Weak relationship
	-0,49 ≤ r < -0,30	Moderate relationship
	-0,69 ≤ r < -0,50	Strong relationship
	-1,00 ≤ r < -0,70	Very strong relationship

Source: Kotrlik, Williams, and Jabor (2011)

Table 2 above describes the strength of the relationship between the variables analysed using the Spearman’s correlation analysis.

To determine the significance of the relationship between the variables, the following hypotheses were stated for the test:

$H_0$  = There is no significant correlation between the variables

$H_1$  = There is a significant correlation between the variables

The P-value of 0.05 represents a 5% level of significance or a 95% confidence interval, the test was interpreted as follows:

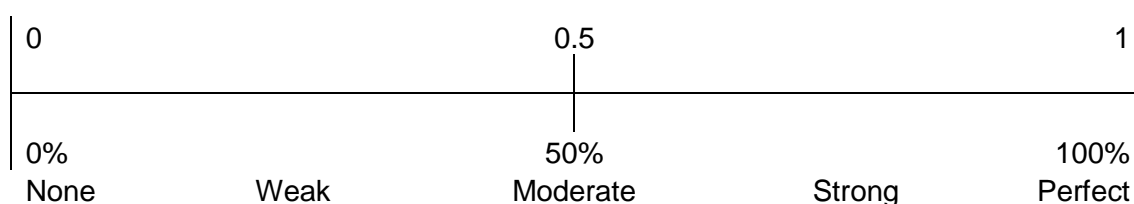
$H_0 = p \leq 0.05$ , reject the null hypothesis

$H_1 = p > 0.05$ , accept the null hypothesis

#### 4.3.8 Panel data regression

The coefficient of determination or R Square ( $R^2$ ) value was defined by Wegner (2016) as the measure of the percentage variation in the dependent variable that can be explained by the independent variable between 0-100%, alternatively expressed as the percentage of explained variation in the dependant variable due to the independent variables (p. 339). This measure was used to determine the strength of the association between the company financial performance measures and CEO remuneration components of each model.

Figure 3. Strength of association between the dependant and independent variables



Source: Wegner (2016)

The association was interpreted using Figure 3 above. The strength of the association is dependent on how close  $R^2$  lies to either 0 or 1.

$R^2 = 0$       There is no association

$R^2 = 1$       There is a perfect association

$0 < R^2 < 1$       The closer  $R^2$  is to 0, the weaker the association is between the variables, the closer  $R^2$  is to 1 the stronger the association.

Hausman test for random effects compares the random and fixed effects estimators to addresses a key consideration in panel data analysis by choosing between the random and fixed effects approach (Wooldridge, 2010). Hausman (1978) proposed a test based on the differences between the random effects model and the fixed effects model by testing for the presence of orthogonality in the model (Greene, 2012).

A statistically significant difference is interpreted as sufficient evidence to reject the random effects approach, inversely the absence of a statistical significance allows for the acceptance of the random effects approach (Wooldridge, 2010). The acceptance of the random effects approach confirms the absence of any correlation between variables. The Hausman test was adopted by de Wet (2012) in their analysis of executive compensation in South African listed companies.

The Hausman test is expressed in the below hypothesis:

$H_0$  = The effects are independent of the regressors

$H_1$  = The effects are not independent of the regressors

The P-value of 0.05 represents a 5% level of significance or a 95% confidence interval, the test was interpreted as follows:

$H_0 = p \leq 0.05$ , reject the null hypothesis

$H_1 = p > 0.05$ , accept the null hypothesis

Panel data regression analysis was used to understand the effects the six independent variables on each of the dependent variables tested. Panel data analysis accounts for the effects of heterogeneity and dynamic effects that are not visible in cross-sectional analysis (Greene, 2012). The Nerlove method for estimating the variance components developed by Balestra and Nerlove (1966) is a one-way random effects model that provides a simplified alternative to estimating the variance components of the panel model. A random effects model provides more flexibility with regards to the estimated coefficients (Banker et al., 2013).

#### **4.3.9 Research limitations**

The time constraints and nature of the research has established the below limitations:

- The six financial reporting periods may be too short in some situations to effectively establish the relationship between CEO remuneration and the financial performance of the company;

- The exclusion of long-term incentive bonuses as a component of CEO pay was not included due to the difficulty to accurately present-value the amount to be awarded. This may have resulted in certain criteria that motivate CEOs to achieve their financial performance targets being excluded;
- Consideration was not given to the implications of CEO turnover on the company's financial performance during the period of study;
- Consideration was not given to a change in or new remuneration practices of the respective companies; and
- The research was conducted on JSE data subject to the King III reporting guidelines. These guidelines have subsequently been replaced by King IV (effective 1 April 2017), to which the effect following implementation is unknown.

#### **4.3.10 Research methodology summary**

The research methodology of this study provided a systematic approach to the collection and analysis of the data in line with methods used in executive pay-performance studies in the literature.

The first unit of analysis CEO remuneration comprised of FP, VP and TP with the second unit of analysis organisation financial performances measures, comprising of MC, ROE, ROA, EPS, MVA and EVA™. All data was collected in the currency of the country in which the stock exchange was domiciled, namely AUD for the ASX and ZAR for the JSE. To ensure effective comparisons, the average yearly exchange rate for the period between Australia and South Africa was applied to the ASX figures to convert them to ZAR.

Data was assessed using the Durbin-Watson test for autocorrelation, the Shapiro-Wilk test for normal distribution. To ensure the removal the effects of autocorrelation and stationarity the data was both differenced and standardised, resulting in the research sample decreasing from a six-year period to a five-year period.

Thereafter the standardised and transformed data was analysed using the Spearman correlation analysis and the Nerlove random effects model for panel regression method for variances.

The following chapter reviews the results derived from the statistical and analytical methods performed on the obtained research data discussed in this chapter.

## **Chapter 5: Results**

### **5.1 Introduction**

This chapter describes the data used and results obtained in the study with the aim of answering the three research questions. Question 1 and 2 relate to the identification of the significant relationships between the components of CEO remuneration with each of the six independent variables through correlation analysis. Question 3 sought to determine the comparative effect that company financial performance measures have on CEO remuneration for both Australian and South African publicly listed companies.

#### **5.1.1 Description of the sample**

All companies listed on the ASX and JSE were considered as the universe for this study, with a sample population of 30 companies purposively drawn from each stock exchange based on the following premises:

- The company must have been listed for the full period between 2011 and 2016;
- The company must be within the top 30 cumulative highest-ranking organisations over the past six years on either the ASX or JSE based upon market capitalisation as reported in their yearly audited annual reports and financial statements;
- The financial performance of the listed company must have been reported in Australian Dollars (AUD) for ASX and South African Rand (ZAR) for the JSE listed organisation; and
- The CEO of the organisation must have been remunerated in the currency of the country in which the company lists on the stock exchange, AUD in the AUS and ZAR in SA.

The research data for the study was obtained from three databases namely, McGregor BFA, Osiris and GuruFocus, with missing information obtained directly from the annual company reports. All company financial data and CEO remuneration was sampled annually for each reporting period between 2011 and 2016. All financial results and CEO remuneration figures were collected in the currency of the country in which the stock exchange was based, AUD for the ASX and ZAR for the JSE. The results for the ASX companies were converted to ZAR as described by equation 7 in Section 4.3.2 allowing for a standard currency for comparison of the results. Table 3 lists the average exchange rates for each year of study used in the conversion process.

**Table 3***Average Annual Exchange Rates between 2011 and 2016*

ZAR/AUD	2011	2012	2013	2014	2015	2016
Low	6,74	7,94	8,86	9,42	8,98	9,89
Average	7,49	8,51	9,3	9,77	9,61	10,93
High	8,38	9,28	9,71	10,08	11,43	11,66

Source: IRESS Expert (2018)

Table 4 illustrates a number of similarities between the industries from which the sample populations are drawn for the ASX and JSE, financial service companies account for 30% of the total sample, real-estate and healthcare each accounting for 12%, followed by retail at 10%.

**Table 4***ASX and JSE Sample Population Industry Comparison*

<u>Industry</u>	<u>Number of Companies</u>		
	ASX	JSE	Total
Consumer Discretionary	1		1
Energy	2		2
Financial services	9	9	18
Healthcare	3	4	7
Industrial	2		2
Information Technology	1		1
Logistics		1	1
Manufacturing	2	1	3
Mining		4	4
Multiple Industries	1	1	2
Oil and Gas		1	1
Real Estate	5	2	7
Retail	1	5	6
Telecommunications	1	2	3
Utilities	2		2
Total companies in the research sample	30	30	60

Source: Own research

Table 5 illustrates the CEO gender split over the period of study, the ASX had a 94:6 male to female ratio, where the JSE had a 98:2 male to female ratio, with only 1 female CEO recorded during the period. The ASX had a total of 53 CEOs and the JSE 48 CEOs over the period, indicating CEO turnover to be at 76% for the ASX and 60% for the JSE during the six-year period of study, with some companies having dual CEOs leading to an inflation of this figure. Appendix A illustrates total CEO headcount and CEO gender for the population samples between the period of 2011 to 2016.

**Table 5**

ASX and JSE CEO gender comparison

	<u>ASX</u>		<u>JSE</u>	
	Male	Female	Male	Female
CEO gender	47	3	46	1
Gender ratio	94%	6%	98%	2%
COE total	53		48	

Source: Own research

Table 6 below alphabetically lists the 30 companies in the Australian Securities Exchange sample population. The six-year period of study resulted in the analysis of 180 observations for the descriptive statistics portion of the analysis.

**Table 6**

*Australian Securities Exchange Total Sample Population*

N	Australian Securities Exchange	Industry	N	Australian Securities Exchange	Industry
1	AGL Energy Ltd.	Utilities	16	Mirvac Group	Real estate
2	AMP Ltd.	Financial Services	17	National Australia Bank Ltd.	Financial Services
3	ANZ Banking Group Ltd.	Financial Services	18	Orica Ltd.	Manufacturing
4	APA Group	Utilities	19	Origin Energy Ltd.	Energy
5	ASX Ltd.	Financial Services	20	Qantas Airways Ltd.	Industrial
6	Caltex Australia	Energy	21	Ramsay Health Care Ltd.	Healthcare
7	Cochlear Ltd.	Healthcare	22	REA Group Ltd.	Information technology
8	Commonwealth Bank	Financial Services	23	Sonic Healthcare Ltd.	Healthcare
9	Crown Resorts Ltd.	Consumer Discretionary	24	Stockland Corporation Ltd.	Real estate
10	Dexus Units FP Stapled	Real estate	25	Suncorp Group Ltd.	Financial Services
11	GPT Group	Real estate	26	Telstra Corporation	Telecommunications
12	Incitec Pivot Ltd.	Manufacturing	27	Transurban Group	Industrial
13	Insurance Australia Group Ltd.	Financial Services	28	Wesfarmers Ltd.	Multiple Industries
14	Lendlease Group	Real estate	29	Westpac Banking Corp	Financial Services
15	Macquarie Group Ltd.	Financial Services	30	Woolworths Group Ltd.	Retail

Source: Own research



Table 7 alphabetically lists the sample population of 30 companies on the Johannesburg Stock Exchange. The six-year period of study resulted in the analysis of 180 observations for the descriptive statistics portion of analysis.

**Table 7**

*Johannesburg Stock Exchange Sample Population*

N	Johannesburg Stock Exchange	Industry	N	Johannesburg Stock Exchange	Industry
1	Anglo American Platinum Ltd.	Mining	16	Mr Price Group Ltd.	Retail
2	Aspen Pharmacare Holdings Ltd.	Healthcare	17	MTN Group Ltd.	Telecommunications
3	Assore Ltd.	Mining	18	Nedbank Group Ltd.	Financial Services
4	Barclays Africa Group Ltd.	Financial Services	19	Netcare Ltd.	Healthcare
5	Bidvest Group Ltd.	Multiple Industries	20	Redefine Properties Ltd.	Real Estate
6	Capitec Bank Holdings Ltd.	Financial Services	21	RMB Holdings	Financial Services
7	Discovery Ltd.	Healthcare	22	Sanlam Ltd.	Financial Services
8	Exxaro Resources Ltd.	Mining	23	Sasol Ltd.	Oil and Gas
9	FirstRand Ltd.	Financial Services	24	Shoprite Holdings Ltd.	Retail
10	Growthpoint Properties Ltd.	Real Estate	25	Standard Bank Group Ltd.	Financial Services
11	Imperial Holdings Ltd.	Logistics	26	Foschini Group Ltd.	Retail
12	Kumba Iron Ore Ltd..	Mining	27	Tiger Brands Ltd.	Manufacturing
13	Liberty Holdings Ltd.	Financial Services	28	Truworths International Ltd.	Retail
14	Life Healthcare Group Holdings Ltd.	Healthcare	29	Vodacom Group Ltd.	Telecommunications
15	MMI Holdings Ltd.	Financial Services	30	Woolworths Holdings Ltd.	Retail

Source: Own research

## 5.2 Descriptive statistics

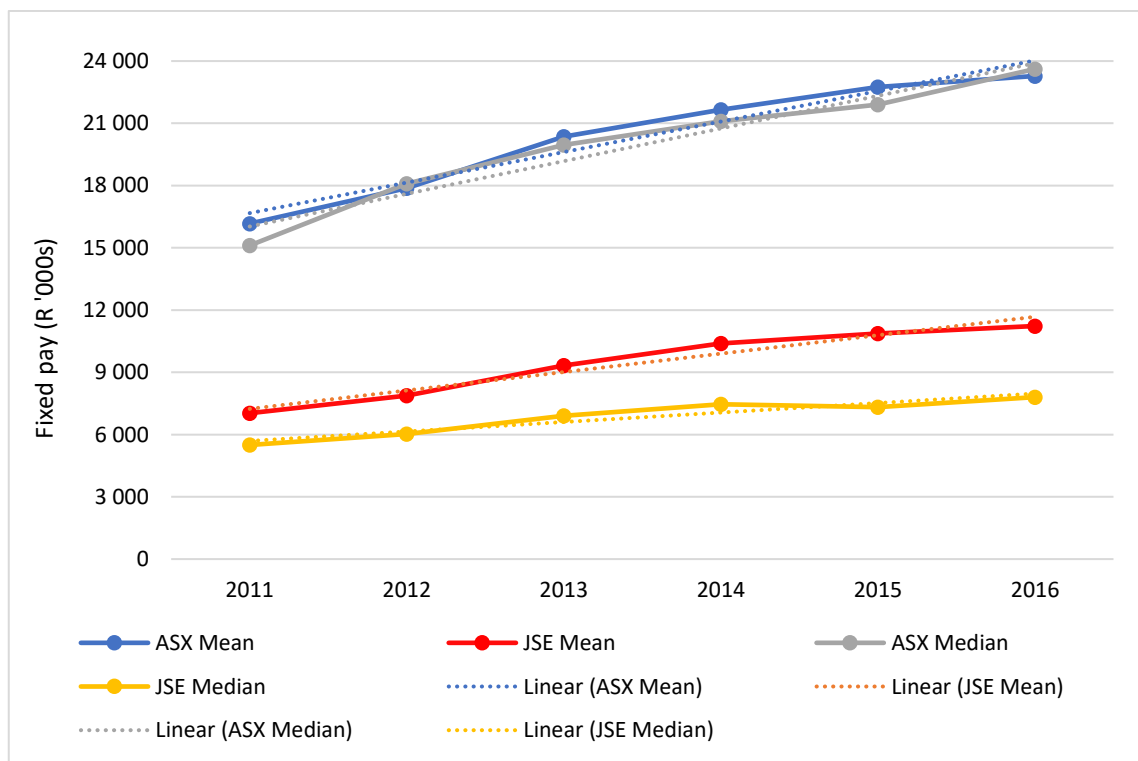
### 5.2.1 CEO Remuneration

The research evaluated three forms of CEO pay, namely fixed pay (basic salary and benefits), variable pay (short-term incentive bonuses) and total pay (sum of fixed pay and variable pay).

#### 5.2.1.1 Fixed pay

Figure 4 graphically represents the comparison of the mean and median for fix pay for both the sample population of ASX and JSE companies between 2011 to 2016. The upward trendlines on the graph indicate an increasing mean and median of fixed pay over the period. The fixed pay median for the ASX increases to meet the mean fixed pay in 2012 and again in 2016, indicating varying rates at which the median for CEO fixed pay for ASX companies increased at a greater rate than mean fixed pay.

Figure 4. ASX and JSE mean and median for fixed pay between 2011 to 2016 (R'000s)



Source: Own research

**Table 8***Fixed Pay Descriptive Statistics for the ASX and JSE between 2011 to 2016 (R'000s)*

R '000s Year	<u>Minimum</u>		<u>Median</u>		<u>Mean</u>		<u>Standard Deviation</u>		<u>Maximum</u>	
	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE
2011	5 000	3 544	15 113	5 500	16 169	7 031	6 807	5 969	38 815	36 475
2012	5 982	3 267	18 092	6 020	17 878	7 882	6 094	7 039	30 426	40 964
2013	6 678	3 570	19 958	6 907	20 359	9 330	7 427	8 967	40 883	50 001
2014	7 832	3 260	21 097	7 456	21 661	10 392	7 729	9 289	39 737	49 972
2015	7 499	-	21 904	7 322	22 748	10 876	9 463	9 880	49 438	50 092
2016	8 954	-	23 616	7 805	23 281	11 232	7 841	10 988	46 655	50 100

Source: Own research

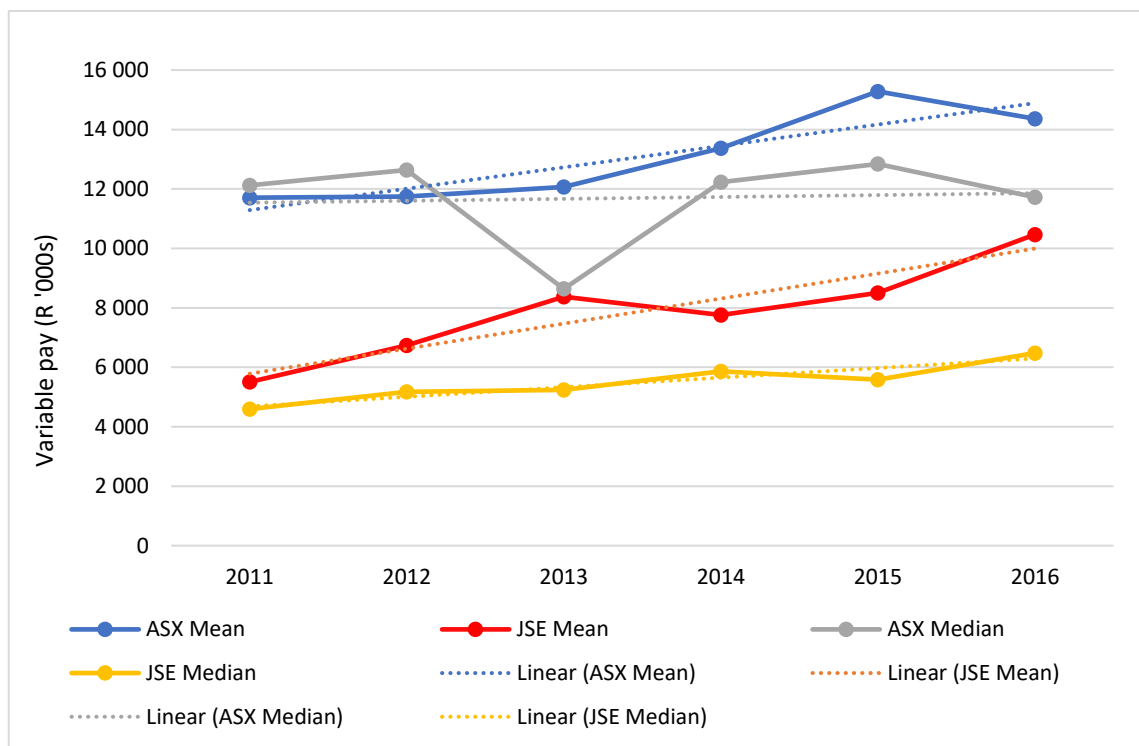
Table 8 contains the numerical summaries for the descriptive statistics for CEO fixed pay for the ASX and JSE. The total research sample of 60 companies comprised of 101 CEOs during the period of 2011 to 2016. Median fixed pay increased by an average of 56% for ASX firms over the period, with JSE firms achieving a 42% average median fixed pay increase over the period. ASX median fixed pay is on average a three times multiple of the JSE CEO median fixed pay, with the ASX mean fixed pay maintaining an average of a two times multiple of the JSE mean fixed pay.

Interestingly, minimum fixed pay increased for the ASX by 79%, while the JSE saw a zero minimum fixed pay for 2015 and 2016 due to a CEO opting to not accept any fixed pay in their total remuneration package. The exchange rate between SA and AUS has increased from an average of R7.49 in 2011 to R10.93 in 2016 to the Australian Dollar, weakening the Rand to Australian Dollar exchange, albeit the maximum fixed pay received by a JSE CEO has overtaken ASX CEO maximum pay.

### 5.2.1.2 Variable Pay

Figure 5 illustrates the mean and median figures for variable pay between 2011 to 2016, highlighting the 32% decrease in median variable pay for the ASX from 2012 to 2013 followed by a 41% increase in variable pay from 2013 to 2014. The ASX median variable pay trendline decreased by 3% over the period, with mean variable pay showing a positive increase. The mean and median variable pay upward trendlines for the JSE illustrate a positive growth over the period.

Figure 5. Mean and median of variable pay for the ASX and JSE between 2011 to 2016 (R'000s)



Source: Own research

The variable pay component of CEO compensation was tabulated in Table 9 below. Key growths are highlighted by a 257% growth in maximum variable pay for the JSE compared to 96% growth in variable pay for the ASX, indicating that the STI bonuses of the JSE CEOs are increasing at a faster rate than those of the ASX.

While the fixed pay component of remuneration is guaranteed to CEOs, the variable pay is dependent on a number of stipulated performance criteria. The minimum figure remained at zero for both the ASX and JSE for each year over the period, indicating years where there was no variable pay awarded to the CEO.

**Table 9**

Variable Pay Descriptive Statistics for the ASX and JSE between 2011 to 2016 (R'000s)

R '000s Year	<u>Minimum</u>		<u>Median</u>		<u>Mean</u>		<u>Standard Deviation</u>		<u>Maximum</u>	
	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE
2011	-	-	12 123	4 595	11 706	5 506	7 104	4 078	29 670	14 007
2012	-	-	12 633	5 173	11 742	6 739	7 345	5 132	27 999	15 383
2013	-	-	8 638	5 242	12 063	8 370	8 756	8 703	33 232	41 790
2014	-	-	12 226	5 864	13 374	7 759	7 640	7 614	33 316	30 616
2015	-	-	12 840	5 589	15 281	8 499	11 077	9 557	45 886	44 000
2016	-	-	11 726	6 480	14 358	10 466	11 566	11 987	58 102	50 000

Source: Own research

### 5.2.1.3 Total pay

**Table 10**

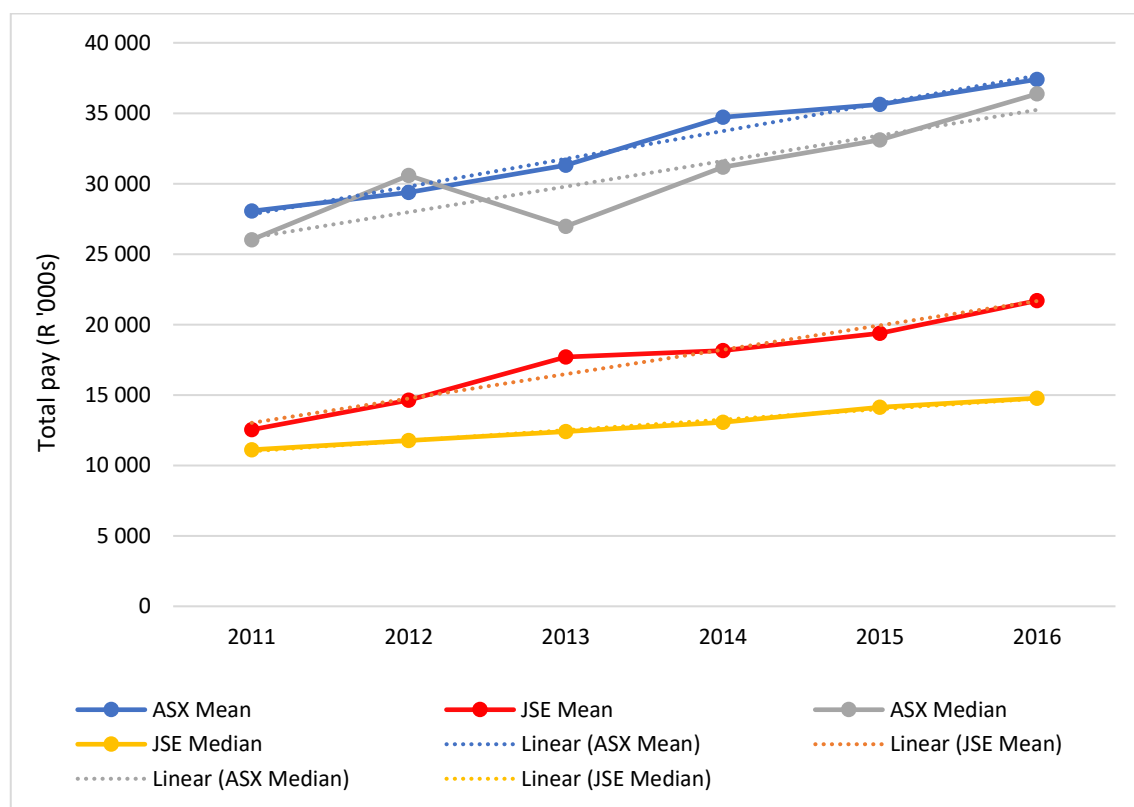
Total Pay Descriptive Statistics for the ASX and JSE between 2011 to 2016 (R'000s)

R '000s Year	<u>Minimum</u>		<u>Median</u>		<u>Mean</u>		<u>Standard Deviation</u>		<u>Maximum</u>	
	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE
2011	8 750	5 245	26 026	11 114	28 053	12 536	11 074	6 998	52 897	36 475
2012	8 169	5 300	30 581	11 759	29 380	14 621	11 409	8 563	58 425	40 964
2013	12 848	4 711	26 968	12 395	31 305	17 700	12 940	13 923	63 005	70 326
2014	10 584	5 300	31 166	13 072	34 726	18 151	12 626	13 263	68 342	56 590
2015	8 341	-	33 105	14 140	35 635	19 375	15 734	16 050	81 573	78 669
2016	15 960	-	36 372	14 774	37 403	21 699	13 492	22 349	67 056	100 100

Source: Own research

Table 10 above is comprised of the descriptive statistics figures for total pay for the ASX and JSE. Total pay for this study is the sum of the above two variables of fixed and variable pay. 2015 and 2016 showed zero minimum fixed pay figures for the JSE indicating a situation in which a CEO received no fixed or variable pay and possibly opted for long-term incentive pay packages which are excluded from measurement in this study. Minimum total pay for the ASX grew on average 82% over the period but showed substantial fluctuation, in comparison to maximum total pay only growing 27% for the JSE. JSE average mean pay increased by 73% over the period, in comparison to only 33% for ASX companies. Interestingly, although below the ASX from 2011 to 2015, maximum total pay for the JSE exceeded ASX maximum total pay in 2016 by 49%.

Figure 6. Mean and median of total pay for the ASX and JSE between 2011 to 2016 (R'000s)



Source: Own research

Figure 6 depicts the mean and median values of total pay for both the ASX and JSE sample populations. A clear upward trend can be viewed from the illustrated trendlines for both median and mean results. 2012 saw an average decline of 12% in median pay for the ASX. Total pay is expressed as the sum of fixed pay and variable pay, this noticed decrease can possibly be attributed to the decline in variable pay in 2012 as discussed.

## 5.2.2 Summary of CEO Remuneration

The descriptive statistics discussed above highlight the values of the three components of CEO remuneration over time, with all mean and median values showing an increasing trend between 2011 and 2016, except for the median values for variable pay of the ASX, which showed a decline over the 6-year period.

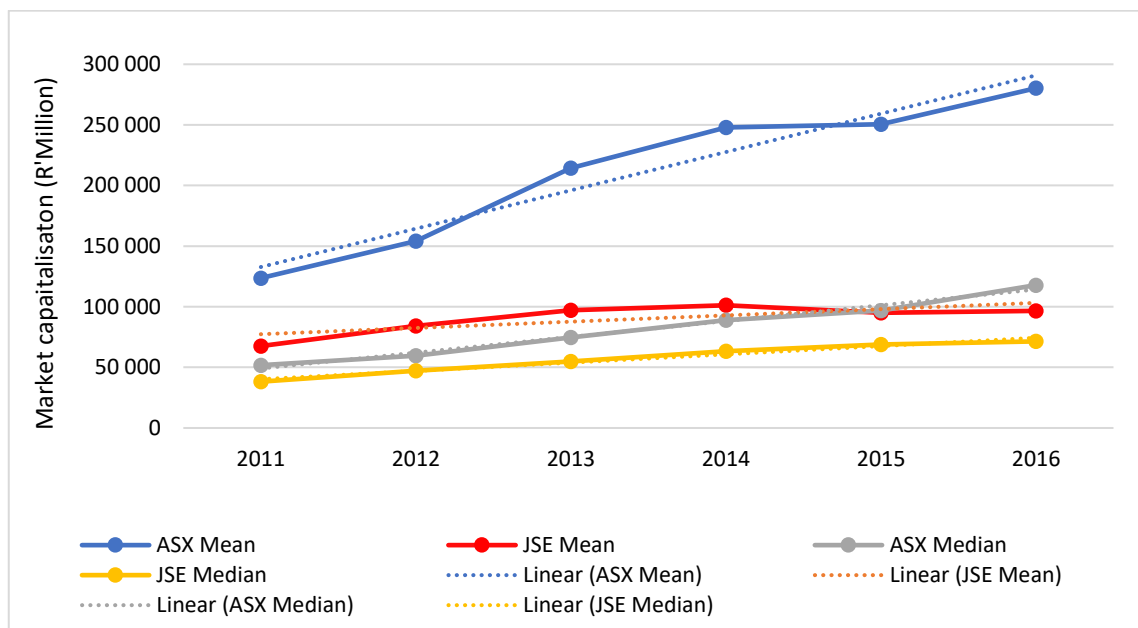
## 5.3 Company financial performance measures

The six independent variables for company financial performance adopted in this study are the traditional accounting-based measures of return on equity (ROE), return on assets (ROA) and earnings per share (EPS), and the market-based measures of market capitalisation (MC), economic value added (EVA™) and market value added (MVA). The company financial performance measures are discussed individually in the following subsections

### 5.3.1 Market Capitalisation (MC)

Figure 7 shows the plot for the mean and median market capitalisation for the ASX and JSE between 2011 and 2016. The overall trendlines indicate a positive increase in market capitalisation over the 6-year period, yet a year-on-year decline is observed for the JSE mean values in 2014.

Figure 7. Mean and median of market capitalisation for the ASX and JSE between 2011 to 2016 (R'Million)



Source: Own research

The numerical descriptive statistics for market capitalisation are expressed in Table 11 for the ASX and JSE. The minimum market capitalisation of a firm on the ASX grew by 347% over the period, in comparison to 66% on the JSE; this growth trend slowed to 127% for the maximum market capitalisation for ASX companies compared to a decline of 7% for companies on the JSE. The standard deviation for the JSE showed both growth and decline over the period, compared to the standard deviation for the ASX that increased in line with the growth rates of mean and median MC value.

**Table 11**

*Market Capitalisation Descriptive Statistics for the ASX and JSE between 2011 to 2016 (R'Million)*

R'Million Year	<u>Minimum</u>		<u>Median</u>		<u>Mean</u>		<u>Standard Deviation</u>		<u>Maximum</u>	
	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE
2011	11 627	15 179	51 799	38 231	123 651	67 584	152 801	65 149	610 767	270 904
2012	15 376	18 367	59 748	47 148	154 091	84 209	202 384	78 568	719 851	334 507
2013	28 147	21 515	74 632	54 948	214 237	97 173	293 469	97 400	1 037 127	411 372
2014	27 041	21 186	89 032	63 360	247 970	101 224	324 146	90 859	1 281 324	409 244
2015	43 974	13 270	96 955	68 782	250 662	94 907	318 704	75 608	1 331 743	299 098
2016	51 996	25 131	117 824	71 427	280 276	96 544	345 084	75 024	1 393 985	251 529

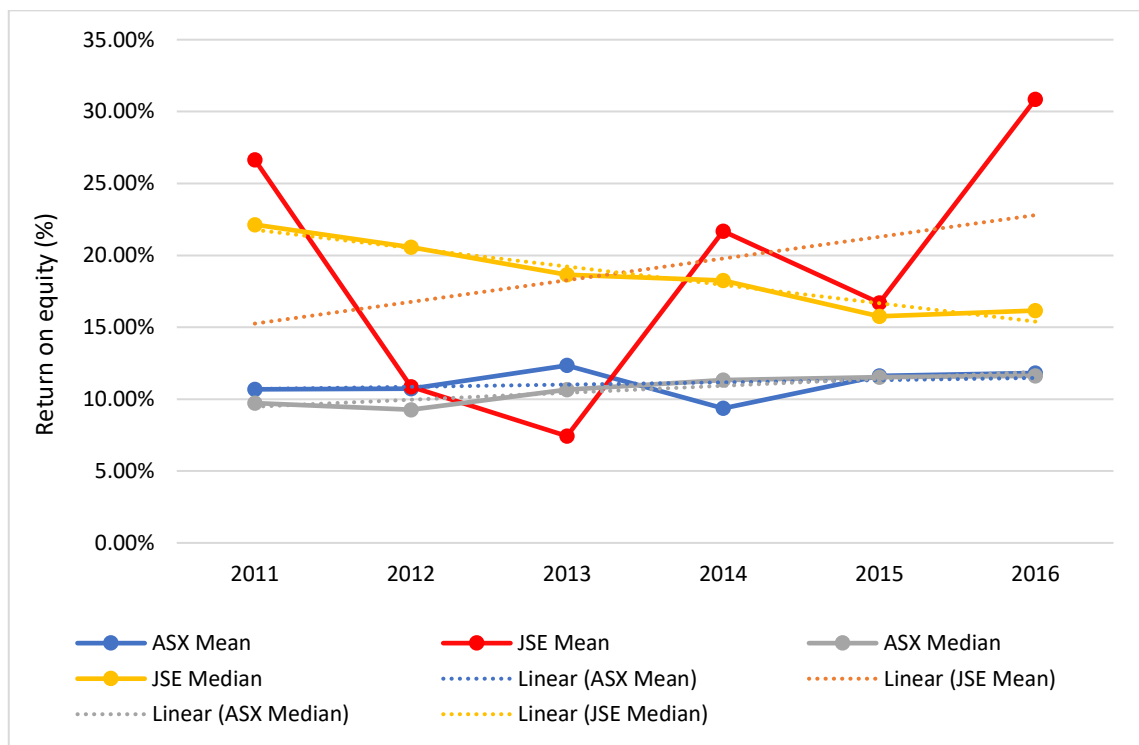
Source: Own research



### 5.3.2 Return on equity (ROE)

Figure 8 depicts the volatility of the JSE mean and median ROE over the 6-year period, with the median ROE showing a downward trendline from a ROE value of 22.14% in 2011 to 16.16% in 2016. Although volatile the mean ROE for the JSE still maintains an upward trend. The ASX mean and median have closely linked trendlines that converge towards the later period of study.

Figure 8. Mean and median of return on equity for the ASX and JSE between 2011 to 2016 (%)



Source: Own research

Table 12 tabulates the numeric values of the descriptive statistics for the accounting-based measure of ROE for the ASX and JSE expressed as a percentage. The minimum figures identified in both tables indicate years when organisations achieved a negative return on equity, except in 2013 where the ASX achieved a marginally positive return on equity. The standard deviation for the JSE in Table 12 showed volatility, with a low of 13.20 in 2014 and a high of 93.83 in 2013, illustrating the movement of ROE varying around the mean in a year-on-year comparison. The variation of the standard deviation around the mean for the ASX is far smaller with a high of 22.12% in 2014 and a low of 8.15% in 2012. The mean and median figures for the ASX are less volatile.

**Table 12***Return on Equity Descriptive Statistics for the ASX and JSE between 2011 to 2016 (%)*

% Year	<u>Minimum</u>		<u>Median</u>		<u>Mean</u>		<u>Standard Deviation</u>		<u>Maximum</u>	
	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE
2011	-32.17	-22.73	9.72	22.14	10.68	26.64	12.13	21.60	35.79	107.64
2012	-4.16	-254.50	9.27	20.56	10.72	10.86	8.15	57.51	34.76	63.50
2013	0.02	-483.65	10.66	18.65	12.34	7.43	9.37	93.83	37.39	61.23
2014	-99.20	-2.56	11.32	18.24	9.36	21.69	22.12	13.20	36.67	55.78
2015	-42.43	-31.49	11.53	15.76	11.61	16.69	14.12	14.75	41.04	58.55
2016	-14.06	-2.48	11.62	16.16	11.82	30.86	12.64	73.09	42.12	412.75

Source: Own research

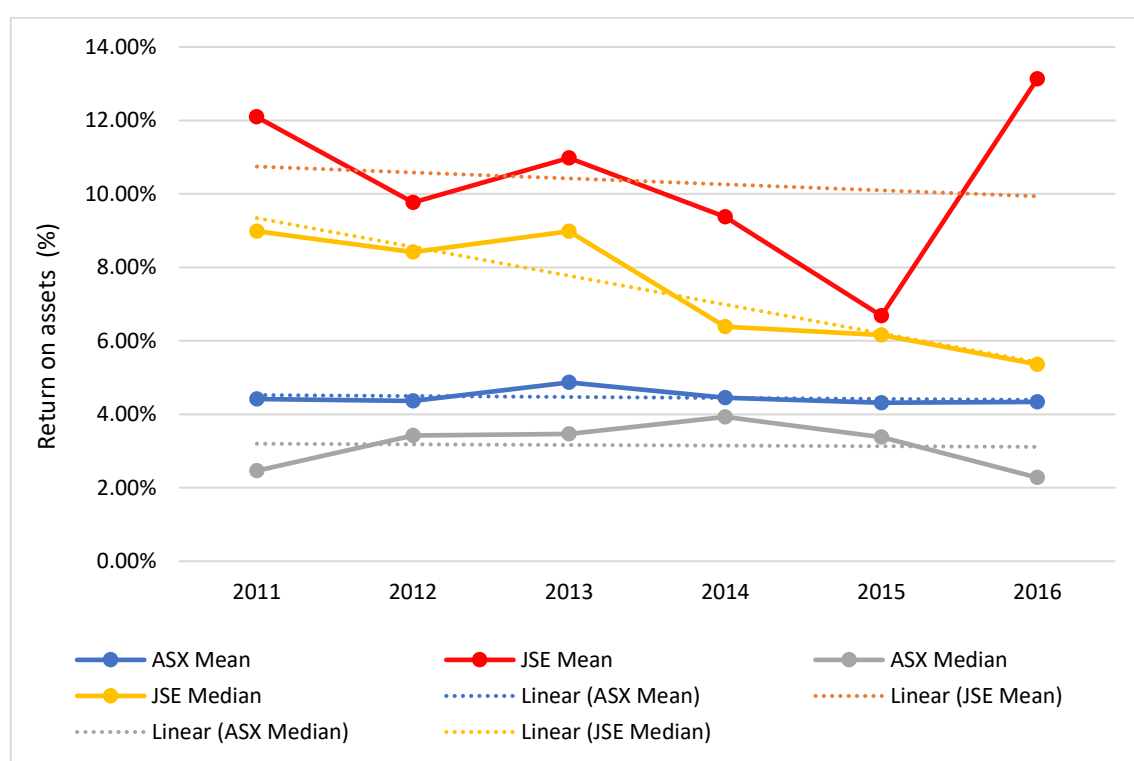
**5.3.3 Return on assets (ROA)****Table 13***Return on Assets Descriptive Statistics for the ASX and JSE between 2011 to 2016 (%)*

% Year	<u>Min</u>		<u>Median</u>		<u>Mean</u>		<u>Std Deviation</u>		<u>Max</u>	
	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE
2011	-14.68	-1.37	2.47	8.98	4.41	12.09	7.30	12.88	27.67	49.54
2012	-1.16	-9.47	3.42	8.41	4.36	9.77	5.53	11.30	28.90	33.72
2013	0.00	-1.57	3.47	8.98	4.87	10.98	5.80	10.42	27.79	34.68
2014	-16.42	-1.86	3.93	6.39	4.45	9.38	6.82	8.90	28.87	29.79
2015	-17.31	-16.95	3.38	6.16	4.32	6.68	7.49	8.61	31.35	29.15
2016	-5.25	-0.97	2.28	5.36	4.34	13.14	5.78	32.49	19.73	180.87

Source: Own research

The numerical values of the descriptive statistics for the accounting-based measure of financial performance ROA are tabulated in Table 13 for the ASX and the JSE. Expressed as a percentage, the negative ROA figures found under the minimum column for both populations indicate a negative return indicative of the poor utilisation of assets by the organisation. The median ROA has decreased by 40.33% for the JSE in comparison to only 7.62% for the ASX over the period of study, yet the percentage-based return for the JSE have consistency been more substantial than those of the ASX.

Figure 9. Mean and median of return on assets for the ASX and JSE between 2011 to 2016 (%)



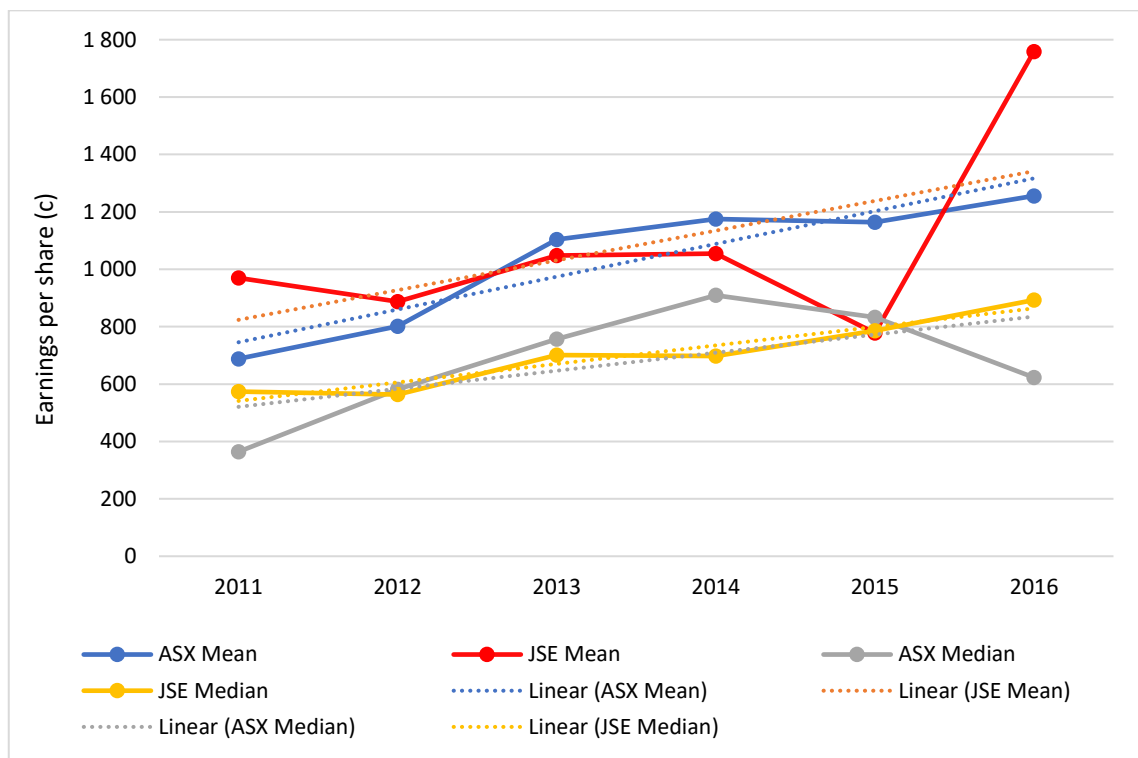
Source: Own research

Figure 9 depicts the mean and median ROA for both the ASX and JSE from 2011 to 2016. Achieving a greater return than the ASX, the downward trendlines of the JSE mean and median are clearly illustrated, indicating a decreasing ROA return over the six-year period. The trendline for the ASX remained flat over the period with less volatile fluctuation in the mean and median when compared to the JSE.

### 5.3.4 Earnings per share (EPS)

Figure 14 clearly depicts the upward trend in EPS returns for both the mean and median for the ASX and JSE, indicating increase in profit generation by the sample populations. Although oscillating, the JSE mean trend line-maintained returns greater than that of the ASX mean trend line. The less volatile returns of the JSE median returns a slightly higher overall EPS trend line for the period than the fluctuating ASX median over the period.

Figure 10. Mean and median of earnings per share for the ASX and JSE between 2011 to 2016 (%)



Source: Own research

Earnings per share, being an accounting-based measure of company performance was calculated for each of the six periods between 2011 and 2016, the results were captured in Table 14 for the ASX and for the JSE. Negative returns can be observed in the minimum column for both the ASX and JSE indicating years in which the company made a loss. Median EPS growth over the period is 71.07% for the ASX and 55.51% for the JSE, with the mean growth of each population at 82.50% and 81.50% for the ASX and JSE respectively.

**Table 14***Earnings Per Share Descriptive Statistics for the ASX and JSE between 2011 to 2016 (cents)*

cents Year	<u>Minimum</u>		<u>Median</u>		<u>Mean</u>		<u>Standard Deviation</u>		<u>Maximum</u>	
	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE
2011	- 2 843	- 23	364	574	688	970	1 049	1 095	3 082	5 292
2012	- 98	- 2 476	581	563	801	887	824	1 231	3 800	3 877
2013	-	- 508	757	701	1 103	1 048	1 053	1 136	4 405	4 796
2014	- 1 347	- 247	909	697	1 176	1 055	1 274	1 061	5 213	4 547
2015	- 3 291	- 4 582	833	786	1 163	778	1 599	1 365	5 364	4 564
2016	- 1 056	- 139	623	893	1 256	1 759	1 749	4 328	6 706	24 300

Source: Own research

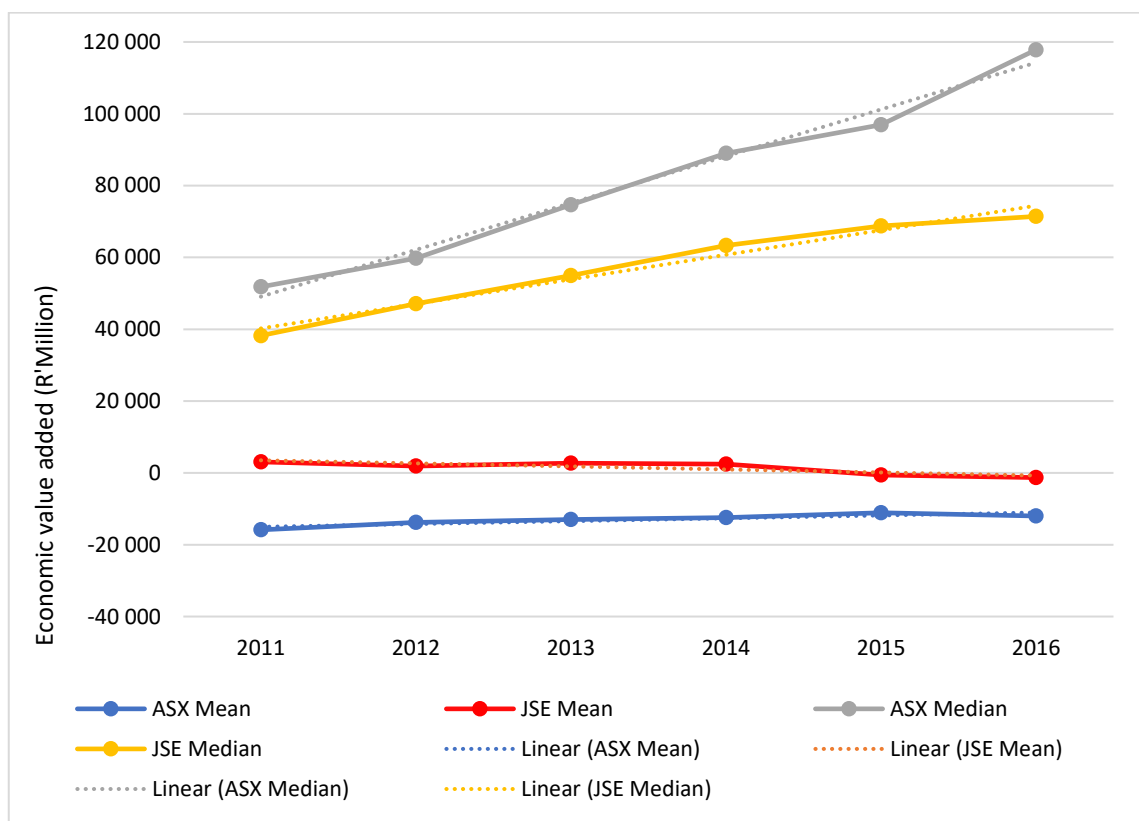
**5.3.5 Economic value added (EVA™)****Table 15***Economic Value Added Descriptive Statistics for the ASX and JSE between 2011 to 2016 (R'Million)*

R' million Year	<u>Minimum</u>		<u>Median</u>		<u>Mean</u>		<u>Standard Deviation</u>		<u>Maximum</u>	
	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE
2011	-137 714	- 4 331	- 3 748	1 607	-15 855	3 054	34 668	5 188	19 441	20 138
2012	-119 189	- 11 960	- 1 051	1 292	-13 818	1 951	33 903	6 177	29 582	14 401
2013	-104 432	- 8 598	- 1 365	1 573	-12 978	2 728	31 892	5 723	29 759	16 327
2014	-112 804	- 12 664	- 2 585	1 266	-12 407	2 453	32 498	5 952	31 150	14 510
2015	-110 104	- 22 342	- 2 668	834	-11 102	- 574	32 126	7 603	24 800	16 583
2016	-107 255	- 25 072	- 1 038	- 212	-12 026	- 1 302	31 368	7 583	30 220	14 708

Source: Own research

Economic value added (EVA™) is a market-based value of organisation performance with negative figures indicating the erosion of shareholder value. Table 15 captures the EVA findings for the ASX and JSE respectively for the research period of 2011 to 2016. Negative results can be witnessed for the minimum, mean and median for both the ASX and JSE. Fewer negative EVA™ values are reported for the JSE in the table, indicating that JSE companies appear to be better at creating shareholder value from the capital invested when compared to the ASX companies.

Figure 11. Mean and median of economic value added for the ASX and JSE between 2011 to 2016 (R'Million)



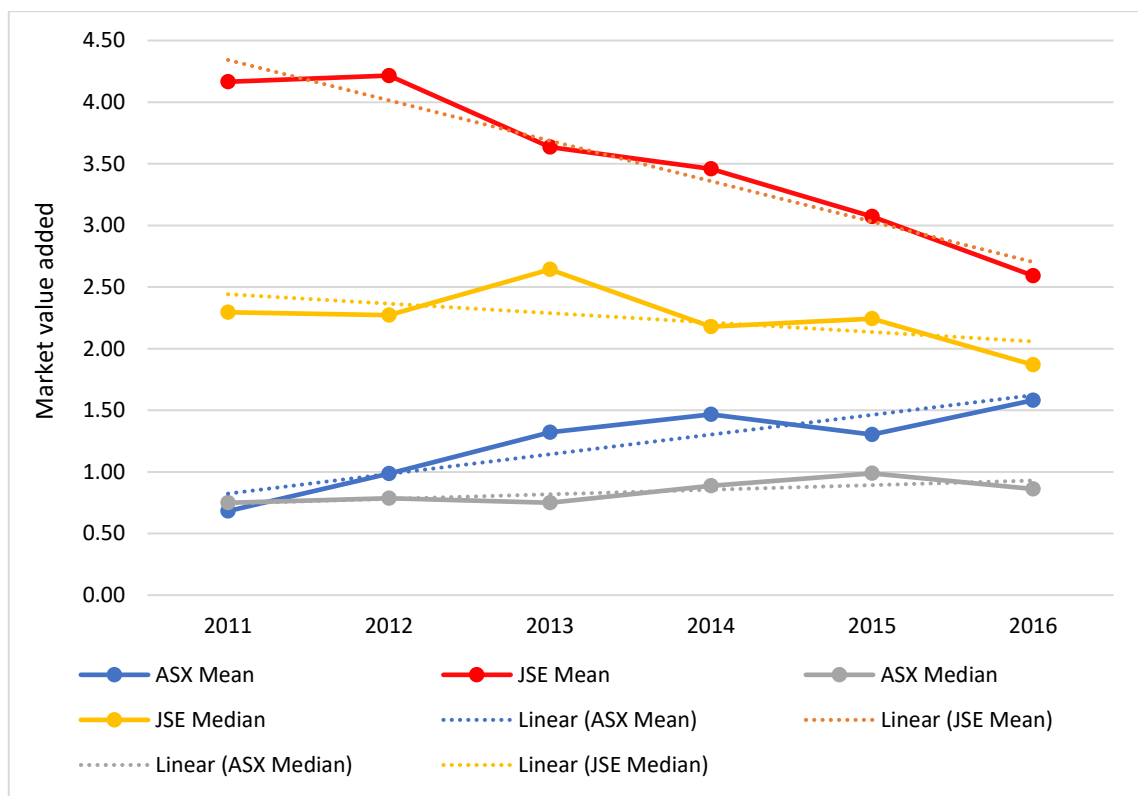
Source: Own research

Figure 11 depicts a graphical representation of the EVA™ mean and median figures for the ASX and JSE sample population between 2011 and 2016. An upward trend can be established for the median values of both the ASX and JSE, indicating an increase in shareholder value creation over the period. The trend for the mean values of the ASX and JSE remain predominantly flat, with a nominal decrease in the JSE and a nominal increase in the ASX over the research period.

### 5.3.6 Market Value added

Figure 12 plots the trajectory of mean and median for the ASX and JSE MVA values between 2011 and 2016. A significant downward trend is established for the JSE mean, although still maintaining a higher MVA than that of the ASX mean over the period. This downward trend can be attributed to MC being utilised as the numerator in the MVA equation, Table 16 depicts the decrease in JSE MC growth over the period. A downward trend in MVA is representative of a decrease in shareholder value creation. The JSE median shows a flatter downward trend, as opposed to the upward trend of the ASX median and mean.

Figure 12. Mean and median of market value added for the ASX and JSE between 2011 to 2016



Source: Own research

The market-based measure of organisational performance MVA is found in Table 16 for the ASX and the JSE for the six years of the research period between 2011 and 2016. MC is expressed as a ratio to remove the effects of company size when comparing the findings of value creation. The median value for the ASX is maintained between 1 and 0.75 for the period with limited fluctuations, while the JSE experiences more volatility between a high of 2.68 and a low of 1.87. The minimum negative MVA results for both the ASX and JSE represent periods when a company destroyed shareholder value. The maximum MVA results for the ASX show an overall improvement in shareholder value creation, with the JSE illustrating an overall decline in shareholder value creation. Considering the MVA descriptive statistics as a whole, it can be established that the JSE is more effective at creating shareholder value than the ASX over the period.

**Table 16**

Market Value Added Descriptive Statistics for the ASX and JSE between 2011 to 2016

Year	<u>Minimum</u>		<u>Median</u>		<u>Mean</u>		<u>Standard Deviation</u>		<u>Maximum</u>	
	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE
2011	- 12.60	- 2.41	0.75	2.30	0.68	4.17	2.90	5.23	8.17	24.94
2012	- 10.06	- 5.52	0.79	2.27	0.99	4.22	2.79	5.96	9.81	28.96
2013	- 5.18	- 6.75	0.75	2.64	1.32	3.63	2.35	3.99	9.19	15.71
2014	- 5.13	- 3.75	0.89	2.18	1.47	3.46	2.40	4.16	9.98	20.86
2015	- 6.90	0.37	0.99	2.24	1.30	3.07	2.34	3.57	9.21	18.98
2016	- 2.73	0.71	0.86	1.87	1.58	2.59	2.45	2.20	12.25	10.23

Source: Own research



## 5.4 Diagnostic checking

### 5.4.1 Test for normality

The Shapiro–Wilk test was used to test if the distribution of scores are significantly different from a normal distribution. The presence of a significant value ( $p \leq 0.05$ ) indicates the scores are not normally distributed.

The test for normality adopts the following hypotheses.

$H_0$  = The data is normally distributed

$H_1$  = The data is not normally distributed

A p-value of 0.05, representing a 5% level of significance or 95% confidence level was accepted, requiring that the results of the test be interpreted as follows:

$p \leq 0.05$ , reject the  $H_0$ , the data is therefore not normally distributed

$p > 0.05$ , accept the  $H_0$ , the data is therefore normally distributed

From the results provided in Table 17 and Table 18 the significance level for each of the dependant and independent variables for both the ASX and JSE is below the stipulated 0.05 level of significance, indicating the scores are not normally distributed, violating the assumption of normality. The  $H_0$  is therefore rejected in favour of the  $H_1$ .

Two sets of tests were considered for correlation analysis of the data, the parametric Pearson's correlation coefficient for normally distributed data and the non-parametric Spearman's correlation coefficient test is designed to be adopted when the data is not normally distributed (Pallant, 2016). Due to the non-normal distribution of the data, the Spearman's correlation coefficient was utilised for this study to determine the relationships between the dependant and independent variables.

**Table 17**

Shapiro–Wilk test for Normal Distribution for ASX

		Statistic	Df	<i>p</i>	Sig.
CEO remuneration	Fixed pay	0,8407	180	0,05	<0,0001
	Variable pay	0,9633	180	0,05	<0,0001
	Total pay	0,9448	180	0,05	<0,0001
Company financial performance measures	Market capitalisation	0,6594	180	0,05	<0,0001
	Return on equity	0,8972	180	0,05	<0,0001
	Return on assets	0,8232	180	0,05	<0,0001
	Earnings per share	0,8943	180	0,05	<0,0001
	Economic value added	0,6297	180	0,05	<0,0001
	Market value added	0,7030	180	0,05	<0,0001

Source: Own research

**Table 18**

Shapiro–Wilk test for Normal Distribution for JSE

		Statistic	Df	<i>p</i>	Sig.
CEO remuneration	Fixed pay	0,5891	180	0,05	<0,0001
	Variable pay	0,7671	180	0,05	<0,0001
	Total pay	0,7182	180	0,05	<0,0001
Company financial performance measures	Market capitalisation	0,7875	180	0,05	<0,0001
	Return on equity	0,3660	180	0,05	<0,0001
	Return on assets	0,5514	180	0,05	<0,0001
	Earnings per share	0,4404	180	0,05	<0,0001
	Economic value added	0,9405	180	0,05	<0,0001
	Market value added	0,6982	180	0,05	<0,0001

Source: Own research

### 5.4.2 Test for autocorrelation

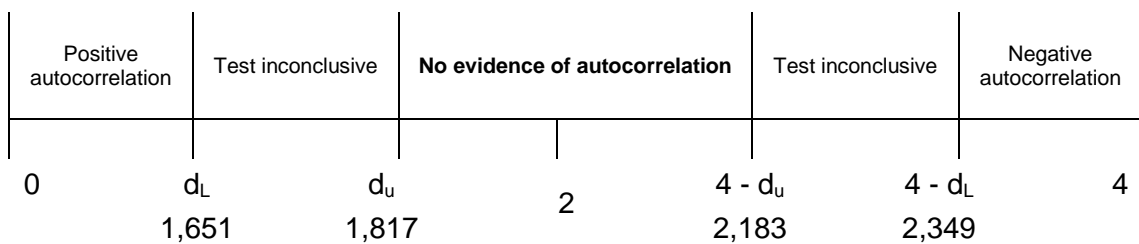
Polakow (2010) cautions on the need to test for auto-correlation to avoid the outcome of “spurious’ statistical measures - spurious  $R^2$  in the case of regression and spurious measures of global relationships, in the case of correlation” (p. 53). The Durbin-Watson test for autocorrelation with probability values for testing for the presence of positive or negative autocorrelation was used.

Field (2013) comments that as a conservative rule Durbin-Watson results between 1 – 3 are to be deemed acceptable but values closer to 2 may be problematic, recommending the interpretation of the results in line with the findings of Durbin and Watson (1950). The Durbin-Watson statistics (DW) has been interpreted under the guidelines of Durbin and Watson (1950), utilising the Durbin-Watson static tables from Savin and White (1977).

- Upper Durbin-Watson limit -  $d_u$  1.817
- Lower Durbin-Watson limit -  $d_L$  1.651
- $\alpha = 0.05$  or a 5% level of significance
- $k = 6$
- $N = 150$

Figure 13 graphically depicts the limits of the test used for the interpretation of the presence of autocorrelation.

Figure 13. Autocorrelation area of acceptance and rejection



**Table 19***Durbin-Watson test for Autocorrelation on the ASX*

	FP	VP	TP
Durbin-Watson (DW)	2.11	1.894	2.01
Pr < DW	0.7678	0.237	0.5235
Pr > DW	0.2322	0.763	0.4765
Number of Observations	180	180	180
1st Order Autocorrelation	-0.06	0.048	-0.01

Source: Own research

Note: Pr &lt; DW is the p-value for testing positive autocorrelation

Pr &gt; DW is the p-value for testing negative autocorrelation

**Table 20***Durbin-Watson test for Autocorrelation on the JSE*

	FP	VP	TP
Durbin-Watson (DW)	1.419	2.194	1.518
Pr < DW	<0.0010	0.906	0.0005
Pr > DW	0.999	0.094	0.9995
Number of Observations	180	180	180
1st Order Autocorrelation	0.287	-0.104	0.233

Source: Own research

Note: Pr &lt; DW is the p-value for testing positive autocorrelation

Pr &gt; DW is the p-value for testing negative autocorrelation

Table 19 lists the Durbin-Watson results for the ASX, the results of fixed pay (FP) 2.110, variable pay (VP) 1.894 and total pay (TP) 2.010 are within the acceptable limits of  $d_L$  1.651 to  $4-d_L$  2.349, indicating the absence of autocorrelation.

Table 20 lists the Durbin-Watson results for the JSE, the fixed pay (FP) result of 1.419 is below the  $d_L$  limit of 1.651 indicates the presence of positive autocorrelation, confirmed by the significant p-value of less than 0.05. Variable pay (VP) 1.518 is deemed acceptable within the limits and total pay (TP) 1.518 indicate an inconclusive result for autocorrelation falling between the limits but has a p-value of below 0.05 indicating positive autocorrelation.

From the results of the Durbin-Watson tests for autocorrelation it can be concluded that the ASX sample population does not suffer from autocorrelation, in comparison the JSE sample population does suffer from autocorrelation.

### 5.4.3 Data transformation

Following the findings of the presence of autocorrelation in the time series data and to ensure the correct statistical interpretation of the results, the data was transformed and standardised in line with the steps outlined in section 4.3.3 of the methodology above.

The results of the first step of the transformation process removed the effects of autocorrelation on the data. The negative consequence of this process was the loss of 1 years' worth of observations decreasing the years observed from 6 to 5 and the observations from 180 to 150 observations per sample population.

The second step, data standardisation ensured that the data had a mean of zero and a standard deviation of 1. The results of the data transformation process are listed under Appendix B - D.

### 5.4.4 Retest for autocorrelation

The transformed data was retested to verify the removal of autocorrelation. Table 21 for the ASX and Table 22 for the JSE state the rerun Durbin-Watson statistics for the new sample size of 150 observations. The rerun Durbin-Watson figures for both the ASX and JSE do not fall within the limits of either positive or negative autocorrelation as defined by Figure 13, confirming the correction of the autocorrelation through the standardisation process.

**Table 21**

*Durbin-Watson test for autocorrelation for the ASX (standardised data)*

	FP	VP	TP
Durbin-Watson D	2.116	2.305	2.193
Pr < DW	0.7562	0.9689	0.8783
Pr > DW	0.2438	0.0311	0.1217
Number of Observations	150	150	150
1st Order Autocorrelation	-0.063	-0.157	-0.101

Source: Own research

Note: Pr < DW is the p-value for testing positive autocorrelation

Pr > DW is the p-value for testing negative autocorrelation

**Table 22**

Durbin-Watson test for Autocorrelation on the ASX (standardised data)

	FP	VP	TP
Durbin-Watson D	1.88	2.273	2.133
Pr < DW	0.2277	0.9524	0.7891
Pr > DW	0.7723	0.0476	0.2109
Number of Observations	150	150	150
1st Order Autocorrelation	0.055	-0.139	-0.069

Source: Own research

Note: Pr &lt; DW is the p-value for testing positive autocorrelation

Pr &gt; DW is the p-value for testing negative autocorrelation

## 5.5 Results from research questions

### 5.5.1 Introduction for research questions

In order to study the relationship between the dependent variables of CEO remuneration and the independent variables of the financial performance of the company, a statistical analysis was conducted using the Spearman's correlation coefficient. The Spearman's correlation coefficient is a non-parametric test for correlation analysis and was selected due to the non-normally distributed data for both sample populations as confirmed by the significant findings of the Shapiro-Wilk test.

The results of the Spearman's correlation coefficient test will be used to answer research questions 1 and 2, to identify the strength and significance of the relationships between each dependant and independent variable. The results are interpreted using Table 23 and Table 24 below, at  $p = 0.05$  or 5% level of significance, alternatively expressed as a 95% confidence interval. The level of significance does not determine the strength of the relationship but indicates the level of confidence in the finding. The sign of the relationship indicates the direction of the relationship, a negative sign indicates the inverse relationship between the variables.

The Spearman's correlation coefficient test is expressed in the below hypothesis

$H_0$  = There is no significant correlation between the variables

$H_1$  = There is a significant correlation between the variables

The p-value of 0.05 represents a 5% level of significance or a 95% confidence interval, the test was interpreted as follows.

$p \leq 0.05$ , reject the  $H_0$  due to the presence of a significant correlation

$p > 0.05$ , accept the  $H_0$  due to the absence of the significant correlation

**Table 23**

*Level of significance observation key*

Relationship is significant	$p \leq$	0,05
Relationship is not significant	$p >$	0,05

Source: Own research

**Table 24**

*Spearman's Colour Coded Correlation Coefficient Strengths*

Relationship direction	Correlation coefficient		Relationship strength	
Positive relationship	0,70	$< r \leq$	1,00	Very strong relationship
	0,50	$< r \leq$	0,69	Strong relationship
	0,30	$< r \leq$	0,49	Moderate relationship
	0,10	$< r \leq$	0,29	Weak relationship
	0,00	$< r \leq$	0,09	Negligible relationship
	$r =$		0	No relationship
Negative relationship	-0,09	$\leq r <$	0,00	Negligible relationship
	-0,29	$\leq r <$	-0,10	Weak relationship
	-0,49	$\leq r <$	-0,30	Moderate relationship
	-0,69	$\leq r <$	-0,50	Strong relationship
	-1,00	$\leq r <$	-0,70	Very strong relationship

Source: Adapted from Kotrlík, Williams, and Jabor (2011)

## 5.5.2 Results from research question 1

### Research question 1

*Is a significant relationship present between executive pay and the financial performance of ASX companies over the six-year research period and during each individual year of study?*

### Sub-question 1.1

*Is there a significant relationship between executive fixed pay and the financial performance of ASX companies over the six-year research period and during each individual year of study?*

Table 25 contains the results of the findings of the relationship between fixed pay and the financial performance measures for the 5-year period between 2012 to 2016 for the ASX. The correlation of each variable with fixed pay utilises the 30 observations per year, and 150 observations overall when calculating the correlation coefficients.

**Table 25**

*Relationship between Fixed Pay and the Financial Performance of the ASX*

		<u>2012</u> FP	<u>2013</u> FP	<u>2014</u> FP	<u>2015</u> FP	<u>2016</u> FP	<u>Overall</u> FP
MC	<i>r</i>	0.0345	0.3593	0.0465	0.4287	0.2746	0.1311
	<i>p</i>	0.8564	0.0512	0.8072	0.0181	0.1420	0.1097
ROE	<i>r</i>	0.3984	-0.1448	0.0033	0.0171	-0.1230	0.0385
	<i>p</i>	0.0292	0.4451	0.9860	0.9284	0.5171	0.6397
ROA	<i>r</i>	0.2765	0.0877	0.0977	-0.1337	0.0200	0.0562
	<i>p</i>	0.1391	0.6451	0.6077	0.4812	0.9164	0.4943
EPS	<i>r</i>	0.1422	0.2258	0.0029	-0.0165	0.0087	0.0782
	<i>p</i>	0.4536	0.2302	0.9879	0.9312	0.9637	0.3417
MVA	<i>r</i>	-0.0634	0.1506	0.1128	0.1275	0.2521	0.0146
	<i>p</i>	0.7392	0.4269	0.5529	0.5020	0.1790	0.8590
EVA	<i>r</i>	0.0723	-0.0340	0.0456	0.1444	0.1117	0.1028
	<i>p</i>	0.7042	0.8583	0.8109	0.4465	0.5568	0.2109

Source: Own research

MC showed two years of positive moderate relationships with fixed pay in 2013 and 2015, in 2015 the positive moderate relationship was also significant. In 2012 the relationship between ROE and fixed pay was significant with a positive moderate strength of relationship. ROE, ROA, EPS, MVA, and EVA™ showed weak and negligible relationships of alternating directions over the years of study. Overall the relationship



between fixed pay with MC and EVA™ was positive and weak, with ROE, ROA, EPS and MVA showing a positive negligible relationship with fixed pay.

Of the total 36 results observed, 50% were negligible, 42% weak and 8% moderate relationships in their strength of correlation with fixed pay. Only 2 of the 36 results was significant, no overall significant relationships were established for fixed pay.

### Sub-question 1.2

*Is there a significant relationship between executive variable pay and the financial performance of ASX companies over the six-year research period and during each individual year of study?*

Table 26 lists the results of the relationship between variable pay and the financial performance measures for the 5-year period between 2012 to 2016 for the ASX. The correlation of each variable with variable pay utilised 30 observations per year, and 150 observations overall.

**Table 26**

*Relationship between Variable Pay and the Financial Performance of the ASX*

		2012	2013	2014	2015	2016	Overall
		VP	VP	VP	VP	VP	VP
MC	<i>r</i>	0.1395	0.4937	0.0857	0.5616	-0.0705	0.2308
	<i>p</i>	0.4622	0.0056	0.6527	0.0012	0.7111	0.0045
ROE	<i>r</i>	0.1991	0.0621	-0.0167	0.3447	0.3673	0.1930
	<i>p</i>	0.2915	0.7445	0.9303	0.0621	0.0459	0.0179
ROA	<i>r</i>	0.1635	0.1386	-0.0670	0.3195	0.3571	0.1570
	<i>p</i>	0.3879	0.4651	0.7252	0.0852	0.0527	0.0551
EPS	<i>r</i>	0.0745	0.2619	-0.1384	0.4851	0.5258	0.2240
	<i>p</i>	0.6955	0.1621	0.4658	0.0066	0.0028	0.0059
MVA	<i>r</i>	-0.1177	0.3562	0.0906	0.1542	0.0501	0.0921
	<i>p</i>	0.5357	0.0534	0.6342	0.4159	0.7928	0.2625
EVA	<i>r</i>	0.0532	0.3055	-0.0087	0.4288	0.2690	0.2368
	<i>p</i>	0.7802	0.1007	0.9637	0.0181	0.1507	0.0035

Source: Own research

The relationships between variable pay and the independent variables alternated in both strength and direction over the period. MC showed two years of significant relationships with variable pay, a positive moderate relationship in 2013 and a strong positive relationship in 2015. In 2015 and 2016 ROE had a positive moderate relationship with fixed pay that was significant in 2016. ROA expressed no significant relationships with

variable pay during the study, fluctuating between an inverse weak relationship in 2014 to positive moderate relationships in both 2015 and 2016. The strength of the relationship between EPS and variable pay consistently improved from a positive negligible relationship in 2012 to a positive strong relationship in 2016, albeit an inverse weak relationship was recorded in 2014. Overall EPS established a significant positive weak relationship with variable pay.

Overall MVA held the weakest relationship with variable pay, concluding in a positive weak relationship for the period of study, a positive moderate relationship was however recognised in 2013. EVA™ experienced volatility in its relationship with variable pay, alternating in relationship strength and direction from positive negligible in 2012 to positive moderate in 2013 back to inverse negligible in 2014 and back again to a significant positive moderate relationship in 2015. EVA™ resulted in an overall significant positive weak relationship for the period.

Of the total 36 results observed, 30% were negligible, 39% weak, 25% moderate and 6% strong relationships in their strength of correlation with variable pay. 10 of the 36 results between variable pay and organisational financial performance were significant, overall MC, ROE, EPS and EVA™ had a significant weak positive relationship with variable pay.

### **Sub-question 1.3**

*Is there a significant relationship between total executive pay and the financial performance of ASX companies over the six-year research period and during each individual year of study?*

A number of significant relationships are dominant between total pay and the financial performance variables of the organisations as expressed in Table 27 below. MC, ROE, ROA, EPS and EVA™ were all significantly correlated with a positive weak relationship with total pay in the overall results for the period of study. The only finding not to be found significant was the positive negligible relationship between MVA and total pay.

**Table 27***Relationship between total pay and the financial performance of the ASX*

		2012	2013	2014	2015	2016	Overall
		TP	TP	TP	TP	TP	TP
MC	<i>r</i>	-0.0080	0.4012	0.0296	0.4118	0.0332	0.1696
	<i>p</i>	0.9665	0.0280	0.8766	0.0238	0.8620	0.0380
ROE	<i>r</i>	0.2105	0.0681	0.0438	0.3571	0.5195	0.2404
	<i>p</i>	0.2642	0.7207	0.8181	0.0527	0.0033	0.0030
ROA	<i>r</i>	0.1831	0.0641	0.0774	0.2725	0.5088	0.1917
	<i>p</i>	0.3328	0.7365	0.6842	0.1451	0.0041	0.0188
EPS	<i>r</i>	0.1061	0.3574	-0.1905	0.5071	0.5585	0.2693
	<i>p</i>	0.5767	0.0525	0.3133	0.0042	0.0013	0.0009
MVA	<i>r</i>	-0.1658	0.2830	0.0668	0.2796	-0.0443	0.0430
	<i>p</i>	0.3814	0.1297	0.7260	0.1345	0.8163	0.6014
EVA	<i>r</i>	-0.0494	0.3164	0.0481	0.6053	0.3869	0.2547
	<i>p</i>	0.7955	0.0885	0.8009	0.0004	0.0347	0.0017

Source: Own research

In 2013 MC, EPS and EVA™ developed positive moderate relationships with total pay, but only the relationship between MC and total pay was deemed significantly correlated, this significant positive moderate relationship was further present in 2015. EPS was significantly correlated with total pay with a positive strong relationship in 2015 and 2016. With ROE and ROA significantly correlated with total pay through the presence of a positive strong relationship in 2016. EVA™ was significantly related to total pay in both 2015 and 2016, with a positive strong relationship and a positive moderate relationship in each year respectively.

Of the total 36 results observed, 33% were negligible, 36% weak, 17% moderate and 14% strong relationships in their strength of correlation with total pay. 13 of the 36 results were significant with a *p*-value < 0.05.

### 5.5.3 Results from research question 2

#### **Research question 2**

*Is there evidence of a significant relationship present between executive pay and the financial performance of JSE companies over the six-year research period and during each individual year of study?*

Research question 2 is further broken down into three sub-question to determine the relationship between each dependant variable and the independent variables of financial performance.

#### **Sub-question 2.1**

*Is there a significant relationship between executive fixed pay and the financial performance of JSE companies over the six-year research period and during each individual year of study?*

Table 28 tabulates the results of the findings for the relationship between fixed pay and the financial performance measures between 2012 to 2016 for the JSE. Each year utilised 30 observations, with each overall results based upon a total of 150 observations to determine the overall relationship between the variables over the 5-year period.

**Table 28**

*Relationship between fixed pay and the financial performance of the JSE*

		<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>Overall</u>
		FP	FP	FP	FP	FP	FP
MC	<i>r</i>	0.1141	0.2396	0.0118	-0.2835	-0.3335	-0.0533
	<i>p</i>	0.5482	0.2022	0.9507	0.1290	0.0717	0.5173
ROE	<i>r</i>	0.1339	-0.1746	0.1235	-0.0599	0.0472	-0.0400
	<i>p</i>	0.4804	0.3560	0.5157	0.7534	0.8045	0.6274
ROA	<i>r</i>	0.1853	0.0136	0.0523	-0.0841	0.0872	-0.0277
	<i>p</i>	0.3269	0.9433	0.7838	0.6586	0.6467	0.7363
EPS	<i>r</i>	0.2392	0.1818	0.1426	0.0029	-0.0494	0.0392
	<i>p</i>	0.2031	0.3364	0.4522	0.9879	0.7955	0.6342
MVA	<i>r</i>	-0.1048	0.0025	0.0598	-0.2697	-0.3511	-0.1492
	<i>p</i>	0.5816	0.9898	0.7534	0.1496	0.0571	0.0683
EVA™	<i>r</i>	-0.0358	0.0870	0.3117	-0.3954	0.1168	0.0522
	<i>p</i>	0.8510	0.6476	0.0936	0.0306	0.5387	0.5258

Source: Own research

Of the 36 results reported, 50% held negligible, 39% weak and 11% moderate relationships in their strength of correlation with fixed pay. Only 1 of the 36 results was significantly correlated. This significant relationship present was the negative moderate relationship between EVA™ and fixed pay in 2015 of -0.3954 suggesting an inversely proportional relationship between FP and EVA™ in 2015.

The overall negative relationship between MC, ROE and ROA and the positive relationship between EPS and EVA and FP are negligible in strength. An overall inverse weak relationship exists between FP and MVA.

### Sub-question 2.2

*Is there a significant relationship between executive variable pay and the financial performance of JSE companies over the six-year research period and during each individual year of study?*

Table 29 tabulates the results of the findings of the relationship between variable pay and the financial performance measures between 2012 to 2016 for the JSE. The correlation results are based on 30 observations per year for the five-year period, with each overall result utilising 150 observations per independent variable.

**Table 29**

*Relationship between Variable Pay and the Financial Performance of the JSE*

		<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>Overall</u>
		VP	VP	VP	VP	VP	VP
MC	<i>r</i>	-0.0519	0.1440	-0.0229	0.3291	0.2209	0.1025
	<i>p</i>	0.7855	0.4479	0.9043	0.0758	0.2407	0.2119
ROE	<i>r</i>	0.1353	-0.0779	-0.0728	0.3335	0.0855	0.1139
	<i>p</i>	0.4758	0.6825	0.7023	0.0717	0.6532	0.1652
ROA	<i>r</i>	0.0082	0.0333	-0.1449	0.4392	-0.0840	0.1398
	<i>p</i>	0.9656	0.8615	0.4449	0.0152	0.6591	0.0879
EPS	<i>r</i>	0.1120	0.0158	0.0701	0.5589	0.2909	0.2036
	<i>p</i>	0.5559	0.9340	0.7128	0.0013	0.1189	0.0124
MVA	<i>r</i>	0.0082	0.0754	-0.0394	0.0378	0.0922	0.0007
	<i>p</i>	0.9656	0.6920	0.8363	0.8427	0.6280	0.9934
EVA	<i>r</i>	-0.1026	0.0579	-0.1538	0.2018	0.2797	0.0459
	<i>p</i>	0.5895	0.7614	0.4171	0.2849	0.1344	0.5770

Source: Own research

Of the years observed, 2015 showed the strongest relationships between the variables. A positive moderate relationship between MC, ROE and ROA and variable pay was observed, with EPS indicating a positive strong relationship with variable pay.

The results established three significant relationships between the variables, the first in 2015 was the positive moderate relationship between ROA and variable pay, the second in 2015 was the positive strong relationship between EPS and variable pay and finally, overall a weak positive relationship was established between EPS and variable pay. In total 36 results were observed, resulting in 50% negligible, 39% weak, 8% moderate and 3% strong relationships in their correlation strength with variable pay.

### Sub-question 2.3

*Is there a significant relationship between total executive pay and the financial performance of JSE companies over the six-year research period and during each individual year of study?*

Table 30 contains the results of the findings of the relationship between total pay and the financial performance measures for the 5-year period between 2012 to 2016 for the JSE. The results are based on the five yearly correlations of 30 observations per variable per year, and 150 observations per variable overall for the period.

**Table 30**

*Relationship between Total Pay and the Financial Performance of the JSE*

		<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>Overall</u>
		TP	TP	TP	TP	TP	TP
MC	<i>r</i>	0.1177	0.2623	0.1097	0.1457	0.1043	0.1457
	<i>p</i>	0.5357	0.1614	0.5640	0.4423	0.5832	0.0752
ROE	<i>r</i>	0.1273	-0.1595	-0.0238	0.1333	0.0532	0.0670
	<i>p</i>	0.5027	0.3998	0.9006	0.4827	0.7802	0.4152
ROA	<i>r</i>	0.0229	0.1019	-0.0870	0.2200	-0.0661	0.1061
	<i>p</i>	0.9043	0.5921	0.6476	0.2427	0.7287	0.1963
EPS	<i>r</i>	0.2004	0.0536	0.1751	0.3046	0.2552	0.1918
	<i>p</i>	0.2882	0.7784	0.3548	0.1018	0.1735	0.0187
MVA	<i>r</i>	-0.1052	0.2107	0.0412	-0.1546	-0.1119	-0.0574
	<i>p</i>	0.5800	0.2638	0.8290	0.4146	0.5560	0.4856
EVA	<i>r</i>	-0.1564	0.1386	-0.0185	-0.0229	0.2970	0.0485
	<i>p</i>	0.4092	0.4651	0.9228	0.9043	0.1110	0.5559

Source: Own research

EPS showed an overall significant relationship of weak strength with total pay. MC held a positive weak relationship with total pay over the period of study, with ROE, ROA, MVA and EVA™ oscillated between both positive and negative negligible and weak relationship with total pay during the 5-year period. EPS established a positive moderate relationship with total pay in 2015, although the correlation was found to not be significant.

Of the total 36 results observed, 33% were negligible, 64% weak and 3% moderate relationships in their strength of correlation with variable pay. Only 1 of the 36 results was significant.

## **5.6 Results from research question 3**

### ***Research question 3***

*What significant effects do the financial performance measures of company performance have on the variables of CEO remuneration and how does it differ between Australian and South African publicly listed companies over the research period?*

#### **5.6.1 Introduction for research question 3**

Research question three sought to establish the effect the independent variables of the organisational financial performance have on CEO remuneration. Each of the three dependant variables (fixed pay, variable pay and total pay) of CEO remuneration were individually compared to each of the six financial performance measures (MC, ROE, ROA, EPS, MVA and EVA™) to allow for a comparison of the individual effects between Australia and South Africa.

The model fit statistic of R-Squared was utilised to determine the total effect that the independent variables in the model had on the variation of the dependant variable analysed.

The Hausman test for random effects was used to differentiate between the selection of the fixed effects model and random effects model in panel regression. The results presented in Tables 32, 35 and 38 confirm that for the test of each dependant variable against the independent variables of financial performance measures the results were not significant with a  $p > 0.05$ . This finding implies that the use of the panel regression with the random effect model is an appropriate choice for this data. The Hausman test confirmed the use of random effects model, and therefore excluded the need for dummy variables in the panel data model.

The panel regression model used took note of the following conditions. The Nerlove method of estimation was used to estimate the variance components and their effect on the dependant variable, this method was selected to overcome the problem of negative variance for cross section estimates. It is relevant to note that that the intercept for all the models was zero, this was due to the use of a standardised dependant variable, as seen in Appendix B - D,



### 5.6.2 Panel data regression for fixed pay on the ASX and JSE

The model fit statistics in Table 31 displays the R-Squared ( $R^2$ ) value for each sample population. The  $R^2$  of 0.0664 for the ASX explains 6.64% of the variation in the dependant variable of study fixed pay due to the independent variables in the model. The  $R^2$  of 0.0815 for the JSE explains that the 8.15% variation in fixed pay is explained by the independent variables in the model. A greater variation in fixed pay of JSE CEOs can be explained by the independent variables than can the variation in fixed pay for ASX CEOs. The remaining variation not accounted for by the  $R^2$  result is due to external factors which are not included in the model.

**Table 31**

*Model fit statistics for Fixed Pay for the ASX and JSE*

	Fit Statistics	
	ASX	JSE
SSE	131.756	108.2404
MSE	0.92	0.76
R-Square	0.0664	0.0815
DFE	143	143
Root MSE	0.96	0.87

Source: Own research

Table 32 below shows the outcome of the Huasman test for random effects for the panel regression analysis for fixed pay between 2012 and 2016 for both the ASX and JSE. The level of significance for the ASX at 0.9165 and for the JSE at 0.9676 are above the 0.05 significance level, indicating the acceptance of the random effects model.

**Table 32**

*Hausman Test for Fixed Pay for the ASX and JSE*

	Hausman Test for Random Effects	
	ASX	JSE
DF	6	6
m Value	2.03	1.37
Pr > m	0.9165	0.9676

Source: Own research

**Table 33***Parameter Estimate Data for Fixed Pay for the ASX and JSE*

Parameter Estimates									
Variable	DF	Estimate		Standard Error		t Value		Pr >  t	
		ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE
Intercept	1	0	0	0.1020	0.1283	0	0	1.0000	1.0000
MC	1	0.1275	-0.1961	0.0884	0.0806	1.4400	-2.4300	0.1514	0.0161
ROE	1	-0.1451	0.0107	0.2095	0.1017	-0.6900	0.1000	0.4899	0.9167
ROA	1	0.0920	0.0069	0.2364	0.1325	0.3900	0.0500	0.6977	0.9587
EPS	1	0.0530	0.1248	0.1495	0.1097	0.3500	1.1400	0.7236	0.2572
MVA	1	0.0435	-0.1066	0.0852	0.0767	0.5100	-1.3900	0.6103	0.1667
EVA	1	0.2137	0.0833	0.0850	0.0871	2.5200	0.9600	0.0130	0.3404

Source: Own research

The estimates column of the Table 33 illustrates the estimate variances explained as the unit change in the dependent variable fixed pay that can be explained by each of the six independent variables. The level of significance of each independent variable is found under the column headed Pr > |t|.

Two significant relationships were present in the results. A significant inverse relationship exists between fixed pay and MC, a -0.1961 unit variance in fixed pay can be accounted for by the significant relationship between MC and fixed pay for the JSE. For the ASX a significant relationship exists between EVA™ and fixed pay, indicating a 0.2137-unit change in fixed pay can be attributed to EVA™ over the period. The remaining estimates for both the ASX and JSE were found to not be significant with a p-value > 0.05.

The direction of the relationship for MC and MVA with fixed pay is positive for the ASX but inverse for the JSE, and inverse for ASX and positive for the JSE for ROE.

### 5.6.3 Panel data regression for variable pay on the ASX and JSE

**Table 34**

*Model Fit Statistics for Variable Pay for the ASX and JSE*

	Fit Statistics	
	ASX	JSE
SSE	123.462	132.9682
MSE	0.86	0.93
R-Square	0.1125	0.0500
DFE	143	143
Root MSE	0.93	0.96

Source: Own research

The R-Squared ( $R^2$ ) value for both sample population is listed in Table 34 above. The  $R^2$  of 0.1125 for the ASX explains that a 11.25% variation in variable pay is due to the independent variables in the model. The  $R^2$  of 0.0500 for the JSE explains only a 5% variation in variable pay explained by the independent variables in the model. The effect of the independent financial performance variables on the variation in variable pay is over twice as strong for ASX CEOs in comparison to the findings for JSE CEOs. The remaining variation of 88.5% for the ASX and 95% for the JSE not accounted for by the R-Squared result is due to external factors not included in the model.

**Table 35**

*Hausman Test for Variable Pay for the ASX and JSE*

	Hausman Test for Random Effects	
	ASX	JSE
DF	6	6
m Value	3.32	0.90
Pr > m	0.7679	0.989

Source: Own research

The results of the Hausman test for random effects for the panel regression analysis for variable pay between 2012 and 2016 for both the ASX and JSE can be seen in Table 35 above. The level of significance for the ASX at 0.7679 and for the JSE at 0.9890 are above the 0.05, indicating the acceptance of the random effects model.

**Table 36***Parameter Estimate Data for Variable Pay for the ASX and JSE*

Parameter Estimates									
Variable	DF	Estimate		Standard Error		t Value		Pr >  t	
		ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE
Intercept	1	0	0	0.1082	0.0999	0	0	1.0000	1.0000
MC	1	0.2517	0.0787	0.0878	0.0871	2.8700	0.9000	0.0048	0.3679
ROE	1	0.2222	0.0578	0.2042	0.1113	1.0900	0.5200	0.2783	0.6046
ROA	1	-0.1787	-0.0556	0.2310	0.1438	-0.7700	-0.3900	0.4405	0.6996
EPS	1	0.0980	0.2003	0.1469	0.1196	0.6700	1.6700	0.5057	0.0963
MVA	1	0.0394	0.0086	0.0834	0.0839	0.4700	0.1000	0.6370	0.9189
EVA	1	0.1595	-0.2039	0.0829	0.0935	1.9300	-2.1800	0.0562	0.0308

Source: Own research

Table 36 illustrates the estimate variances explained as the unit change in the variable pay that can be explained by each of the six independent variables. Two significant relationships were present in the results for variable pay and the financial performance measures. The relationship between variable pay and MC was identified as significant with a p-value of 0.0048, explaining a 0.2517 unit variance in variable pay for the ASX. For the JSE an inverse significant relationship exists between EVA™ and variable pay, indicating a -0.2039 unit change in variable pay attributed to EVA™ over the period. Albeit with a p-value of 0.0562 marginally above the 0.05 level of significance, the relationship between EVA™ and variable pay for the ASX must be noted, indicating a change in direction of the significant relationship between EVA™ and variable pay.

The remaining estimates for both the ASX and JSE were found not to be significant with a p-value > 0.05. The direction of the relationship for MC, ROE, EPS and MVA with variable pay was positive for both the JSE and ASX, with an inverse relationship established between ROA and variable pay for both the ASX and JSE.

#### 5.6.4 Panel data regression for total pay on the ASX and JSE

Table 37 indicated an  $R^2$  of 0.1221 for the ASX explaining that 12.21% of the variation in the total pay is explained by the six independent variables in the model. The  $R^2$  of 0.0507 for the JSE explains that a 5.07% variation in total pay is due to the influences of the independent variables in the model. The variation in total pay of ASX CEOs can be greater explained by the six independent variables than the variation can be for JSE total pay. The remaining variation of 87.79% for the ASX and 94.93% for the JSE not accounted for by the R-Squared result is due to external factors not included in the model.

**Table 37**

*Model Fit Statistics for Total Pay for the ASX and JSE*

Fit Statistics		
	ASX	JSE
SSE	123.484	127.0528
MSE	0.86	0.89
R-Square	0.1221	0.0507
DFE	143	143
Root MSE	0.93	0.94

Source: Own research

The results of the Hausman test for random effects for the panel regression analysis for variable pay between 2012 and 2016 for both the ASX and JSE can be seen in Table 38 below. The level of significance for the ASX at 0.8269 and for the JSE at 0.9939 are above the p value of 0.05, indicating the acceptance of the random effects model.

**Table 38**

*Hausman Test for Total Pay for the ASX and JSE*

Hausman Test for Random Effects		
	ASX	JSE
DF	6	6
m Value	2.85	0.73
Pr > m	0.8269	0.9939

Source: Own research

Table 39 below tabulates the parameter estimates for the findings between total pay and the six independent variables of organisational financial performance. Two significant relationships have been identified from the results. The first significant relationship with a p - 0.0025 is between total pay and EPS, accounting for a 0.2541 unit variance in total pay for the ASX. The second relationship to be deemed significant is between total pay and EPS for the JSE, a 0.2277 unit variance in total pay can be attributed to this relationship.

**Table 39**

*Parameter Estimate Data for Total Pay for the ASX and JSE*

Variable	DF	Parameter Estimates							
		Estimate		Standard Error		t Value		Pr >  t	
		ASX	JSE	ASX	JSE	ASX	JSE	ASX	JSE
Intercept	1	0	0	0.1023	0.1081	0	0	1.0000	1.0000
MC	1	0.1330	-0.0139	0.0865	0.0859	1.5400	-0.1600	0.1263	0.8715
ROE	1	0.2266	0.0557	0.2034	0.1093	1.1100	0.5100	0.2672	0.6113
ROA	1	-0.1547	-0.0522	0.2297	0.1416	-0.6700	-0.3700	0.5018	0.7129
EPS	1	0.0786	0.2277	0.1456	0.1176	0.5400	1.9400	0.5903	0.0548
MVA	1	0.0470	-0.0368	0.0828	0.0824	0.5700	-0.4500	0.5709	0.6561
EVA™	1	0.2541	-0.1370	0.0825	0.0924	3.0800	-1.4800	0.0025	0.1405

Source: Own research

For both the ASX and JSE, ROA was found to be inversely related to total pay, and ROE was positively related to total pay during the period of study. The findings established a positive direction for MC, EPS, MVA and EVA™ for the ASX, yet an inverse relationship was identified for these same variables over the period of study for the JSE.

### 5.6.5 Summary of research results

Chapter 5 presents the results generated from the statistical analysis methodology outlined in chapter 4. The descriptive statistics were used to compare the minimum, maximum, median, mean and standard deviation of each of the three dependant variables and six independent variables for the ASX and JSE sample populations used in the study, identifying any trends, patterns and similarities between the results. Various statistical techniques of correlation analysis and panel data regression were applied to the descriptive statistics results to establish the presence of significant relationships between the variables and to answer the three research questions. The following chapter will discuss the results reported in chapter 5 to answer the three research questions.

## **Chapter 6: Discussion of Results**

### **6.1 Introduction to results discussion**

This chapter presents an in-depth discussion of the results set out in Chapter 5 above. The objective of this chapter is to answer the three research questions formulated for this study following the extensive literature review discussed in chapter 2. This chapter seeks to highlight the similarities and differences of the results of this study with those expressed in literature, with the aim of contributing to the field of research on CEO pay-performance relationships.

### **6.2 Variables used in the study**

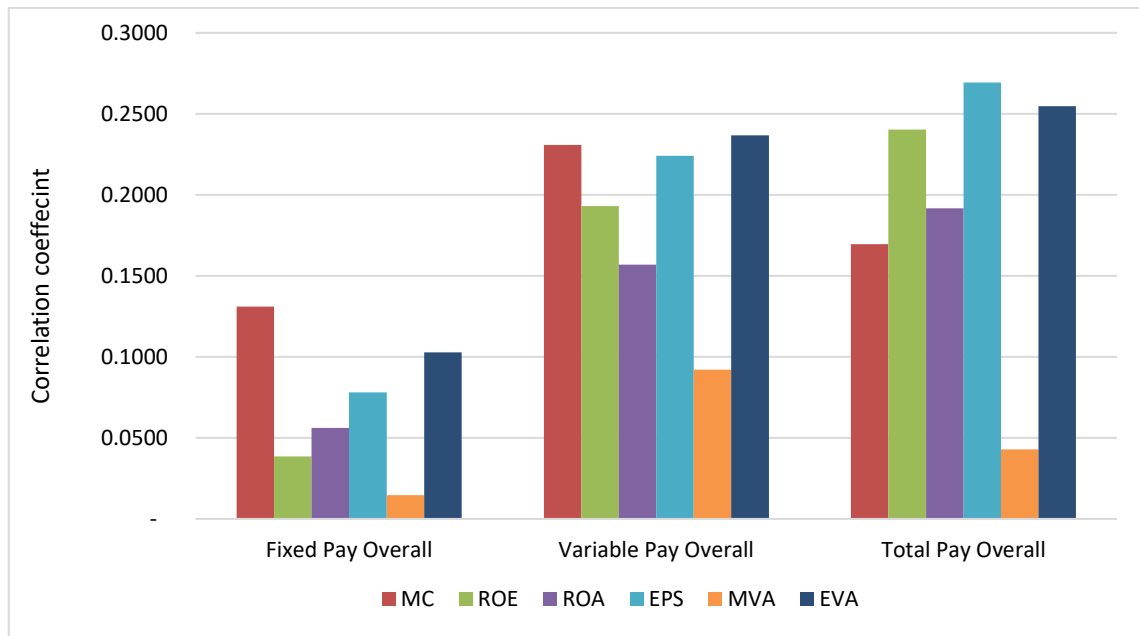
The dependant variable used in the study was CEO remuneration, incorporating fixed pay, variable pay and total pay as the sum of fixed and variable pay (21st Century Pay Solutions Group, 2010).

The independent variables used for this study adopted both accounting and market-based measures of financial performance. The accounting-based measures of financial performance included ROE, ROA, EPS, with the market-based measures of financial performance incorporating MC, MVA and EVA.

### 6.3 Discussion research question 1

Figure 14 below graphically depicts the overall correlation results for the period of study for each measure of CEO remuneration and the independent variables of financial performance for the ASX. The description of the relationship strength of the correlation coefficient was interpreted using the explanation of Kotrlik et al., (2011) found in Table 24 noting that the relationship strength for ASX CEO remuneration and organisational financial performance are all positive and either negligible to weak in relationship strength. The relationship between the components of CEO remuneration and each measure of organisation financial performance are individually discussed in further detail.

Figure 14. ASX Question 1 overall correlation findings



Source: Own research

#### 6.3.1 Market capitalisation

Overall the correlation between MC and the three variables of CEO remuneration were found to each show a positive weak relationship, with the relationship between both variable pay and total pay to be significant with MC. These results are consistent with the findings of Ozkan (2011) who established that larger firms pay higher compensation packages, Cybinski and Windsor (2013) who found that firm size is influential in Australian CEO remuneration, and Conyon (2014) who found that positive correlations exist between executive compensation and firm size.



### **6.3.2 Return on equity**

Although a significant positive moderate relationship with fixed pay was present, the overall relationship between fixed pay and ROE for the ASX was negligible. Variable and total pay were both found to have a significant positive weak relationship with ROE for the period of study, finding against the results of Theku (2015) who established no significant findings between CEO remuneration and ROE.

### **6.3.3 Return on assets**

No significant relationship was present between ROA and fixed pay either yearly or overall for the period, consistent with the findings of Doucouliagos et al. (2007) in their study of Australian banks. Variable pay and ROA presented no significant relationships throughout the study, thus finding against the results of Doucouliagos et al. (2007), who determined that there was a significant link between variable pay and ROA. Notwithstanding these findings, a significant positive weak relationship resulted from the correlation between ROA and total pay for the ASX, confirming the findings of Cain & McKeon (2016), who found ROE to have a significant positive relationship with total compensation.

### **6.3.4 Earnings per share**

The correlation between EPS and fixed pay was found to not be significant or stronger than a weak relationship over the period, contradictory to the findings of the relationship between EPS and variable and total pay. Variable pay established increasing relationship strength over the period, concluding in a significant positive weak relationship. A significant positive weak relationship was found between EPS and total pay for the period, supporting the results of the study by Doucouliagos et al. (2007). Bennett et al. (2017) established a significant link between EPS and CEO remuneration due to the manipulation of EPS targets by managers to maximise personal financial gain.

### **6.3.5 Market value added**

No significant relationships were established yearly or overall between either of the three variables of CEO compensation when correlated with MVA. Only one of the 18 correlations reported experienced a correlation stronger than 0.300 or a moderate relationship. The findings of a lack of a significant relationship between the variables of CEO remuneration contradict with the research by Fatemi et al. (2003) who established that MVA was a significant determinant of CEO remuneration.

### **6.3.6 Economic value added™**

The yearly relationships between fixed pay and EVA™ were negligible to weak alternating between direct and inverse relationships, resulting in a positive weak relationship overall. Significant positive weak relationships were identified between EVA™ and variable pay, and EVA™ and total pay confirming the findings of Fatemi et al. (2003), who stated that managers were incentivised for increases in EVA™.

## **6.4 Summary of findings for research question 1**

Research question 1 asked: *“Is a significant relationship present between executive pay and the financial performance of ASX companies over the six-year research period and during each individual year of study?”*

Research question 1 sought to identify if any significant relationships are present for variables of ASX CEO remuneration, namely fixed pay, variable pay, total pay and the financial performance measure of company performance over the period of study. The individual relationships between each pay variable and each independent variable were discussed in section 6.3 above.

### **6.4.1 Answering sub-question 1.1**

**Sub-question 1.1:** *Is there a significant relationship between executive fixed pay and the financial performance of ASX companies over the six-year research period and during each individual year of study?*

No significant relationships were present between fixed pay and each of the six financial performance measures of organisational performance for the overall period of study. The relationship between MC and fixed pay was significant in 2015 and ROE was significant with fixed pay in 2012.

### **6.4.2 Answering sub-question 1.2**

**Sub-question 1.2:** *Is there a significant relationship between executive variable pay and the financial performance of ASX companies over the six-year research period and during each individual year of study?*

Multiple significant relationships were established between variable pay and MC, ROE, ROA, EPS and EVA™, all resulting in overall significant positive weak relationships. The significant relationships with variable pay, identified for each year of the study were MC in 2013 and 2015, ROE in 2016, EPS in 2015 and 2016, and finally EVA™ in 2015.

#### **6.4.3 Answering sub-question 1.3**

**Sub-question 1.3:** *Is there a significant relationship between total executive pay and the financial performance of ASX companies over the six-year research period and during each individual year of study?*

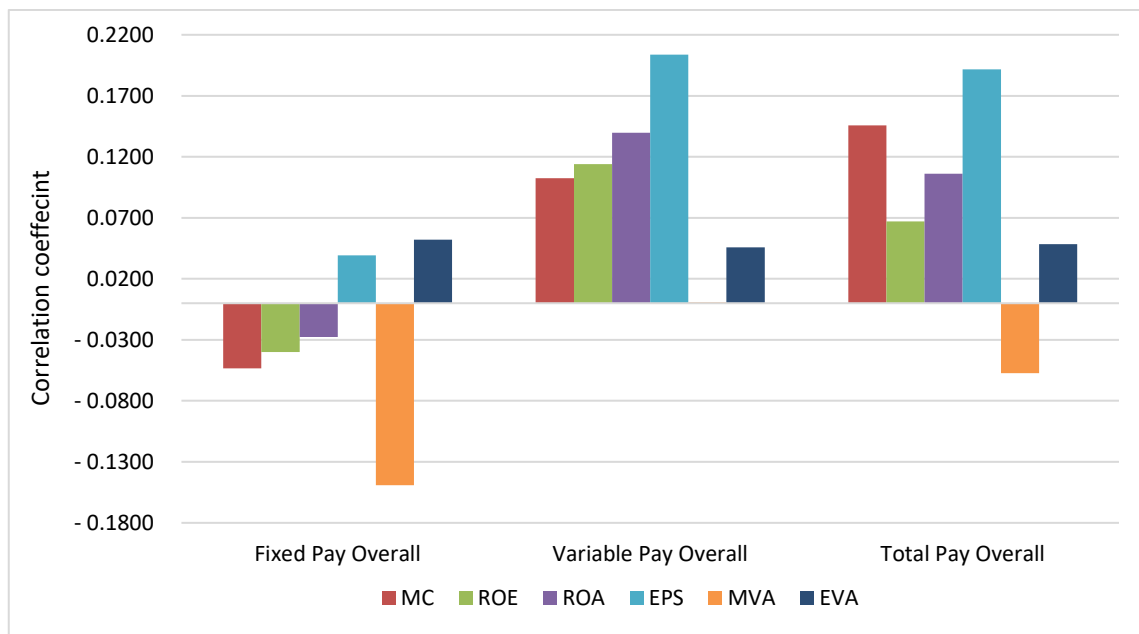
Only MVA was found not to be significantly correlated with total pay for the overall period of study. Whereas each of the five other independent variables of financial performance expressed significant positive weak relationships with total pay, specifically MC, ROE, ROA, EPS and EVA™.

## 6.5 Discussion research question 2

Research question 2 focussed on analysing the relationship between the components of CEO remuneration against the company financial performance measures over the period of study for the JSE. Spearman's correlation coefficient was used to test for correlations between the variables. Each dependant variable was individually compared to the six financial performance measures. The correlations were reported for both the individual years of the study and as an overall finding for the period of study.

Figure 15 below graphically depicts the overall correlation results for the period of study for each measure of CEO remuneration. Using the description of the relationship strength of the correlation coefficient by Kotrlik et al., (2011) found in Table 24, it must be noted that overall relationship strength for JSE CEO remuneration and organisational financial performance are either negligible or weak at most. The relationship between the components of CEO remuneration and each measure of company financial performance will be individually discussed in further detail.

Figure 15. JSE Question 1 overall correlation findings



Source: Own research

### 6.5.1 Market capitalisation

The relationship between MC and FP was inversely negligible overall, moving between a positive weak relationship in 2012 to inverse moderate relationship in 2016. A similar oscillating pattern of correlation strength and direction was found in the relationship

between MC and variable pay for the JSE, resulting in an inverse negligible relationship. The correlation strength of MC and total pay remained positive and weak over the period of study. Concluding no significant relationships were found between MC and CEO remuneration over the period, finding against the results established by Bussin and Modau (2015), and Theku (2015) who established the presence of a significant strong relationship. Gigliotti (2013) terms the relationship between company size and executive compensation as the “size premium” (p. 899).

### **6.5.2 Return on equity**

ROE and fixed pay concluded in an overall inverse relationship, a finding supported by Bussin and Modau (2015). The strongest relationship between ROE and CEO remuneration was in 2015 with variable pay. Although not significant, a positive moderate relationship was established, with all other relationships with fixed and variable pay being weak to negligible in strength and varying in direction. The relationship between ROE and total pay was found to be positive but negligible overall for the period of study, although moving between a positive and negative direction of relationship during the five years. de Wet (2012) reported on the existence of a positive relationship between total CEO remuneration and ROE, however, van Blerk (2013) found no correlation between ROE and executive remuneration in South African and American banks.

### **6.5.3 Return on assets**

The correlation between ROA and both fixed and total pay concluded in a negligible inverse and weak positive relationship respectively overall. Park and Kruse (2014) established ROA to be substantially higher in innovative companies who offered group incentives in the form of short-term incentive bonus, this study for the JSE finds against this conclusion. A positive moderate significant relationship did exist between ROA and variable pay in 2015, however this relationship appears to be unordinary as the other four years and overall result of the relationship are weak at best and show no level of significance. Overall no significant relationships existed between ROA and CEO remuneration during the period of study, this result is supported by the findings of Core et al., (1999).

### **6.5.4 Earnings per share**

EPS maintained a weak and negligible relationships with fixed pay over the period, contradicting the findings of a moderate to strong relationship between fixed pay and MC

by Bussin and Modau (2015). The strongest relationship for any observation of CEO remuneration and financial performance measure for the JSE presented between EPS and variable pay in 2015 as a significant positive strong relationship. Overall a positive weak significant relationship between EPS and variable pay was established. Total pay was found to have a significant positive weak relationship with EPS, as supported by the findings of Ozkan (2011), who found a positive relationship between CEO remuneration and shareholder returns. The overall significant relationship between EPS and variable pay was discussed by Cheng et al. (2015), noting that the link between EPS and bonus pay was due to executives initiating current-year share repurchases to increase current-year EPS as a means of increasing short-term bonuses based on EPS performance.

#### **6.5.5 Market value added**

Fixed pay and MVA resulted in an overall inverse weak relationship for the period of study, confirming the findings of (Bussin & Modau, 2015), although the preceding years presented weak and negligible relationships, a moderate negative relationship with fixed pay in 2016 was established. Variable pay maintained a consistent negligible relationship with MVA over the period of study, only changing to an inverse relationship in 2014. The findings of a weak inverse relationship between MVA and variable pay are supported by Bussin and Modau (2015). MVA and total pay maintained the trend of weak and negligible relationships, ending in a positive negligible relationship overall. The absence of a significant relationship between CEO remuneration and MVA are contrary to the findings of Fatemi et al. (2003) who established a significant link between MVA and CEO compensation.

#### **6.5.6 Economic value added™**

The relationship between EVA™ and fixed pay experienced volatility over the period. Overall, in 2012 and 2013 only a negligible relationship was present, however 2014 presented a positive moderate relationship with fixed pay, shifting to a significant inverse moderate relationship in 2015. The changing of the relationship direction between fixed pay and EVA™ was previously established in Bussin and Modau (2015). The overall relationship between both variable and total pay with EVA™ was positive and negligible in the strength of the relationship, this being consistent with the results of Fatemi et al. (2003).

## **6.6 Summary of findings for research question 2**

Is there evidence of a significant relationship present between executive pay and the financial performance of JSE firms over the six-year research period and during each individual year of study?

Research question 2 sought to identify if any significant relationships are present between the three variables of JSE CEO remuneration, namely fixed pay, variable pay and total pay, and the six independent variables of financial performance measures of company performance over the period of study. The individual relationships between each pay variable and each independent variable were discussed in section 6.5 above. The results for each sub-question are discussed below.

### **6.6.1 Answering sub-question 2.1**

**Sub-question 2.1:** *Is there a significant relationship between executive fixed pay and the financial performance of JSE companies over the six-year research period and during each individual year of study?*

No significant relationships were observed between fixed pay and the six financial performance measures of company performance for the overall period. The only significant relationship was identified between EVA™ and fixed pay in 2015.

### **6.6.2 Answering sub-question 2.2**

**Sub-question 2.2:** *Is there a significant relationship between executive variable pay and the financial performance of JSE companies over the six-year research period and during each individual year of study?*

A significant positive weak relationship presented between EPS and variable pay for the overall period of the study. The identified yearly significant relationships, were a positive moderate significant relationship between ROA and variable pay in 2015 and a significant positive strong relationship between EPS and variable pay in 2015.

### **6.6.3 Answering sub-question 2.3**

**Sub-question 2.3:** *Is there a significant relationship between total executive pay and the financial performance of JSE companies over the six-year research period and during each individual year of study?*

The only significant relationship recognised between total pay and the six financial performance measures of organisational performance was between EPS and total pay. No significant correlations existed in the yearly analysis between any of the variables.

## 6.7 Summary of research questions 1 and 2

**Table 40**

*Summary of the Findings for Research Question 1 and 2*

		<u>Overall</u>		<u>Yearly</u>	
		ASX	JSE	ASX	JSE
Fixed Pay	MC			2015	
	ROE			2012	
	ROA				
	EPS				
	MVA				
	EVA				2015
Variable Pay	MC	Significant		2013	
	ROE	Significant		2015	
	ROA			2016	
	EPS	Significant		2015	2015
	MVA			2016	
	EVA	Significant		2015	
Total Pay	MC	Significant		2013	
	ROE	Significant		2015	
	ROA	Significant		2016	
	EPS	Significant	Significant	2015	
	MVA			2016	
	EVA	Significant		2015	
				2016	

Source: Own research

Table 40 above is used to visually summarise the findings of questions 1 and 2 above. The significant correlations between the three variables of CEO remuneration and the six financial performance measures over the period have been identified under the overall column heading as significant for each sample population. For individual years that were significant the year is listed under the yearly column.



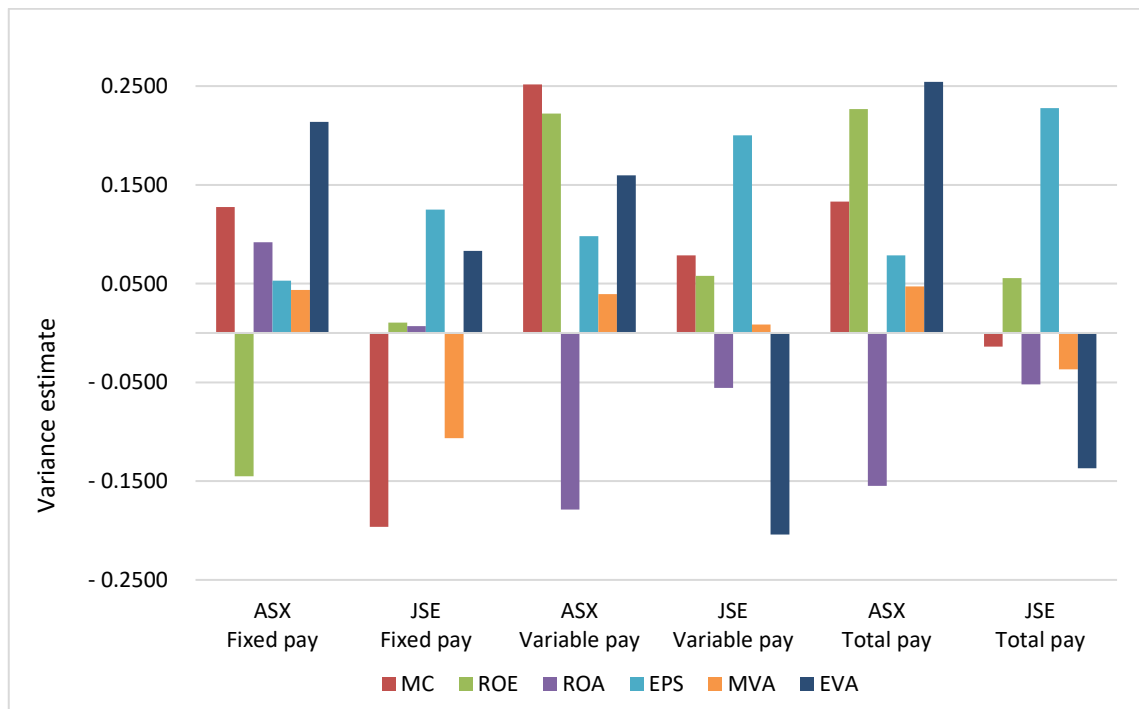
Overall no significant relationships existed between fixed pay and the independent variables, for the ASX, variable pay and total pay established four overall significant relationships each. Overall the JSE established one significant relationship between EPS and total pay. The findings of question 1 and 2 indicate a lack of congruence between the significant correlations established for the ASX and JSE over the period of study, thus establishing that the pay-performance relationships used by remuneration committees to enhance performance are not universally applicable.

### 6.8 Discussion research question 3

*What significant effects do the financial performance measures of company performance have on the variables of CEO remuneration and how does it differ between Australian and South African publicly listed companies over the research period?*

The R-squared values for the six independent panel regression models range from between 5% to 12.21%, accounting for a very low percentage of the variation in the dependant variables that can be attributed to the six independent variables of organisational financial performance. This therefore suggests that CEO remuneration is affected by more than the independent variables selected for this study. This is Supported by Tosi et al. (2000) who found that a substantial portion of the variance in CEO remuneration cannot be accounted for and is largely unexplained, therefore suggesting that more variables are to be included in the dataset of future studies. Gigliotti (2013) studied the relationships between total remuneration inclusive of long-term incentive payments and firm performance for the Milan Stock Exchange, finding that the average variations as denoted by R-squared for ROE as  $R^2$  0.0083 and ROA of  $R^2$  0.007 indicating that very little variance in CEO total remuneration can be attributed to ROE and ROA.

Figure 16. Question 3 variance estimates for the ASX and JSE



Source: Own research

Figure 16 above gives a graphical illustration of the variation estimates for each sample population's unique variation in relation to the dependant variables of CEO remuneration. This variation estimate is explained by each of the six independent variables of company financial performance used in the study. Furthermore, the graph clearly depicts the direction of the variance of the dependent variable.

The panel regression models established six significant relationships between a dependant variable and one of the independent variables with a  $p < 0.05$ . The significant relationships were unique to each set of variables and were not mirrored on both populations, this further highlighting a difference in the pay-performance relationships between Australia and South Africa.

When utilising fixed pay as the dependant variable a significant relationship was established with EVA™ for the ASX, this finding was consistent with Fatemi et al., (2003) who recognised EVA™ as a more superior predictor of variation in executive remuneration than the traditional measure of ROA. The inverse relationship between MC and fixed pay for the JSE was deemed significant at a 5% level. This was in line with the findings of Tosi et al. (2000), where it was found that firm size, as indicated by MC in this study, accounts for 40% of the variance in CEO remuneration, equating to nine times the amount of variance in total CEO pay that can be explained by the strongest correlated performance measure. Ozkan (2011) supports the findings of Tosi et al. (2000) in finding a relationship between firm size and CEO remuneration, with larger companies paying their CEO more in an effort to attract and retain talented CEOs.

The panel regression model for variable pay proved the positive relationship between MC and variable pay to be significant at a 95% confidence interval for the ASX and the inverse relationship between EVA™ and variable pay for the JSE significant with a p value of 0.0308. These findings further confirm those of Fatemi et al., (2003) for EVA™ and Tosi et al. (2000) regarding MC as explained above.

Total pay was proved to be significantly related to EVA™ for the ASX in the panel regression model, indicting EVA™ as a notable independent variable accounting for a 0.2541 unit variance in total pay. For the JSE a significant relationship was established between total pay and EPS, accounting for a 0.2277 unit variance in total pay.

The finding of the panel regression proved contradictory with the findings of Banker et al. (2013) whose results supported a positive association between ROE and fixed pay,

and a negative association between ROE and bonus pay. Although the findings of both a positive association between ROE and fixed pay on JSE and a negative association between ROA and variable pay on ASX are evident, neither of these relationships are significant at a 5% level.

Banker et al. (2013) findings suggested total pay is not significantly associated with past accounting measures, stating that the positive associations with fixed pay is cancelled out by the negative associations with variable pay. The accounting measures used in this study are ROE, ROA and EPS. The findings of the study confirm Banker et al. (2013) findings with no significant relationships between total pay and ROE and ROA, but reject Banker et al. (2013) findings with a significant relationship between EPS and total pay for the JSE being identified. The findings of no significant relationships between total pay and ROE and ROA opposes the findings of Tosi et al. (2000) who found a significant relationship between ROE and total pay to account for a 4.5% variance in total pay, and ROA to account for less than 2% variance in total pay.

Hambrick and Quigley (2013) found 38.5% of ROA results could be attributed to the organisation's executive management teams actions, indicating that a significant relationship should therefore be present if ROA was a key independent variable effecting CEO remuneration. This study's panel regression model utilising ROA as an independent variable proves otherwise with an absence of any significant relationships for both the ASX and JSE being identified.

Of the significant relationships established 50% were with EVA™ as an independent variable, corresponding with the findings of Fatemi et al. (2003) who suggested EVA™ to be an improved predictor of cross-sectional variation in CEO remuneration, and Chari (2009) who recommended EVA™ as a superior metric over the traditional accounting-based measures to be used for evaluating organisational financial performance.

MC a market-based measure of financial performance was party to 33% of the significant results. All three of the significant relationships for the ASX were with market-based measures of financial performance, while the significant relationships for the JSE incorporated two market-based and one traditional accounting-based measure of company financial performance.

### **6.9 Summary of results for question 3**

From the results discussed above for question 3 it is evident that the company financial performance measures of MC, ROE, ROA, EPS, MVA and EVA™ account for only a nominal variance in CEO remuneration during the period of study. This highlights a key finding in that other independent variables not assessed in this model and study are likely to be influential in determining the levels of CEO remuneration.

The findings illustrate a disconnect between the corporate governance requirements of a link between CEO remuneration and company financial performance. The variables for this study were selected following an extensive literature review of both recent and seminal research conducted globally, indicating them to be the most appropriate to determine the CEO pay-performance relationships. The findings of the panel regression model have proved otherwise, indicating one of two scenarios. The first being a shift towards the avoidance of performance related remunerations schemes, or secondly, that greater influential financial performance measures are yet to be comprehensively articulated and explored in literature.

## **Chapter 7: Conclusion**

### **7.1 Introduction**

Chapter 7 reflects on the key findings of the research study in line with the results discussed in Chapter 6 above. This chapter presents the implications and recommendations that these findings may have on the decisions made by board members, remuneration committees and stakeholders.

The primary objective of this research was to develop a deeper understanding of the CEO pay-performance relationship by analysing Australian and South African publicly listed companies. Comparing the results from each sample population to make recommendations to improve the effectiveness of the pay-performance relationship. The limitations of the study have been considered and the recommendations for future research are discussed below.

### **7.2 Principal findings**

The overarching principal finding of the study was the confirmation of the difference in the significant pay-performance relationships between Australian and South African publicly listed companies. The main findings are summarised below.

1. Very few similarities were found to exist between the Australian and South African pay-performance relationships as presented in Table 40. The most notable similarity between the ASX and JSE was the absence of a significant relationship between market value added (MVA) and all three variables of CEO remuneration over the period of study. This similarity extends to the lack of unit variance change in the dependant variables of CEO remuneration that can be attributed to MVA for either of the populations in the panel regression models. MVA is therefore not a significant or effective measure of the CEO pay-performance relationship and it is recommended that MVA not be utilised as a measure for determining CEO compensation.
2. The traditional accounting-based measure of earnings per share (EPS) and total pay was the only overall significant correlation to be established for the JSE. No other significant correlations between either of the three dependant variables of CEO remuneration and the six financial performance measures were proven significant, as all other correlations fell outside of the accepted 5% level of significance. The

findings indicate the absence of a link between the use of the prescribed corporate governance codes, stipulating the need for an identifiable link between CEO remuneration and company financial performance.

3. The analysis of the descriptive statistics for the JSE in comparison to the ASX indicated that although the Australian Dollar had fluctuated in exchange rate with the South African Rand between a 2011 Low of R6.74 per AUD to a high of R11.66 in 2016, the South African pay-performance relationship appears to express higher levels of gearing in CEO incentive design.
4. The correlation analysis of the ASX sample population established multiple significant correlations between the CEO remuneration variables of fixed pay, variable pay and total pay, and the independent variables of financial performance excluding MVA. These results indicate that a greater alignment exists between the wants of the principal and needs of the agent for ASX companies. The behavioural agency theory as discussed by Pepper and Gore (2015) aligns CEO compensation and the interests of shareholders with the performance of the company and agent. The ASX Corporate Governance Code promotes this association requiring the development of a link between CEO remuneration and company performance when developing an optimal contract. This relationship is tested through the application of the “two strike rule”, holding directors accountable for executive salaries and bonuses (ASX Corporate Governance Council, 2014).
5. The R-Squared ( $R^2$ ) result of the panel regression models of question 3 indicates for both Australian and South African CEO remuneration that only a negligible portion of the variance in the dependant variables of CEO remuneration can be attributed to the six financial performance measures utilised in this study, namely MC, ROE, ROA, EPS, MVA and EVA™. Therefore, establishing variables not tested in this research study to have a greater impact on CEO remuneration and the pay-performance relationship. The variables used in this study were the commonly adopted company financial performance measures that did not require a link with long-term incentive bonuses or share options as identified in previous academic literature.
6. The results from question 2 identified the absence of significant relationships between CEO remuneration and company financial performance for JSE publicly listed companies. The corporate governance codes in South Africa, specifically the

Companies Act (Companies Act No. 71 of 2008, 2009) and King III (Institute of Directors South Africa, 2009) have not been successful in enforcing their requirements of the establishment of a positive correlation between CEO remuneration and the company's financial performance. In comparison the findings of question 1 for the ASX indicates multiple significant relationships linking CEO remuneration and the company's financial performance, confirming the adherence of Australian publicly listed companies to the requirements of the corporate governance principles and recommendations as required by the Australian Securities Exchange (ASX Corporate Governance Council, 2014).

### **7.3 Implications for management**

The following were identified as key management implications to be considered for the CEO pay-performance relationship.

1. The establishment of a significant correlation between EPS and total pay for the JSE raises questions as to the authenticity of the EPS results reported by the respective companies. EPS should not be adopted as a financial performance measure in determining CEO remuneration due to its potential manipulation through the repurchasing of shares by the company (Cheng et al., 2015), cut in research and development budgets, or through the increase in abnormal accruals (Bennett et al., 2017). These actions by the CEO and their executive team result in short-term benefits, but in the long-term the company may fall foul to adverse effects on performance, negatively impacting shareholder value creation.
2. The lack of significant relationships between CEO remuneration and the financial performance measures in South African publicly listed companies raises the question of the current negotiating process undertaken by South African CEOs and remuneration committees when agreeing on the terms of the remuneration contract. The establishment of a *quid pro quo* relationships between the CEO and loyalist board members through incentivisation may be the cause of possible biased decision making, rendering the board ineffective at maintaining corporate governance standards (Chatterjee & Pollock, 2017). This questions the diligence and ethical standards to which remuneration committees uphold their role in the setting of optimal contracts.



3. The multiple significant relationships identified for CEO remuneration and the various financial performance measures for Australian publicly listed companies illustrates that alignment between CEO pay and company financial performance is possible. Companies must consider both traditional accounting-based and market-based measures when establishing remuneration contracts for their CEOs and executives, neither measure can be viewed in isolation. The weighting applied to these measures must not be standardised and must evolve overtime with the changes in the specific micro and macro-economic factors faced by the company. This tailored approach was indicated through the fluctuation in strength, significance and direction of relationships in the yearly correlation results between the dependent and independent variables in question 1 and 2 for both Australian and South African publicly listed companies.
  
4. The increase in the globally mobility of CEOs through the shift in demand from an industry specific to general management skill set has added an additional level of complexity to the pay performance relationship (Frydman & Jenter, 2010). Global mobile managers seek out countries and careers to maximise their wealth and limit their risk. This situation poses both an opportunity and threat to organisations who could possible attract talented CEOs obtaining a competitive advantage in their industry or loose talent if their compensation structures are not globally attractive. These contacts may need to be tailored to the needs of a particular type of CEO which the company is trying to attract and retain.

#### **7.4 Limitations of the research**

1. A limitation of the quantitative research methodology adopted for this study was the inability to provide an in-depth understanding of the remuneration negotiating process (Woodhams et al., 2015). The approach used by both the CEO and remuneration committee would need to be researched through an empirical qualitative process to understand the negotiation tactics employed by both parties and the effects of any third parties on the decision-making process (Kostiander & Ikkäheimo, 2012). The current research method could not remove poor and biased decisions made by remuneration board members who were influenced by the CEO to inflate packages, pay bonuses and reduce hurdles, therefore potentially skewing the results.

2. The current research did not take into account the duality of roles for ASX listed companies, who through corporate governance requirements are not restricted but merely discouraged from having a CEO perform the dual role of both CEO and Chairman of the company. This dual role grants the CEO increased influence and the ability to negotiate increased compensation in line with the additional responsibility (Conyon et al., 2011). In comparison JSE CEOs are not permitted to hold a dual role as the company's chairman.
3. The tenure and experience at a CEO level was not considered as a factor of analysis in this study. It is understood that CEO tenure and experience would affect the remuneration packages received. CEOs with longer relationships with a company receive higher total compensation, but on average lower incentive bonuses (Gopalan, Milbourn, Song, & Thakor, 2014). This poses the question of whether an experienced CEO has the ability to influence the remuneration committee and defend themselves against unnecessary risk exposure (Jenter & Kanaan, 2015).
4. A premise of the research study was for a company to qualify for the study the company had to be within the top 30 largest market capitalisation companies on its respective stock exchange. This premise excluded a large number of companies from the population sample given the sample size required. Due to less public scrutiny companies with smaller market capitalisations adopt different pay-performance techniques. The investigation into the differences in the pay-performance relationships of these companies was therefore excluded from the study.

## **7.5 Suggestions for future research**

The current research study had set to contribute to the field of human resource management and remuneration through the development of a deeper understanding of the CEO pay-performance relationships. Building on the methodological limitations of the study discussed in chapter 4, additional limitations have arisen during the current research. Future research is therefore required to address these limitations and further enhance the contributions made to both academia and business.

1. The adoption of a mixed method approach using both a quantitative and qualitative methods to establish a holistic understanding of the pay-performance relationship for listed companies (Saunders & Lewis, 2017). The suggested study would utilise

publicly available secondary data to gather the financial data requirements for the study and then through a qualitative interview process of the respective CEOs and remuneration committees discuss how these results were achieved and agreed upon. The study should be conducted with the sample population and respondents granted anonymity to avoid victimisation and achieve the best possible results to determine the power of influence that CEOs exert over their subordinates and board members (Jenter & Kanaan, 2015).

2. The current study compared the pay-performance relationship between Australian and South African publicly listed companies. As is evident from the results there is limited correlation and similarities between these two countries in their pay-performance relationships. Africa is a culturally diverse continent with scarce literature on the pay-performance relationship specific to African companies and their CEOs. A comparative study between publicly listed companies on the various African stock exchanges will enhance the literature to develop a deeper understanding of these relationships and make a valuable contribution to the fields of management, corporate governance and human resources in African and emerging markets.
3. Building on the findings of this study and those of Armstrong et al. (2012) who established that CEO pay is higher in companies with weaker corporate governance standards, and companies with weaker corporate governance standards are more likely to employ the services of remuneration consultants (p. 27). Possible future research would be to compare the significant pay-performance relationships between publicly listed companies that utilise the assistance of remuneration consultants in comparison to companies that do not.

## **7.6 Conclusion**

This study has led to a conclusion that is in line with the comments made by Hambrick and Quigley (2013) that in order to achieve an optimal contract one must take into account various factors rather than adopting a sole focus on the value of the CEO's remuneration. Therefore, the goals of the principle and agent must be aligned, combating the agency problem and limiting rent extraction.

The imperative question posed is whether the financial performance and results of the company achieved by the CEO are deserving of the awarded remuneration. King IV (Institute of Directors South Africa, 2016) required a link to be established between the

remuneration of the CEO and the company financial performance. From the results gathered for the JSE companies this question cannot be convincingly answered. Only EPS held a significant but weak relationship with total pay, to which no other significant relationships were identified. The decision taken by a remuneration committee to compensate a CEO needs to be robust enough to answer to the scrutiny of shareholders, regulators and the public, due to the increase in media attention surrounding CEO remuneration and corporate governance practises.

The relationship between CEO remuneration and company financial performance must be measured using both traditional accounting-based and market-based measures. If the CEO is found to be fairly and ethically deserving of the desired remuneration, then the discussion must turn to the amount of the remuneration; when to issue the remuneration; and what method of remuneration should be adopted (Hambrick & Quigley, 2013). From the findings of this study and the subsequent absence of significant relationships being identified between CEO remuneration and company financial performance, it appears that the alignment between CEO pay-performance relationships in South Africa are very weak at best. In comparison, Australian CEOs appear to be remunerated relative to the company's financial performance, this being in line with the legislation and codes pertaining to corporate governance of Australian publicly listed companies.

The development of an optimal contract must use corporate governance reporting criteria as a minimum standard to develop the optimal pay-performance relationship. It is therefore imperative to note that effective pay-performance relationships between CEO remuneration and company financial performance are achievable. The key proviso in the attainment of optimal contracting is the customisation of the remuneration relationships to achieve the best fit between the CEO and company financial performance.

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## Appendix

### Appendix A: CEO headcount and gender comparison from 2011 to 2016

	ASX	Male	Female	JSE	Male	Female
1	AGL Energy Ltd.	3		Anglo American Platinum Ltd.	2	
2	AMP Ltd.	2		Aspen Pharmacare Holdings Ltd.	1	
3	ANZ Banking Group Ltd.	2		Assore Ltd.	1	
4	APA Group	1		Barclays Africa Group Ltd.		1
5	ASX Ltd.	2		Bidvest Group Ltd.	2	
6	Caltex Australia	1		Capitec Bank Holdings Ltd.	2	
7	Cochlear Ltd.	2		Discovery Ltd.	1	
8	Commonwealth Bank	2		Exxaro Resources Ltd.	2	
9	Crown Resorts Ltd.	1		FirstRand Ltd.	2	
10	Dexus Units FP Stapled	2		Growthpoint Properties Ltd.	1	
11	GPT Group	2		Imperial Holdings Ltd.	2	
12	Incitec Pivot Ltd.	1		Kumba Iron Ore Ltd..	3	
13	Insurance Australia Group Ltd.	2		Liberty Holdings Ltd.	2	
14	Lendlease Group	1		Life Healthcare Group Holdings Ltd.	2	
15	Macquarie Group Ltd.	1		MMI Holdings Ltd.	1	
16	Mirvac Group	1	1	Mr Price Group Ltd.	1	
17	National Australia Bank Ltd..	2		MTN Group Ltd.	1	
18	Orica Ltd.	3		Nedbank Group Ltd.	1	
19	Origin Energy Ltd.	1		Netcare Ltd.	1	
20	Qantas Airways Ltd.	1		Redefine Properties Ltd.	2	
21	Ramsay Health Care Ltd.	1		RMB Holdings	2	
22	REA Group Ltd.	2	1	Sanlam Ltd.	2	
23	Sonic Healthcare Ltd.	1		Sasol Ltd.	2	
24	Stockland Corporation Ltd.	2		Shoprite Holdings Ltd.	1	
25	Suncorp Group Ltd.	2		Standard Bank Group Ltd.	3	
26	Telstra Corporation	2		Foschini Group Ltd.	1	
27	Transurban Group	2		Tiger Brands Ltd.	2	
28	Wesfarmers Ltd.	1		Truworths International Ltd.	1	
29	Westpac Banking Corp	1	1	Vodacom Group Ltd.	2	
30	Woolworths Group Ltd.	3		Woolworths Holdings Ltd.	1	
	Subtotal	47	3		46	1
	Percentage	94%	6%		98%	2%
	Total	53			48	

Source: Own research

## Appendix B: ASX Transformed data 2012 – 2016

<u>Period</u>	<u>N Obs</u>	<u>Variable</u>	<u>N</u>	<u>Mean</u>	<u>Std Dev</u>	<u>Minimum</u>	<u>Maximum</u>
2012	30	FP	30	0	1	-3.6	1
		VP	30	0	1	-2.9	1.8
		TP	30	0	1	-3.2	1.5
		MC	30	0	1	-0.8	2.8
		ROE	30	0	1	-2.6	4.2
		ROA	30	0	1	-3.6	3.5
		EPS	30	0	1	-2.4	4.3
		MVA	30	0	1	-0.7	4.3
		EVA	30	0	1	-1.9	3.1
2013	30	FP	30	0	1	-1.4	3.8
		VP	30	0	1	-2.3	2
		TP	30	0	1	-1.8	2.2
		MC	30	0	1	-0.7	2.8
		ROE	30	0	1	-1.1	3.4
		ROA	30	0	1	-1.5	3.3
		EPS	30	0	1	-1.5	4
		MVA	30	0	1	-2.1	3.6
		EVA	30	0	1	-1.9	3.7
2014	30	FP	30	0	1	-3	3.8
		VP	30	0	1	-3.1	2.2
		TP	30	0	1	-4	1.9
		MC	30	0	1	-0.8	4.6
		ROE	30	0	1	-5.1	0.5
		ROA	30	0	1	-4.3	1
		EPS	30	0	1	-4	2
		MVA	30	0	1	-2.5	2.7
		EVA	30	0	1	-2.6	4.3
2015	30	FP	30	0	1	-1.9	3.4
		VP	30	0	1	-2.1	2.8
		TP	30	0	1	-1.9	3.1
		MC	30	0	1	-2.7	2.2
		ROE	30	0	1	-2.4	4.6
		ROA	30	0	1	-3.8	3.1
		EPS	30	0	1	-4.3	2.3
		MVA	30	0	1	-4.2	2.2
		EVA	30	0	1	-1.4	4.5

Source: Own research

## Appendix C: ASX Transformed data 2016

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<u>Period</u>	<u>N Obs</u>	<u>Variable</u>	<u>N</u>	<u>Mean</u>	<u>Std Dev</u>	<u>Minimum</u>	<u>Maximum</u>
		FP	30	0	1	-3.7	1.4
		VP	30	0	1	-2.5	1.9
		TP	30	0	1	-3.1	2
		MC	30	0	1	-1.6	3.3
2016	30	ROE	30	0	1	-2.5	4.1
		ROA	30	0	1	-2.4	3.7
		EPS	30	0	1	-2.2	3.4
		MVA	30	0	1	-1.8	3.2
		EVA	30	0	1	-4.9	1.8

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Source: Own research

## Appendix D: JSE Transformed data 2012 – 2015

<u>Period</u>	<u>N Obs</u>	<u>Variable</u>	<u>N</u>	<u>Mean</u>	<u>Std Dev</u>	<u>Minimum</u>	<u>Maximum</u>
2012	30	FP	30	0	1	-1.2	4
		VP	30	0	1	-1.7	3.2
		TP	30	0	1	-1.5	2.9
		MC	30	0	1	-2	2.6
		ROE	30	0	1	-5	0.4
		ROA	30	0	1	-4	0.7
		EPS	30	0	1	-4.7	0.8
		MVA	30	0	1	-4.3	1.9
		EVA	30	0	1	-3.8	1.2
2013	30	FP	30	0	1	-2	4.5
		VP	30	0	1	-1.8	4.5
		TP	30	0	1	-1.3	4.9
		MC	30	0	1	-1.8	4.1
		ROE	30	0	1	-4.2	3.4
		ROA	30	0	1	-1.8	4.6
		EPS	30	0	1	-2.5	3.9
		MVA	30	0	1	-4.4	2.4
		EVA	30	0	1	-2.5	3.6
2014	30	FP	30	0	1	-1.2	3.6
		VP	30	0	1	-3.6	2
		TP	30	0	1	-2.9	3.2
		MC	30	0	1	-3.8	1.9
		ROE	30	0	1	-0.5	5.3
		ROA	30	0	1	-2.5	2
		EPS	30	0	1	-3.8	1.4
		MVA	30	0	1	-4.3	2.7
		EVA	30	0	1	-3	1.9
2015	30	FP	30	0	1	-3.3	2.3
		VP	30	0	1	-2.6	3.2
		TP	30	0	1	-2.4	3.1
		MC	30	0	1	-3.8	1.8
		ROE	30	0	1	-3.2	0.8
		ROA	30	0	1	-3	0.9
		EPS	30	0	1	-4.1	0.7
		MVA	30	0	1	-3.3	2.8
		EVA	30	0	1	-4.5	0.7

Source: Own research

## Appendix E: JSE Transformed data 2016

<u>Period</u>	<u>N Obs</u>	<u>Variable</u>	<u>N</u>	<u>Mean</u>	<u>Std Dev</u>	<u>Minimum</u>	<u>Maximum</u>
2016	30	FP	30	0	1	-3.6	2.7
		VP	30	0	1	-1.3	4.8
		TP	30	0	1	-1.5	4.4
		MC	30	0	1	-2.5	2.6
		ROE	30	0	1	-0.4	5.3
		ROA	30	0	1	-0.5	5.2
		EPS	30	0	1	-0.8	5.1
		MVA	30	0	1	-4.4	1.6
		EVA	30	0	1	-4.4	2.1

Source: Own research



## Appendix E: Ethical clearance

**Gordon  
Institute  
of Business  
Science**  
University  
of Pretoria

22 January 2018

Pascal Desfontaines

Dear Pascal

*Please be advised that your application for Ethical Clearance has been approved.*

*You are therefore allowed to continue collecting your data.*

*We wish you everything of the best for the rest of the project.*

*Kind Regards*

GIBS MBA Research Ethical Clearance Committee