



**LONG-TERM INCENTIVES AND FINANCIAL PERFORMANCE: A
STUDY OF REAL ESTATE INVESTMENT TRUSTS LISTED ON
THE JOHANNESBURG STOCK EXCHANGE**



Thesis submitted in fulfillment of the requirements for the degree
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ABSTRACT

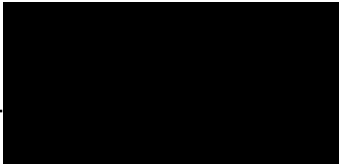
Based on agency theory, this study examines the relationship between long-term incentives and the financial performance of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange (JSE). Primarily, the study aimed to assess the impact of stock options (shares) on financial performance and to evaluate the impact of cash bonuses on financial performance. The study utilised the past five years' datasets of 22 Real Estate Investment Trusts listed on the Johannesburg Stock Exchange. The datasets included long-term incentives given to executives and the financial performance of JSE-listed REITs from 2018 to 2022. A panel data regression analysis was conducted using SPSS to establish the influence of long-term incentives on financial performance. The study found a positive relationship between stock options and the financial performance of the Real Estate Investment Trusts listed on the Johannesburg Stock Exchange. The results also show a positive relationship between cash bonuses and the financial performance of the Real Estate Investment Trusts listed on the Johannesburg Stock Exchange. This study concluded that stock options and cash bonuses positively influence the financial performance of the JSE-listed REITs' Return on Capital Employed. These findings align with agency and optimal contracting theories, emphasising the role of incentives in mitigating conflicts and promoting mutual satisfaction between executives and shareholders. The results thus underscore the broader implications of remuneration policies, positioning them as an integral component of corporate governance strategies for JSE-listed companies. The study amplifies the broader implications of remuneration policies, positioning them as tools for regulatory compliance and as integral components of comprehensive corporate governance strategies tailored for the unique context of JSE-listed REITs.

Keywords: Agency Theory, Corporate Governance, Long Term Incentives, Financial Performance, Real Estate Investment Trusts

DECLARATION: APPENDIX A

I, Lunghile Mbhokota declare that this Research Report submitted for the Masters in Business Administration degree to The Independent Institute of Education is my own, unaided work and has not been previously submitted to another University or Higher Education Institution for degree purposes. Any assistance that I have received has been duly acknowledged in the report.

Except where reference is made in the text, this report contains no material published elsewhere or extracted in whole or part from a thesis or report presented by me for another qualification. No other person's work has been used without due acknowledgment in the main text of the report.

Signed: _____


Date: 21 February 2024

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LIST OF ABBREVIATIONS

CEO	Chief Executive Officer
IRESS	Integrated Real-time Equity System
JSE	Johannesburg Stock Exchange
LTIs	Long-Term Incentives
M/B Ratio	Market-to-Book Ratio
P/E Ratio	Price-to-Earnings Ratio
REITs	Real Estate Investment Trusts
ROA	Return of Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
STIs	Short Term Incentives
STO	Stock Options

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CHAPTER 1:

INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

Real Estate Investment Trusts (REITs) listed on stock exchanges like the Johannesburg Stock Exchange exist to offer investors a liquid and diversified means of investing in real estate without direct property ownership (Aalbers, Taylor, Klinge & Fernandez, 2023). They provide regular dividend income, benefit from professional management, and enjoy tax advantages while enhancing transparency and regulatory oversight. By going public, they can raise capital efficiently, contribute to economic development, and facilitate market valuations, making them an attractive investment vehicle for those seeking exposure to the real estate sector. According to Oladeji, Yacim, Wall, and Zulch (2020), the existence of REITs contributes not only to the financial well-being of investors but also to broader economic development as REITs hold significant economic importance, contributing approximately 0.8% to South Africa's GDP in 2018, amounting to around 40 billion Rands. Despite their importance to investors and the country's economic growth, the sector has recently faced scrutiny and allegations of financial manipulation, posing a potential threat to investor confidence (Africa Property News, 2019). The concerns raised suggest a lack of robust corporate governance systems within the REITs, prompting a closer examination of the sector's financial practices (Ward, Brill & Raco, 2022).

In recent years, significant strides have been made in enhancing corporate governance standards through company policy reforms. One driver of transformation in South Africa is the proposed 'say on pay' directive, which seeks to establish a connection between compensation and performance while fostering increased interaction between shareholders and executives. In this regard, the compensation is in the form of Long-Term Incentives (LTIs), which include variables such as stock options and cash bonuses (Bonato, Çepni, Gupta & Pierdzioch, 2022). The relationship between variable pay, particularly long-term incentives and financial performance, has been a topic of extensive investigation over an extended period (Aalbers et al., 2023). One of the prevailing ideas in the field of variable studies is the agency theory, which posits that conflicts may arise due to the separation of ownership between principals (shareholders) and control by agents (managers).

The principal-agent issue is a concept employed in economics to examine situations in which an entity (the agent) makes decisions on behalf of another (the principal) influenced by their own moral beliefs or interests (Gwala & Mashau, 2023). Agency theory is a corporate

governance phenomenon and applies to Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange. Real Estate Investment Trusts (REITs), publicly traded on stock exchanges, such as the Johannesburg Stock Exchange, provide investors with a convenient and diversified avenue for investing in real estate, without requiring direct ownership of properties.

In this context, shareholders (the principals) delegate decision-making authority to the REIT's management team (the agents). Shareholders typically seek maximised returns and dividends, while management may have incentives to pursue strategies that could boost their compensation or the company's prestige (Aalbers et al., 2023). To address this conflict of interest, many REITs employ tools like long-term incentives (LTI)s in executive compensation structures to align the interests of the agents (management) with those of the principals (shareholders). The primary objective is to ensure that management's measures are aligned with the long-term financial performance and stability of the Real Estate Investment Trust (REIT), safeguarding trust and shareholder value (García, Orozco, Pineda & Villalba, 2022).

One of the most contentious and ongoing issues in the literature on corporate governance is executive remuneration, particularly long-term incentives. Long-term Incentives (LTIs) are incentives for attaining medium to long-term financial goals and increasing shareholder value given to executives through the implementation of long-term performance plans, which are crucial performance-based instruments which companies use (Bonner & Mason, 2022). Tamplin & Thompson (2023) posits that long-term incentive plans (LTIs) are used as a tool which seeks to retain staff by compensating them when they meet specified performance benchmarks or objectives (Adedeji, Ong, Uzir, & Abdul-Hamid, 2020).

The notion of long-term incentives emanates from the prospects of aligning managers' interests with those of shareholders to increase shareholder value (Lambourne, 2022). Shareholder value creation encourages a company's management to use the equity and debt capital invested by its shareholders to decide on and carry out financing and strategic moves that will improve the wealth of its owners above and beyond what they have invested (Lambourne, 2022). Companies use accounting-based and market-based financial proxies to measure financial performance, which impacts shareholder value.

Premised on agency theory, this study seeks to investigate how long-term incentives (LTIs) influence the financial performance of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange (JSE).

1.2 BACKGROUND

Ongoing debates surrounding executive compensation and its alignment with company performance have garnered significant media attention. Public officials, shareholders and academics criticise the quantifiable nature of these compensation schemes. In recent years, efforts have been made to enhance corporate governance standards through political reforms and regulatory adjustments, particularly in listed companies, where the proposed 'say on pay' directive aims to establish a stronger connection between pay and performance and foster increased engagement between shareholders and executives. This directive addresses various corporate governance aspects related to public companies, shareholders, intermediaries, and proxy advisors. It is worth noting that the 2008 financial crisis and the 2019 COVID-19 pandemic underscored the tendency of shareholders to support excessive short-term risk-taking by managers and a lack of close monitoring of investment decisions. Consequently, there has been a push for more stringent auditing standards and greater transparency regarding employee financial incentives. This has led to improved reward structures that emphasise a long-term focus on executive incentive schemes.

According to Bussin, Wöcke and Deysel (2023), long-term incentives (LTIs) comprising cash bonuses and stock options (shares), are integral components of executive compensation packages designed to align executive behaviour with a company's long-term strategic goals and shareholder interests. Cash bonuses provide immediate financial incentives tied to specific performance metrics, fostering a focus on achieving key financial targets. At the same time, stock options grant executives the right to purchase company shares at a predetermined price in the future, incentivising them to contribute to the company's sustained growth and stock price appreciation (Bussin, 2022). Matemane (2022) notes that cash bonuses offer immediate rewards and stock options encourage a more extended perspective by linking compensation to stock performance. Striking the right balance between these LTI components is crucial for motivating executives to drive both short-term and long-term success, all while minimising potential conflicts of interest.

The issue of executive remuneration, specifically concerning flexible compensation structures, continues to be a significant subject of discussion in the public sphere. This is particularly true in the light of recent occurrences, such as the COVID-19 pandemic, which have adversely affected companies' Return on Capital Employed (ROCE), a critical metric for assessing company performance. Variable compensation constitutes a regular component of compensation packages, often earned by meeting or exceeding performance goals set for individuals, teams, or the company (Ramgath et al., 2022). Instances where poor financial performance adversely affected shareholders while executives received generous

compensation packages, have sparked public outrage (Van Wyk & Wesson, 2022). Reda (2022) asserts that during times of crisis, shareholders tend to support executives' excessive short-term risk-taking and may not effectively oversee long-term investment decisions, as evidenced by the 2008 financial crisis. To mitigate this tendency towards short-termism and excessive risk, long-term incentives have been employed as a strategic tool to align executive behaviour with a firm's long-term objectives. Return on Capital Employed (ROCE), a critical measure of financial efficiency, plays a central role in assessing how well a company utilises its capital to generate returns, making it an essential metric in evaluating executive performance and compensation in the broader context of company success (Buchanan, Quan, & Rishi, 2018).

The principal-agent issue, central to economics, arises when one entity (the agent) makes decisions on behalf of another (the principal) with potentially differing interests (García, Orozco, Pineda & Villalba, 2022). This issue is relevant to Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange. Shareholders (the principals) delegate decision-making authority to REITs' management (the agents). Executives often prioritise short-term incentives, while shareholders focus on the company's long-term performance and earnings (Zhandi, Mohamad, Keong, & Ehsanulla, 2019). Agency theory, as explained by Jensen and Meckling (2018), defines agency relationships where one party (the principal) appoints another (the agent) to act on their behalf, including decision-making delegation. To address this, aligning executive compensation plans with the company's success is proposed, ultimately benefiting shareholders (Zhandi et al., 2019).

In modern corporations, executive management wields significant influence over future financial growth. Studies highlight the increasing use of incentives to link pay to performance. In competitive markets, the focus on 'human capital' intensifies. Hodak (2019) argues that long-term incentives are crucial for attracting and retaining key employees, particularly in 'human capital' intensive industries. Financial incentives also enhance efficiency, with top managers overseeing lower-level management and employees in a 'top-down' approach. Long-term incentive plans (LTIs) are designed to increase executive ownership and incentivise profitable business strategies. Despite extensive research on financial incentives, conclusions are polarised, with contradictory findings (Hodak, 2019).

It is imperative to address the primary concern of agency theory, which pertains to the inherent conflict between shareholders and senior management in a principal-agent dilemma resulting from the division of ownership and control inside publicly traded corporations (Raimo, Vitolla, Marrone & Rubino, 2021). Based on Sahasranamam, Arya and Sud (2020), measures like LTI plans aim to mitigate the agency problem while aligning shareholder and managerial interests.

The agency theory tackles issues such as asymmetrical information and differing risk preferences. Dumay, La Torre and Farneti (2019) explains how shareholder and manager asymmetries impact capital acquisition and deployment . Factors affecting financial performance include Research and Development (R&D) investments, leverage, acquisition prospects, debt financing, and cash reserves. Coles, Daniels and Naveen (2017) correlate managerial incentives with investment policy, debt policy and firm risk, indicating the impact of compensation structure. Siueia, Wang and Deladem (2019) highlight high-growth firms' challenges in dealing with asymmetrical information. Researchers seek optimal incentive mechanisms for value-creating managerial decisions, emphasising the alignment of manager wealth with firm performance. Studies generally associate LTI plans with company growth, improved productivity, and reduced employee turnover.

This study investigates the impact of long-term incentive plans on the financial performance of Real Estate Investment Trusts listed on the Johannesburg Stock Exchange. Similar to the study of Naik, Padia and Callaghan (2020), Nieman (2018) and Visch (2022) , this study seeks to investigate the impact of long-term incentives (LTIs) on financial proxies such as Return on Capital Employed using data drawn from REITs listed on the JSE.

1.3 MOTIVATION FOR THE STUDY

Due to the growing evidence that senior executives have been overpaid during the past two decades (Martin, Wiseman & Gomez-Mejia, 2019), executive compensation has become a particularly contentious issue in the corporate world (Gill & Kohli, 2018), with previous studies providing mixed results.

Hult (2015) concludes that there was a positive relationship between long-term incentives and financial performance in Swedish-listed companies from 2008 to 2011. Zhandi, Mohamad, Keong and Ehsanulla (2019) also found a positive relationship between long-term incentives and the financial performance of companies listed on Bursa Malaysia from 2011 to 2016. Visch (2022) found a negative relationship between long-term incentives and Tobin's Q on the most prominent Dutch listed firms from 2018 to 2021. Al-Matari, Mgamal, Alosaimi and Alruwaili (2022) found a negative and insignificant relationship between long-term incentives and firm performance. Nieman (2018) found no relationship between long-term incentives and financial performance on FTSE 100 listed companies between 2017 and 2018. Therefore, due to conflicting results, this study seeks to establish if, indeed, there is a relationship between long-term incentives and financial performance.

Furthermore, the study is unique because it is the first to be conducted pre-COVID-19, during COVID-19 and post-Covid-19 in the Real Estate sector in South Africa. The outbreak of

COVID-19 led to the implementation of nationwide shutdowns, which significantly influenced the operational activities of firms. Consequently, these adverse effects on their operations resulted in a decline in their financial performance (Mpofu, Moobela, & Simbanegavi, 2023). Therefore, conducting research to comprehend the relationship between long-term incentives and the financial performance of enterprises in the aftermath of the COVID-19 pandemic would contribute to the existing body of knowledge.

As reflected in the study of Tshipa, Brummer, Wolmarans and Du Toit (2018), industry nuances play a role in the relationship between corporate governance and financial performance. To this end, this study focuses on one industry: the real estate sector in South Africa. The study focuses on Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange (JSE).

1.4 RESEARCH PROBLEM

In recent decades, extensive research has delved into the pervasive issue of agency conflict within corporations, characterised by the misalignment of objectives among shareholders, owners, managers, and executives (Mpofu et al., 2023). Consequently, various remedies have been proposed, including implementing long-term incentives, which are performance-based cash bonuses and stock options (shares), to reinforce executives' ownership stake and foster their long-term commitment to the organisation (Muyeed-Hasan, 2021).

Several studies have examined the relationship between executive compensation, including long-term incentives (LTIs), and agency problems in corporate governance. Mvovo (2020) found that companies with smaller boards and higher levels of executive stock ownership, which often includes LTIs, had better agency control and higher market valuations. Akhalumeh and Ogunkuade (2021) discuss the shortcomings of executive compensation in their book "Pay Without Performance: The Unfulfilled Promise of Executive Compensation" but also acknowledged that well-structured LTIs can align executive and shareholder interests. Edmans, Gabaix and Jenter (2017) explored executive compensation practices, including LTIs, in their study "Executive Compensation: A Modern Primer," emphasising the importance of performance-based pay in motivating managers to act in shareholders' best interests. Buthelezi (2021) examined how executive compensation, including LTIs, specifically stock options, can mitigate agency costs and enhance firms' performance by aligning the interests of executives with those of shareholders.

The norm of providing cash bonuses and stock options has been a prominent feature in executive compensation packages. However, the literature has been replete with ongoing debates concerning the nexus between these normative compensation elements and their

impact on a firm's financial performance (Zhandi et al., 2019). Notably, a study conducted by Resnick (2013) and another by Niak, Padia, and Callaghan (2023) uncovered a positive relationship between long-term incentives, including stock options, and financial performance, while Rehman, Khalil, Maqbool, and Hussain (2021) observe that companies compensating their CEOs and directors more generously, tend to exhibit superior financial performance as measured by Return on Capital Employed (ROCE). Intriguingly, Visch (2022) reveals that long-term incentives, encompassing stock options, had an adverse effect on ROCE during times of crisis, juxtaposing the findings of Matemane (2022), who identifies a negative relationship between long-term incentives, including stock options and financial performance.

Nevertheless, Nieman (2018) offers a contrasting perspective by demonstrating that heightened long-term incentives encompassing stock options did not yield improved financial performance. In light of this complexity and the normative inclusion of cash bonuses and stock options (shares) in executive compensation, the existing body of literature presents a discernible conundrum, marked by incongruous outcomes and the absence of a definitive consensus regarding the intricate relationship between these compensation elements and firm performance (Tshipa et al., 2018). Hence, this study aims to provide a comprehensive and nuanced understanding of this multifaceted phenomenon, offering insights that can contribute to more effective corporate governance and executive compensation practices in the modern business landscape. Therefore, the problem statement is that long-term incentives mitigate against agency problems.

1.5 RESEARCH OBJECTIVE

The study seeks to examine the relationship between long-term incentives and financial performance of Real Estate Investment Trusts (REITs). Long-term incentive plans are measured by stock options and cash bonuses, while financial performance is measured by Return on Capital Employed (ROCE). Therefore, the study's primary objective is to analyse the effect of long-term incentives and the financial performance of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange.

1.5.1 SPECIFIC OBJECTIVES

- i. To assess the impact of stock options (shares) on the financial performance, specifically the ROCE of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange.

- ii. To evaluate the impact of cash bonuses on financial performance, specifically the ROCE of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange.

1.5.2 RESEARCH QUESTIONS

To fulfil the primary research objectives, the research endeavours to answer the following research questions:

- i. What is the influence of stock options (shares) on the financial performance, specifically ROCE, of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange?
- ii. What is the influence of cash bonuses on the financial performance, specifically ROCE, of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange?

1.6 RESEARCH HYPOTHESIS

Given the conflicting findings on previous studies, the following hypotheses are developed to fulfil the objectives:

- i. Stock options (Shares) positively influence the financial performance of REITs listed on the Johannesburg Stock Exchange
- ii. Stock options (Shares) have no influence on the financial performance of REITs listed on the Johannesburg Stock Exchange
- iii. Cash bonuses positively influence the financial performance of REITs listed on the Johannesburg Stock Exchange
- iv. Cash bonuses have no influence on the financial performance of REITs listed on the Johannesburg Stock Exchange

1.7 SIGNIFICANCE OF THE STUDY

Previous studies have investigated the relationship between executive compensation and financial performance (Hampsink, 2020; Hodak, 2019; Visch, 2022; Zhendi et al., 2019). However, their studies have found mixed results. For instance, the study by Visch (2020) found a negative relationship, whilst Hult (2015), Hampsink (2020)) and Zhendi et al. (2019) found a positive relationship. In addition, Nieman (2018) found no relationship between long-term incentives and financial performance.

Consequently, the study aims to establish whether there is indeed a relationship between long-term incentives and financial performance. Furthermore, if such a relationship exists, is it a positive, negative, or null relationship between the two variables?

This study aims to further existing research on the effectiveness of long-term incentives (LTIs) included in executives' compensation on the financial performance of REITs listed on the JSE. The relationship between long-term incentives (LTI) plans and the financial performance of JSE-listed companies has only been examined in a small number of prior research studies.

Due to the conflicting findings from previous studies, this study contributes to the body of knowledge by investigating the impact of long-term incentives on the financial performance of JSE-listed REITs over three economic periods: before, during and after the COVID-19 pandemic.

The period of this study is unique in that it is the first study to investigate the relationship between long-term incentives and financial performance pre-, during and after the COVID-19 pandemic in the Real Estate sector in South Africa.

1.8 SCOPE OF THE STUDY

The scope of this study is comprehensive and focuses on Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange (JSE). It aims to assess the impact of long-term incentives, including cash bonuses and stock options (shares), on the financial performance of these REITs within a specified time frame. The study involves the selection of specific REITs to facilitate manageable data analysis while considering potential variations in the effects of long-term incentives across different REITs and examining how this impact evolves. The study primarily utilises financial performance indicators and executive compensation data to address the research questions. Furthermore, this study examines the REIT activities within a specific geographic region of the Johannesburg Stock Exchange Listing. The research primarily focuses on data collected from the years 2018 to 2022.

1.9 DESCRIPTION OF THE STUDY AREA

The study area for this research is the Johannesburg Stock Exchange (JSE), which serves as the primary marketplace for Real Estate Investment Trusts (REITs) in South Africa (Sokhela, 2022). The JSE is one of the leading stock exchanges in the world, known for its robust financial markets and extensive trading activities. Within the JSE, the study focuses on REITs, specialised investment entities that own and manage income-generating real estate properties (Buthelezi, 2021).

Johannesburg, as the financial hub of South Africa, is home to a diverse range of REITs, each with its unique portfolio of properties and investment strategies (Mkhonza & Sifolo, 2022). These REITs operate within the broader context of the South African real estate market, which is influenced by economic conditions, property trends and regulatory frameworks (Mkhonza & Sifolo, 2022).

The study delves into REITs' operations and financial performance within this dynamic and competitive environment. This study aims to analyse the JSE-listed Real Estate Investment Trusts (REITs) to gain a deeper understanding of the influence of long-term incentives, such as cash bonuses and stock options, on the financial performance of these REITs. This analysis is conducted within the unique context of the South African real estate market and the regulatory framework established by the Johannesburg Stock Exchange (JSE).

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter thoroughly examines the substantial corpus of corporate governance and finance literature. This literary work encompasses several definitions and provides explanations for various concepts. The chapter primarily focuses on a theoretical literature review surrounding agency theory, optimal contracting theory, corporate governance, and proxies for financial success. Additionally, the chapter focuses on empirical reviews of long-term incentives and their impact on financial performance. In addition, the chapter focuses on conducting a comprehensive analysis of empirical evidence pertaining to the influence of long-term incentives on financial performance. Finally, the chapter elucidates the conceptual framework that underpins the theoretical framework.

This chapter aims to synthesise this wealth of research, offering insights into the role of long-term incentives in shaping the REITs industry and how long-term incentives can optimise financial performance and sustainability.

2.2 DEFINITION OF KEY CONCEPTS

2.2.1 SEPARATION OF OWNERSHIP AND CONTROL

According to Cumming, Nashier and Gupta (2023), the concept of the separation of ownership and control dates back to the early 1930s, coinciding with the onset of the Great Depression in the United States. This phenomenon marked a significant transformation in the corporate landscape and gave rise to a novel perspective on the nature of corporations. Scholars like Berle and Means (1932) were among the early pioneers in delineating the "separation of ownership and control" notion. They articulated how "new conditions" had emerged within modern corporations, underpinning the idea that when owners delegate control of their assets to others. A disconnect ensues wherein owners relinquish their ability to directly influence decisions and financial growth (Smith, 2019).

2.2.2 CORPORATE GOVERNANCE

Based on Reed's (2022) definition, corporate governance comprises internal and external components, exhibiting variations among different countries. Its primary objective is to ensure companies' efficient management for their shareholders' benefit, ultimately fostering increased

confidence in publicly traded firms. The necessity for regulations and governance mechanisms has grown in recent years, particularly with the rise of institutional investors (Reed, 2022).

An illustrative example is the King IV, a significant South African corporate governance code introduced in 1994 by the King Committee, led by Mervyn King. Initially applicable to public companies with a market value exceeding a certain threshold, the Code has undergone multiple revisions to align with national and international standards (Reed, 2022). The 'comply or explain' principle, a cornerstone of the Code, allows companies to deviate from its provisions with proper justifications. In line with global best practices, the Code addresses various aspects of corporate governance, including executive management remuneration, particularly concerning financial instruments (Corvino, Doni & Bianchi, 2020; Reed, 2022).

2.2.3 LONG-TERM INCENTIVES (LTIS)

According to McDermott, Zhang, Hopkins, & Hayes (2019), Long-term incentives, commonly referred to as LTIs, constitute an integral segment of a comprehensive compensation package. They serve the dual purpose of motivating and rewarding executives over an extended duration, often encompassing multiple years (McDermott, et al., 2019). These LTI components typically encompass instruments such as stock options, restricted stock units, and performance-based awards. In essence, LTIs play a pivotal role in bestowing incentives and directing employees' attention towards desired future goals and objectives, making them a valuable aspect of overall compensation structures (Van-Wyk & Wesson, 2022)

2.2.4 FINANCIAL PERFORMANCE

According to Yousif (2022), a financial performance assessment is a comprehensive evaluation of a company's ability to generate revenue and effectively manage its assets, liabilities and the financial interests of stakeholders and stockholders. This evaluation entails the measurement of a company's economic vitality and prosperity. Financial performance is gauged through a diverse array of financial metrics, including revenue, profit margins, Return on Capital Employed (ROCE) and earnings per share (Makki & Alqahtani, 2022).

2.2.5 REAL ESTATE INVESTMENT TRUSTS (REITS)

Noguera (2023) defines Real Estate Investment Trusts (REITs) as specialised entities owning and financing income-producing real estate properties spanning various property sectors. Noguera (2023) specifies that for a company to qualify as REIT, these real estate companies must adhere to specific criteria and standards. The majority of REITs are publicly traded on prominent stock exchanges, presenting investors with a range of advantages (Aalbers et al.,

2023). These include their role as specialised investment vehicles that oversee and operate income-generating real estate assets, distributing a significant portion of their earnings to shareholders in the form of dividends and the tax benefits they often provide (Aalbers et al., 2023).

2.2.6 RETURN ON CAPITAL EMPLOYED (ROCE)

Suhendro (2022) defines Return on Capital Employed (ROCE), often known as the 'primary ratio,' as a financial metric employed to assess a company's profitability and its effectiveness in deploying its invested capital. In essence, it quantifies a business's ability to generate profits from the capital at its disposal.

2.2.7 SHAREHOLDER INTERESTS

The research conducted by Karib, Alfiyanti and Rakhmawati (2023) reveals that shareholders prioritise the financial well-being and objectives of the persons or entities that possess business shares. As a result, shareholders are significantly interested in the firm's success and overall value. In the context of public corporations, shareholders are chiefly focused on the project or business's profitability. Their aim is to ensure robust revenue generation to yield increased share prices and dividends. Their predominant interest in projects is securing profits (Uchechi, Pibowei, Jimoh & Chijioke, 2022)

2.2.8 PERFORMANCE-BASED COMPENSATION

According to Nordgren (2022), performance-based compensation comprises of bonuses and stock options that link remuneration to attaining well-defined performance objectives and financial milestones. This compensation structure rewards employees for accomplishing precise goals or outcomes, including achievements like meeting sales targets, enhancing customer satisfaction, or upholding stringent quality standards (Bussin, 2022).

2.3. THEORETICAL REVIEW OF LITERATURE

2.3.1 AGENCY THEORY

This theory was initially developed by Berle and Means (1932) and focuses on the relationship between the principal (Shareholders) and the agents of the principal (Company's managers). An agency relationship is formed when principals engage agents to render certain services and assign decision-making authority to them (Naz, Ali, Rehman & Ntim, 2022). Berle and Means (1932) argue that due to a continuous dilution of equity ownership and control, these become separated into a fully-fledged agency problem. Agency problem is comprised within the economic theory of the firm, where the costs-agency problem has been identified and who

bears the costs; in other words “who is responsible for the cost?” This scenario enables professional management to prioritize their own interests rather than that of shareholders, as stipulated by Corvino, Doni and Bianchi (2020). In principle, the shareholders have ownership of the firm, and it is the responsibility of the company's directors to safeguard and optimize the interests of the shareholders (Naz et al., 2022). Chen-Levi, Buskila and Schechter (2022) states that directors are required to manage the firm in a manner that optimizes the long-term financial gains for the shareholders, so maximizing the company's profitability and cash flow. In agency theory, the agent should operate within the corporate objectives and align his personal goals with the corporate objectives to ensure that the value of the REITs is maximised. The agent will disclose adequate information to make the principal comfortable (Corvino et al., 2020).

The agency theory sees the agents (management) as having primary responsibility to operate the organisation as a separate entity that must report the consequences of their economic decisions to the owners. This means that the agents have been delegated authority and assigned authority by the principal, and they are held accountable for those specified activities; this is the basic analogy of corporate governance (Amin, Ur-Rehman, Ali & Ntim, 2022). According to Almashhadani and Almashhadani (2022), the existence of Long-Term Incentives (LTIs) emanates from the agency theory whereby the managers (agents) are given rewards for managing the company with the resources of the organisation provided by the principal.

In the context of the study, this theory underscores the importance of aligning the interests of executives with those of the shareholders. It recognises that executives may have personal interests or incentives that could diverge from the broader financial goals of the REITs' shareholders (Vitolla, Raimo & Rubino, 2022). Therefore, it becomes crucial to establish mechanisms, such as long-term incentives to ensure that executives are motivated to act in ways that maximise the financial performance and value of the REITs. This alignment of interests is vital for building confidence among shareholders and promoting the sustainable growth of REITs in the stock exchange market (Gore & Walker, 2020).

The agency theory highlights the need for effective governance mechanisms and long-term incentive structures to mitigate potential conflicts of interest between shareholders and executives. This measures ultimately enhance the financial performance and value creation of REITs listed on the stock exchange (Bussin, 2022). Figure 2.1 below is the graphical illustration of Agency Theory in REITs.

Agency Theory Framework

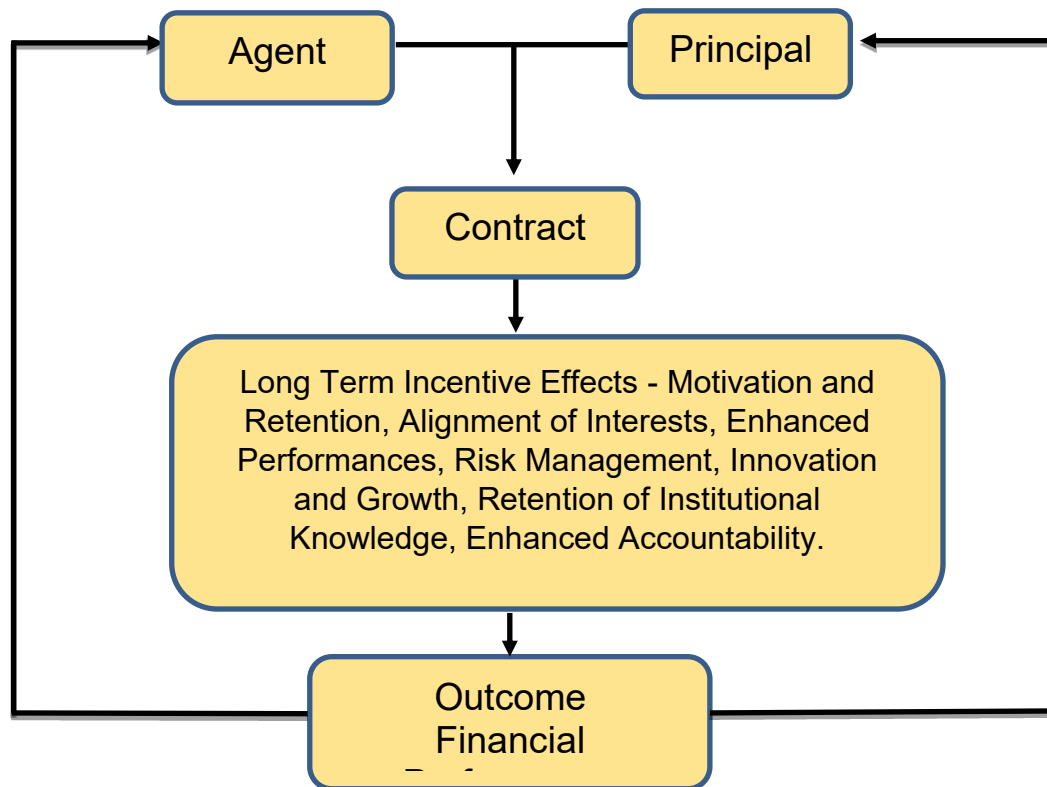


Figure 2.1: Agency Theory Framework

Source: *Author's Compilation (2023)*

However, alternative theories, such as stewardship theory, propose that management functions as stewards whose interests are congruent with those of shareholders. Hence, managers are incentivised to make decisions that align with the preferences of shareholders in order to optimize financial performance. Agency theory should be complimented by additional perspectives such as stewardship theory. However, theories such as optimum contracting theory are in line with agency theory and aim to address agency problems. The next section discusses optimal contracting theory.

2.3.2 OPTIMAL CONTACTING THEORY

The concept of optimal contracting theory, intricately linked to the broader domain of agency theory, has evolved through the contributions of numerous economists, researchers and scholars (Cordazzo, Bini & Marzo,,2020). Agency theory, which delves into the principal-agent relationship within economic and organisational frameworks, fundamentally revolves around optimising contracts to harmonise the interests of principals (typically shareholders or owners) and agents (usually executives or employees). This pursuit of aligning interests to enhance

overall performance and minimise agency costs has been a central theme explored and refined by diverse experts in the field of economics and finance (Chen-Levi et al., 2022).

The optimal contracting theory is fundamentally grounded in the understanding that no perfect contract can perfectly align the interests of managers and shareholders. Instead, the aim is to minimise agency costs, encompassing contracting, monitoring, compliance costs and any remaining divergence costs (Borrego, Borrell & Robles, 2019). This perspective forms the basis for designing executive compensation packages, which are meticulously crafted to achieve this optimisation. The board of directors, acting in the best interest of shareholders, endeavours to establish incentives that align with this principle (Bussin, 2022). This approach is encapsulated in formal models that view the board as selecting the most suitable compensation programme for the benefit of shareholders (Wang, 2023).

In designing an optimal executive compensation programme, the designer must consider several key elements (Baba & Bilgehan, 2021). This includes attracting and retaining high-calibre executives, providing incentives for them to exert optimal effort, and making decisions that are in the best interests of shareholders (Simon, 2020). Two crucial dimensions of the executive incentive problem emerge, incentivising executives to expend sufficient effort and making decisions that advance shareholders' interests (Bussin, 2022). As in any agency relationship, the risk arises that executives may not exert adequate effort on behalf of shareholders due to the inherent preference for leisure time or non-work activities (Bussin, 2022). The second agency problem surfaces when executives make decisions that serve their interests but fail to maximise shareholder value. This may involve excessive spending on corporate facilities, pursuing low-risk business strategies, resisting value-enhancing takeovers and refraining from necessary organisational downsizing (Bussin, Wöcke & Deysel., 2023).

The optimal contracting theory is highly relevant to assessing the impact of stock options and cash bonuses on Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange. This theory underscores the importance of aligning the interests of REIT executives (agents) with those of shareholders (principals) to optimise overall performance and minimise agency costs (Bussin et al., 2023). By linking executive compensation to stock performance, stock options incentivise decisions that enhance financial performance and shareholder value, focusing on long-term sustainability (Heyns, Du-Plessis, Curtin & Kosch, 2021). Cash bonuses encourage sound financial decision-making when tied to specific performance metrics and risk management. Transparency and accountability are crucial, ensuring that the structure and implementation of these incentives align with the REITs' objectives while addressing potential agency conflicts (Almashhadani & Almashhadani, 2022).

Nevertheless, some experts have raised doubts regarding the optimality of contracts between management and shareholders. Bebchuk and Fried (2003) contend that CEO remuneration aligns better with executives who have influence over their own boards and prioritise maximising their own pay within the limits of a "outrage constraint." This argument raises the issue of whether optimum contracting theory effectively matches the interests of managers with those of shareholders.

2.3.3 CORPORATE GOVERNANCE

Empirical data emphasises the understanding that corporate governance interactions can significantly influence shareholder value (Jeffers, 2018). Creating added value for all interested parties is the general goal of corporate governance, which is made clear by global corporate governance as a crucial global issue (Jeffers, 2018). According to Adedeji, Ong, Uzir and Abdul-Hamid (2020), corporate governance is a set of relationships between companies' management, shareholders and the board of directors.

The most common models of corporate governance are the shareholder and stakeholder models. Gwala and Mashau (2023) state that the shareholder model judges performance by considering its market value. Therefore, the interests of the shareholders are of priority, and executives and boards of directors are required to act in the shareholders' interest. However, the stakeholder model takes a broader view of an organisation and is responsible for stakeholders' constituencies rather than just shareholders (Reed, 2022). This study focuses on the shareholder model, which focuses on one country, South Africa.

Global corporate governance reforms have informed corporate governance in South Africa since the establishment of the King Reports. King's reports expand on its predecessors' notion of good corporate citizenship requiring solid business governance (Corvino et al., 2020). The board of directors is responsible for a company's corporate governance. The shareholders' function in control is to elect directors and auditors and to persuade themselves that a suitable governance system exists. The shareholders appoint the board of directors to set the company's strategic goals, give leadership to uphold them, monitor business management and inform shareholders about their management, which are all board duties. Shareholders rely on two board structures: internal and external (Reed, 2022). The two board structures consist of executive and non-executive directors. Non-executive directors form part of the external board structure, while executive directors form part of the internal board structure. These directors are tasked with monitoring company performance to maximise shareholder value. Febriani (2019) states all stakeholders should benefit from corporate governance.

To ensure that all stakeholders benefit from corporate governance, the board of directors is responsible for implementing mechanisms such as remuneration structures that align with company performance (Adedeji et al., 2020). According to the theory, the board designs and sets executive compensation to maximise shareholder value. By creating and approving contracts that draw talented executives and reward them for their efforts in seizing growth opportunities, reducing costs and rejecting wasteful projects (Tshipa, Brummer, Wolmarans & Du-Toit, 2018). This study focuses on long-term incentive plans that form part of executive compensation. Executive compensation is a mechanism used in corporate governance to align the interests of managers to those of shareholders. There are conflicting findings in the study of corporate governance as to how compensation plans align the interests of managers with those of shareholders.

Executive compensation is a topic widely studied in corporate governance. Kirkpatrick (2019) advocates a closer examination of executive compensation plans and their effects on corporate governance. Faced with this challenge, this study sets out to understand compensation structures because they are frequently used as corporate governance mechanisms. The effects of these mechanisms must be assessed to determine how they affect the principal's wealth, the company, the economy and the efficacy of the governance codes (Anton & Nucu, 2020). Corporate governance looks into finding solutions to the principal-agency problem; hence, the interest in whether executive compensation is linked to financial performance.

Over the years, executive compensation has been a contentious issue (Edmans, Gabaix & Jenter, 2017). Various studies have been conducted to investigate its influence on firm performance. Executive compensation considers corporate governance concerns, which merits inclusion in this study. Corporate governance uses tools like executive compensation to align the interests of executives with those of shareholders. According to Weenders (2019), the board designs and sets executive compensation to maximise shareholder value by creating and approving contracts that draw talented executives and reward them for seizing growth opportunities, reducing costs and rejecting wasteful projects. Edmans et al. (2017) further assert that empirical evidence reveals that theory and practice are inconsistent, using examples from the United States (US), where CEO salaries have significantly increased and much quicker than corporate performance and average salaries.

This poses a significant challenge in studying executive compensation and corporate governance; hence the motivation for the research. In a nutshell, corporate governance aims to align executive compensation and financial performance.

2.3.4 FINANCIAL PERFORMANCE PROXIES

Financial performance is one of the most important constructs in corporate governance. Performance measurement is crucial in management and strategic management literature (Bawa, 2019). The concept of "firm performance" has been widely accepted by researchers as a multidimensional construct that includes numerous factors to evaluate, such as the efficiency of operations, the reputation of the company, the survival of the organisation and the economic goals of the business (Gentry & Shen, 2019).

A company's financial performance is measured using either accounting-based or market-based performance. Previous studies by Azim, Mei and Rahman (2019), Hult (2015), Hampsink (2020), Hult (2015) and Visch (2022) used both accounting-based and market-based performance measures to measure the financial success of a firm. These previous studies have found mixed results in the study of the relationship between executive compensation and financial performance. Different financial performance measures used in previous studies are the main reason for the inconsistencies in studies on executive compensation and financial performance (Bussin, Wöcke & Deysel., 2023).

2.3.4.1 Accounting-Based Measures

Accounting-based measures are the most popular means of measuring financial performance. Accounting-based indicators are the most accessible data; therefore, utilising them to assess business performance is justified (Hirschey & Wichern, 1984). However, accounting-based measures can be distorted by human error, accounting policies and inconsistencies in the accounting systems (Tshipa et al., 2018).

Other limitations of accounting-based measures include emphasising historic performance instead of future performance (Wagener, 2023). Firms should be able to get a holistic view of their past and future performance, which makes the accounting-based measures less effective in determining the overall performance of a firm (Wagener, 2023).

Accounting-based performance measures include Return on Assets, Return on Equity and Return on Capital Employed. According to Rutkowska-Ziarko (2022), Return on Assets, Return on Equity, and Return on Sales have all been used extensively to measure a firm's success. Nevertheless, this study utilises Return on Capital Employed (ROCE).

Return on Assets measures a firm's profitability in relation to its total assets (Velte, 2022). Baloch, Ahmed and Ali (2023) define Return on Assets as the book value of net income divided by the book value of total assets at the end of a financial year. Without considering whether the company financed an investment with debt or stock, analysts use Return on Assets to

evaluate a firm's operating success in relation to investments made (Rutkowska-Ziarko, 2022). Return on Assets measures how a firm effectively manages its assets to generate profits (Baloch et al., 2023). A higher Return on Assets indicates that management effectively and efficiently utilises its resources to generate profits.

The formula for Return on Assets is as follows:

$ROA = \frac{\text{Net Income}}{\text{Average Assets}} * 100\%$	or	$ROA = \frac{\text{Net Income}}{\text{End of Period Assets}} * 100\%$
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Saputra (2022) found that Return on Assets is an effective measure of financial performance since it eliminates size challenges, enabling management to compare against different companies. Return on Assets reflects year-to-year fluctuations based on past and current data, which reflects firm performance, unlike stock market rates, which include future returns. Many researchers and analysts have criticised using return on assets (Saputra, 2022).

Firstly, Return on Assets uses past data, which can provide inaccurate projections of future profitability (Baloch et al., 2023). Secondly, managers can easily manipulate Returns on Assets through changes in accounting policies and techniques (Saputra, 2022). Finally, Return on Assets does not consider non-financial performance and industry factors such as firm fluctuations, customer satisfaction and inflation (Mandipa & Sibindi, 2022).

The formula for Return on Equity is as follows:

$ROE = \frac{\text{Net Income (annual)}}{\text{Shareholders' Equity}} * 100\%$
--

Return on Equity is another accounting-based measure of firm performance. The primary goal of a firm is shareholder value maximisation. Therefore, Return on Equity measures the returns a firm generates for its shareholders from the money invested by its shareholders (Mandipa & Sibindi, 2022). Return on Equity measures management's ability to use the firm's equity to generate shareholder returns. It shows if management succeeded or failed in increasing investors' returns on their investment in the company (Rutkowska-Ziarko, 2022).

Return on Equity is arguably the most commonly used measure of a firm's financial performance since it reflects shareholder returns (Baloch et al., 2023). Return on Equity is a reliable measure of return to shareholders and represents whether shareholders should hold onto the investment. Return on Equity provides insight into how a firm's management uses shareholder capital to grow the firm. A comparison with the industry's Return on Equity reflects the firm's competitive advantage. Additionally, Return on Equity is easy to calculate, and shareholders can compare management's use of equity to generate returns relative to other investments. However, Khalifaturafi'ah (2023) found that Return on Equity was not a driver of

shareholder wealth and was not the most effective accounting-based performance measure. Furthermore, other researchers argue that Return on Equity is not the most effective measure of financial performance due to certain flaws.

The first flaw with Return on Equity is that managers can manipulate the indicators within the accepted accounting policies (Ardian, 2022). Secondly, in developing countries with weak accounting standards, Return on Equity might be inaccurate in measuring firm performance (Nwokoro, Ironkwe & Nwaiwu, 2022). Thirdly, Return on Equity does not account for long-term growth (Nwokoro et al., 2022). Fourthly, the timing of cashflows is not considered by Return on Equity (Nwokoro et al., 2022). Lastly, Return on Equity does not inform the shareholders whether the company is enhancing or depleting shareholder value (Nwokoro et al., 2022).

Return on Capital Employed (ROCE) is another accounting-based performance measure. ROCE gives creditors and potential investors insights into the firm's operations by evaluating the operational profit margin and how effectively management utilises capital to generate revenue (Shingade, Rastogi, Bhimavarapu & Chirputka, 2022). It assesses management's efficiency in achieving gross profit margins. Generally, a higher ROCE indicates a strong performance. However, it is essential to note that ROCE exclusively considers the income statement, overlooking crucial information from cash flow statements and balance sheets, which may limit its scope in evaluating managerial performance (Shingade et al., 2022).

The formula for ROCE is as follows:

$$\text{ROCE} = \frac{\text{Operating Profit}}{\text{Capital Employed}} \times 100\%$$

According to Nwokoro et al. (2022), accounting measures are visible measurements that serve as superior predictors of financial performance. Regularly available accounting data about a company's profitability makes it easier for investors to evaluate investment prospects. Investors might make business decisions to make money based on previous and current profitability (Ardian, 2022).

Based on previous long-term incentives and financial performance studies and similar to research by Hult (2015) and Visch (2020), this study uses Return on Capital Employed as an accounting-based measure. Furthermore, information required to calculate the Return on Capital Employed is readily available on company annual reports.

2.3.4.2 Market-Based Measures

Market-based performance measurements are distinguished by their forward-looking elements, representing shareholders' expectations for the company's future (Wahla, Shah. & Hussain, 2020). Market-based performance measures have gained popularity over the years

due to their holistic view of firm performance. Investors have been advised to use market indications when making decisions due to firm managers' growing distrust of accounting data (Ali, Murtaza, Hedvicakova & Jiang, 2022).

Firms increasingly compensate managers based on market indicators that maximise shareholder value (Ali et al., 2022). The foundational tenet of market measures is market efficiency, which interprets stock price as a proxy for a firm's intrinsic worth. It assists shareholders in determining if their investments are worth holding into the foreseeable future. The market-value data offer strong arguments and insightful viewpoints on the origins of profitability (Almashhadani & Almashhadani, 2022).

Unlike accounting measurements, which are confined to only one component of performance, market-based performance metrics consider all pertinent information (Mandipa & Sibindi, 2022). Market-based performance measures are more accurate than accounting-based measures since they focus on the present value of future inflows. Accounting-based performance measures focus on past data, which might not give a holistic view of financial performance.

Market-based performance measures include Tobin's Q, Market-to-Book Ratio and Price to Earnings Ratio. Previous researchers have hardly used stock price as a market-based performance measure. Diqi, Hiswati and Nur (2022) state that stock prices may predict financial performance accurately. When the capital market is fully formed, Cumming, Meoli and Vismara (2019) emphasise that stock prices must represent the actual worth of the company to be used as a performance metric.

Tobin's Q is the most popular market-based performance measure for a firm's financial performance (Tobin, 1969). Tobin (1969:22) defines Tobin's Q as "the ratio of the market value of company assets to their replacement cost." Tobin (1969) suggests that the combined market value of a company should be equal to the replacement value of the company.

The formula for Tobin's Q is as follows:

$$\text{Tobin's Q} = (\text{Market value of assets} / \text{Replacement value of assets})$$

A Tobin's Q of less than 1 indicates that a stock is undervalued, whilst a Tobin's Q of more than 1 indicates that a stock is overvalued (Bhargave & Tandon, 2023). Tobin's Q measures the effectiveness of a company's management in using its assets to generate shareholder value. Tobin's Q is an excellent indicator of financial performance. The idea of Tobin's Q is quite appealing intuitively and has plenty of theoretical and practical value (Bhargave & Tandon, 2023; Cardao-Pito, 2022). The market is not always efficient in reality. Thus, the

premise that the price represents all knowledge at any moment is unsupported by the assumption of asymmetric information (Verona, 2020).

Although Tobin's Q is a acknowledged indicator of financial performance, it has come under heavy criticism. Firstly, regarding computing effort and data requirements, Tobin's Q is excessively costly (Verona, 2020). It follows from this that a related objection is that the accounting variables used in its computation were created using historical cost accounting. Secondly, it is prone to managerial manipulation due to its dependence on accounting variables. Lastly, Tobin's Q modifies the replacement cost of assets, which is calculated using the book value as a close relative approximation (Bhargave & Tandon, 2023). This implies that the replacement cost is historical and not current, which leads to the implication that changes in Tobin's Q might be an inaccurate reflection of a firm's worth. Researchers propose employing additional complementary indicators, such as Price to Earnings (PE) and Market to Book (MB), to offset these drawbacks (Verona, 2020). In closing, Tobin's Q is not considered for this study.

The Price to Earnings ratio measures the market's confidence in the company's ability to generate profits (Bawa, 2017). The price-earnings ratio gives shareholders and investors insight into a firm's value and shows the market's expectations (Cardao-Pito, 2022).

The formula for Price to Earnings ratio is as follows:

$$PE = \text{Market Price per Share} / \text{Earning per Share}$$

Bawa (2019) suggests that it is clear from the Price to Earnings ratio equation that the Price to Earnings ratio and predicted growth rate have a positive relationship. In contrast, the stock's rate of return has an inverse association.

However, Verona (2020) found that Market-to-Book ratios impacts future profitability and were adequate indications of profit growth. Price-to-earnings ratios affect present return on equity but are poor indicators of future growth. Bawa (2019) suggests that as the ratio rises, so do market expectations for future profitability and earnings potential. However, Ghaeli (2016) found that long-term stock returns are better for companies on the stock market with low Price to Earnings ratios than for high-growth companies with high Price to Earnings ratios. Therefore, there are contradictory findings on the relationship between the Price to Earnings ratio and stock returns (Ghaeli, 2016). To end this, Price to Earnings ratios are not considered for this study.

The Market-to-Book based performance measure is used to determine financial performance (Conyon, 2020). The Market-to-Book measure is a particularly effective indicator of performance because it reveals the premium or confidence that the market places on the

company and, as a result, indicates how well the market perceives the firm to be managed (Mans-Kemp & Van der Lugt, 2020). The theoretical justification for utilising the Market-to-Book ratio as a performance indicator comes from considering historical accounting and forward-looking market indications of business success (Conyon, 2020).

The formula for the Market-to-Book ratio is as follows:

$MB = \frac{\text{Market Capitalization}}{\text{Net Book Value}}$	or	$MB = \frac{\text{Share price}}{\text{Net Book Value per Share}}$
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Mans-Kemp and Van der Lugt (2020) suggest that the balance sheet's "book value" is the amount that would remain after the firm sold its assets and settled all its debts. Investors frequently use the Market-to-Book ratio to indicate how the market views a given stock's worth; however, it is ineffective for businesses with a high proportion of intangible assets (Conyon, 2020).

However, the Market-to-Book ratio has received criticism like any other financial performance measure. Firstly, since the Market-to-Book ratio uses accounting and market value indicators, it is prone to manipulations and errors in accounting measures (Blessing & Promise, 2023). Secondly, in developing countries with weak accounting standards, the book value might need to be more accurate in measuring firm performance (Verma & Sharma, 2022). Thirdly, due to information asymmetry between the firm's management and shareholders, a company's stock price typically does not represent its underlying value (Blessing & Promise, 2023). Lastly, it is said that the market's significant stock price volatility casts doubt on the market information's effectiveness, at least in the near term (Blessing & Promise, 2023). To end this, the Market-to-Book proxy is not considered for this study.

2.4 EMPIRICAL REVIEW OF LONG-TERM INCENTIVES AND FINANCIAL PERFORMANCE

2.4.1 INFLUENCE OF STOCK OPTIONS ON THE FINANCIAL PERFORMANCE

Based on the findings of Velte (2022), compensation plans serve as tools to incentivise managers, primarily to align their interests with those of shareholders. As previously mentioned, these compensation policies play a crucial role in shaping the slope and convexity of managers' wealth (Rahi, Akter & Johansson, 2021). Previous research has demonstrated that when managers' wealth becomes intertwined with firm performance, it can incentivise risk-taking behaviour. However, for risk-averse investors, investing in high-risk projects may become considerably less appealing if their personal wealth is directly linked to the firm's

performance (Velte, Stawinoga & Lueg, 2020). Stock options, as a form of compensation, provide a means to establish this relationship between managerial wealth and firm performance. One noteworthy implication of utilising stock options as compensation is that options feature convex payoff structures. In contrast to direct stock ownership, where the relationship is linear, option payoff schemes exhibit a non-linear dependence on stock returns (Velte, 2023).

Stock Options and Stock

Compensation plans play a crucial role in shaping managerial incentives, primarily aimed at aligning the interests of managers with those of shareholders (Anton & Nucu, 2020). As previously discussed, these compensation policies are instrumental in managing the slope and curvature of managerial wealth. Existing research has demonstrated that when managers' wealth becomes contingent on firm performance, it can incentivise risk-taking behaviour (Kriel, Milford, Cordero & Suleman, 2019). However, for investors with a risk-averse disposition, their willingness to engage in high-risk projects may significantly diminish when their personal wealth is directly tied to the company's performance (Baba & Bilgehan, 2021). According to Shabbir and Wisdom (2020), stock options serve as a mechanism to establish this link between managerial wealth and firm performance. An important implication of using stock options as a compensation method lies in the non-linear, convex payoff structure associated with options, in contrast to the linear relationship found in stock ownership (Yu, Jacobs, Chavez & Yang, 2019).

The distinction between stock ownership and stock options, or the slope and convexity of the wealth-performance relationship, can be clarified through the following illustration, and as depicted in Figure 2.2. As of December 31, 2020, the CEO of Company X held 78,000 shares of stock valued at R187,200 and 74,400 stock options with an approximate value of R138,240. In contrast, the CEO of Company Y possessed 50,400 shares of stock valued at R132,000 and 220,800 stock options worth approximately R1,860,000. By utilising the Black & Scholes (1973) formula, we can calculate the increase in the CEOs' security value for a 5% increase in the firm's stock price, revealing that both CEOs' wealth would rise by R42,000. The slope of the wealth-performance relationship is identical for both CEOs. However, regarding a 5-percentage point increase in annual volatility, the value of CEO X's securities would surge by approximately R252,000, while CEO Y's would increase by only R78,000. Consequently, compensation packages with stock options induce considerably stronger risk-taking incentives among managers.

Returning to the agency theory, it is argued that stock-based compensation incentivises managers to invest in projects that maximise shareholder value, making them less risk-averse (Aalbers et al., 2023). However, according to Padhan and Prabheesh (2021), this perspective overlooks the significance of downside risk, which cannot be underestimated. Research by Gupta, Shankar, Lai and Kumar (2023) has shown that, in the decision-making process, a decision-maker's aversion to risk is influenced not only by potential gains but also by potential losses. As mentioned, stock options are associated solely with upside potential and lack any consideration for downside risk. Therefore, it can be contended that option-based compensation may lead to a propensity for risk-seeking behaviour (Bussin et al., 2023).

Prior research has yielded substantial empirical and theoretical insights into the influence of compensation structures on managerial behaviour. Jensen and Meckling (2018) have identified the importance of aligning manager wealth with company performance to mitigate agency conflicts. Subsequent studies by Aggarwal and Samwick (2020), Chen and Hassan (2022), Githaiga, Muturi-Kabete and Caroline-Bon, (2022) and Holderness (2022) explored the relationship between firm characteristics and compensation schemes. Chen and Hassan (2022) notably investigated CEO wealth determinants. They found that stock options significantly increased CEO sensitivity to equity risk regarding wealth, aligning with the incentive for managers to engage in riskier projects when the potential losses from avoiding such projects are substantial (Adedeji et al., 2020). Other studies have scrutinised the link between various compensation schemes and firm performance, positing that compensation should be linked to managerial behaviour and, consequently, company performance.

In the early 21st century, research increasingly focused on the direct association between managerial incentives and corporate policies, such as risk-taking. It was intuitively argued that executive compensation should exhibit convexity to mitigate risk aversion and encourage greater risk appetite. While stock options were seen as fostering risk-taking due to their one-sided upside potential, Githaiga et al. (2022) found that the magnitude of risk-taking depended on factors like risk aversion and underlying investment technology, suggesting that stock option compensation might not always lead to increased risk-taking. Moreover, Aggarwal and Samwick (2020) contend that in-the-money options could discourage risk-taking. Holderness (2022) conducted prior studies indicating a robust causal link between managerial compensation structures and investment and debt policies for firms in different market segments, while Rajgopal, Shevlin and Venkatachalam (2018) explored executive stock option compensation and its influence on investment in risky projects, revealing a positive relationship with future risk-taking. Further empirical investigations aimed to elucidate the connection between option holdings and firm financial policies. Researchers such as Berger

and Humphrey (2017), Cohen, Hall and Viceira (2020), and Rogers (2018) examined the relationship between stock option holdings and company leverage, repurchases and derivative usage, revealing differences in CEO incentives between stock and stock option compensation. Unlike stock ownership, options exhibited asymmetric risk effects by not bearing the downside potential. Recent studies commonly employed measures like Vega and Delta to assess firm policy relationships and CEO wealth sensitivity to stock return volatility (Berger & Humphrey, 2017; Cohen et al., 2020; Rogers, 2018)

2.4.2 EFFECTS OF CASH BONUSES ON FINANCIAL PERFORMANCE

The impact of cash bonuses on the financial performance of companies has been the subject of extensive research, with scholars aiming to understand the relationship between bonus structures and firms' overall success (Lovett, Rasheed & Hou, 2022). Several studies have explored this topic from various angles, shedding light on the effects of cash bonuses on financial performance.

One key aspect of the literature on cash bonuses and financial performance is the role of incentive alignment. Researchers have argued that cash bonuses can effectively align the interests of executives with those of shareholders. When executives receive bonuses based on performance metrics tied to the company's financial health and profitability, they have a stronger incentive to make decisions that benefit shareholders. Studies by Dechow, Hutton and Sloan (2019) and Ittner, Larcker and Rajan (2017) found that cash bonuses linked to financial performance metrics positively impact a company's economic outcomes.

Another dimension explored in the literature is the impact of bonus size and structure. While cash bonuses are meant to motivate executives to enhance financial performance, the magnitude and structure of these bonuses can vary significantly. Studies by Kartadjudena and Rodgers (2019) and Meslec, Curseu Fodor, and Kenda (2020) have highlighted that the size and structure of bonuses can affect managerial behaviour. More significant bonuses may encourage more aggressive risk-taking behaviour, which can impact financial performance positively or negatively, depending on the context.

Furthermore, researchers have examined the timing of cash bonuses and its effect on financial performance. Some studies, such as those by Baker and Michael (2018) and Chakroun, Salhi, Ben-Amar and Jarboui, (2020), have found that the timing of bonuses can influence managerial decision-making. Bonuses awarded at year-end may encourage a short-term focus. At the same time, those distributed over a more extended period could promote a

longer-term perspective and potentially lead to better financial performance (Garel & Petit-Romec, 2021).

Additionally, the literature has investigated the impact of cash bonuses on specific financial metrics, such as return on assets (ROA) and return on equity (ROE). Study by Ittner et al. (2019) have shown that cash bonuses tied to these metrics can positively affect a company's financial performance.

2.5 EMPIRICAL EVIDENCE OF LONG-TERM INCENTIVES AND FINANCIAL PERFORMANCE

This study investigates the relationship between long-term incentives and financial performance. For decades, this subject has received extensive international study. However, there is still uncertainty about the many outcomes. Over time, researchers found mixed results on the topics. Different researchers found a positive, negative and no relationship between long-term incentives and financial performance. Additionally, the COVID-19 pandemic has increased the significance of this topic.

2.5.1 POSITIVE RELATIONSHIP BETWEEN LONG-TERM INCENTIVES AND FINANCIAL PERFORMANCE

Several studies have focused on the relationship between executive compensation and financial performance. Some have found a positive relationship. For instance, Hampsink (2020) examined the relationship between CEO variable pay and firm performance between 2012 and 2016 in Dutch-listed firms. Hampsink (2020) found a positive relationship between CEO variable pay and firm performance in Dutch-listed firms. The study consisted of a sizable sample of 106 firms and was conducted over seven financial periods, increasing the findings' reliability. Dela-Cruz (2016) states that more extensive research produces more robust and trustworthy results because they have narrower error margins and lower standard deviations. Hampsink (2020) focused on Total CEO compensation instead of one element of CEO compensation, such as guaranteed pay and short-term or long-term incentives, prompting further studies on a component of CEO compensation.

Hult (2015) found a positive relationship between long-term incentives and firm performance. Hult (2015) further states that the impact is more measurable in medium and small-sized firms relative to large firms in Swedish-listed firms. The study focused on the relationship between long-term incentives and changes in EBIDTA since EBIDTA provided long-term value creation. However, there has been some criticism of using EBIDTA to measure financial

performance. Fisher (2017) states that the EBIDTA makes a company's balance heavier. He further states that EBIDTA does not adhere to GAAP principles, which might lead to inconsistencies in financial reporting. Additionally, Hult's (2015) study focused on one financial measure of performance instead of the market and financial-based measures. The findings show limited tests on dependent variables, limiting the accuracy of the results on the relationship between long-term incentives and firm performance.

A recent study by Zhandi et al. (2019) found a strong positive relationship between CEO compensation, Returns on Assets and Returns on Equity. Zhandi et al. (2019) examined non-financial companies listed on Bursa Malaysia over five economic periods between 2011 and 2016. Zhandi et al. (2019) sampled 96 listed companies, which increased the reliability of the study due to the large sample size. However, the study did not examine market-based measures of performance. This leaves a research gap in executive compensation and financial performance.

A limited number of studies on the relationship between executive compensation and financial performance were conducted during the COVID-19 pandemic. However, a study by Visch (2022) found a positive relationship between executive compensation and Return on Equity in Dutch-listed firms. The study focused on data from 2018, 2019, 2020 and 2021. The study indicates the relationship between long-term incentives and firm performance before and during the COVID-19 pandemic.

However, the study examined the impact of executive compensation's short-term effects while ignoring the long-term effects of executive compensation on firm performance. The study creates a gap for further research on the relationship between long-term compensation and financial performance; hence the motivation for this study.

2.5.2 NEGATIVE RELATIONSHIP BETWEEN LONG-TERM INCENTIVES AND FINANCIAL PERFORMANCE

Contrary to the section above, several studies have discovered a negative relationship between executive compensation and firm performance. For instance, Tariq (2010) found a statistically insignificant and negative relationship between long-term incentives and financial performance in Swedish-listed firms. This contradicts Hult's (2015) findings, which found a positive relationship between long-term incentives and financial performance. Tariq (2010) found a negative relationship between long-term incentives and Return on Equity. However, Tariq (2010) focused on one measure of financial performance. This can raise concerns about the reliability of the financial performance findings.

Moreover, a study by Visch (2022) examined the relationship between executive compensation and financial performance. Visch (2022) found that total executive compensation negatively correlates with Tobin's Q in crisis times. Visch (2022) found no significant relationship between executive compensation and firm performance in crisis times. Visch (2022) studied the relationship between executive compensation and firm performance in Dutch-listed firms in 2018, 2019, 2020 and 2021. Therefore, the study focused on crisis and non-crisis times, which might contradict the findings due to mixed periods. Visch (2022) found contradictory results since he found a positive relationship between long-term incentives and return on equity. These findings contrasted with the findings between executive compensation and Tobin's Q, which were negatively correlated.

The various studies do not indicate the causes of the negative relationship between long-term incentives and financial performance. However, an executive who receives too much equity in long-term incentives risks damage. According to Kim and Lu (2016), the executive becomes unwilling to take risks.

The literature review on the study between long-term incentives and financial performance indicates few studies that found a negative relationship between the two variables. However, certain studies found a negative relationship between long-term incentives and financial performance.

2.5.3 NO RELATIONSHIP BETWEEN LONG-TERM INCENTIVES AND FINANCIAL PERFORMANCE

Several studies examined the relationship between long-term incentives and financial performance, where no relationship was found between the two variables. Nieman (2018) found no relationship between long-term incentives and financial performance in FTSE100-listed firms. Nieman (2018) examined the relationship between long-term incentives, Return on Assets, Return on Equity and Return on Stocks. Nieman (2018) concluded that no evidence showed that higher executive compensation results in better financial performance.

Furthermore, Weender (2019) studied the relationship between CEO compensation and financial performance of Dutch-listed firms between 2014 and 2016. The study found no statistical relationship between CEO compensation and financial performance. Weender (2019) examined the relationship between CEO compensation, Return on Assets and Sales and Tobin's Q. However, the study revealed several findings between the variables, which were not robust (Weender, 2019).

Most studies conducted on the topic of executive compensation and financial performance found that a relationship exists between the two variables. The two studies that found no relationship questioned the relationship's robustness, raising questions about the validity of these findings.

2.6 CONCEPTUAL FRAMEWORK UNDERPINNING THE THEORETICAL FRAMEWORK

Hennart (2019) defined a conceptual framework as a set of interconnected ideas, concepts and theories that provide a structured approach to understanding a particular phenomenon or problem. It is a tool used in research to provide a framework for formulating research questions, interpreting data, and the development of theories or hypotheses. When the conceptual framework has been clearly articulated, it becomes a potentially useful tool to assist the researcher in making meaningful and subsequent findings (Adam & Kamuzora, 2018). The conceptual framework forms parts of the agenda for negotiations to be scrutinised and tested, thereby reviewing performed results from the investigation (Guba & Lincoln, 1989). A critical aspect of the conceptual framework is that it helps the researcher use research variables and their logical relations, often presented in diagrammatic forms, graphs, charts, flow charts and even mathematical equations.

Therefore, this study intended to assess the influence of long-term incentives on the financial performance of a Real Estate Investment Trust listed on the Johannesburg Stock Exchange. From the theoretical framework and literature review, this study has identified several factors that can potentially influence the flow of financial performance. These variables and other control variables have been included in the conceptual framework as shown in Figure 2.3 below:

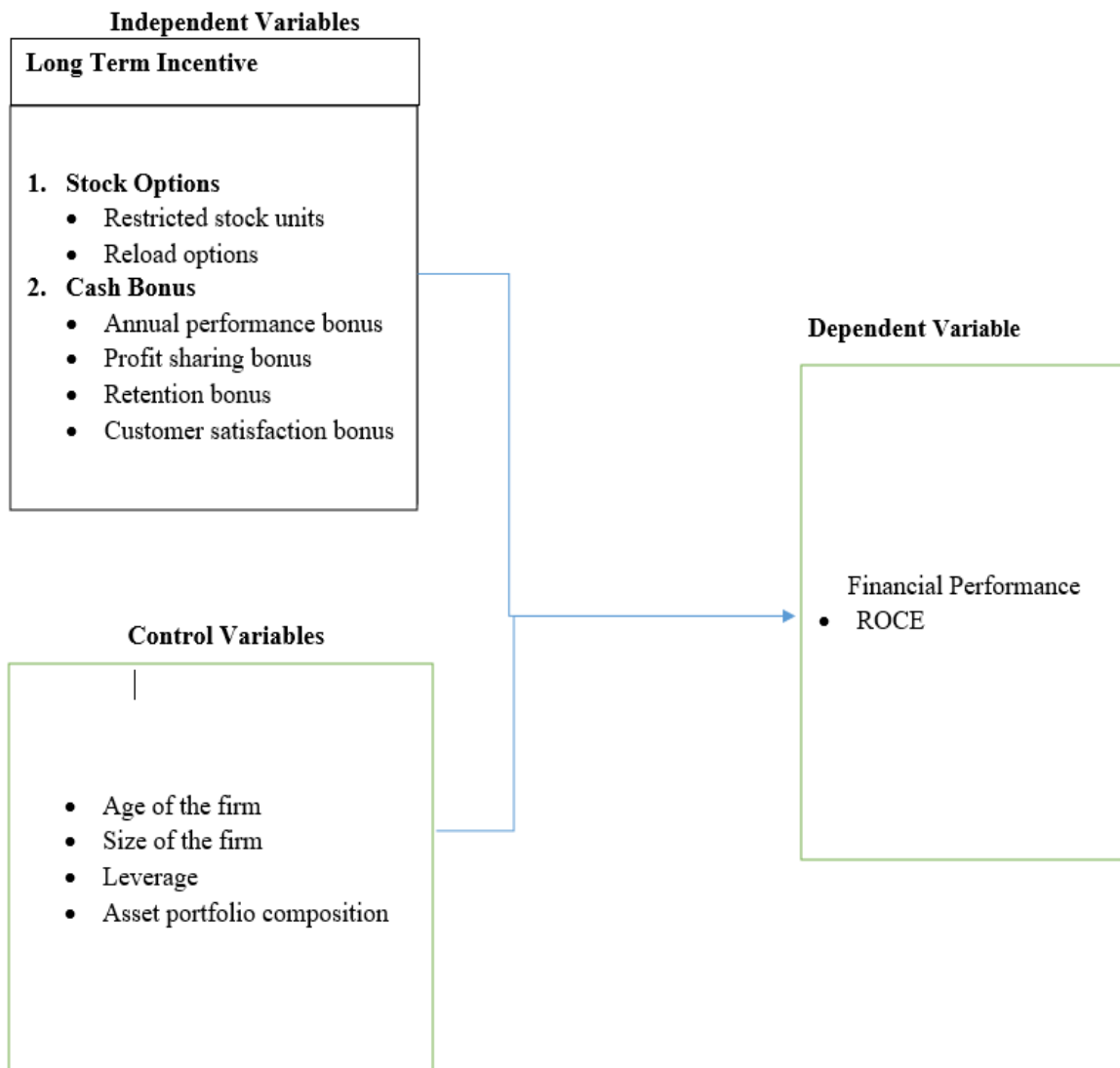


Figure 2.2: Conceptual Framework

Source: Author's Own Design (2023)

Dependent Variable: Financial Performance (ROCE)

ROCE (Return on Capital Employed) is the chosen variable because it provides a comprehensive measure of a company's profitability and efficiency in utilising its capital resources (Suhendro, 2022).

Independent Variables:

1. Stock Options

- **Restricted Stock Options:** This variable represents the granting of company shares to executives with restrictions on their sale or transfer for a specified period. It incentivises long-term commitment and performance improvement (Lovett, Rasheed & Hou, 2022).
- **Reload Options:** This variable involves granting additional stock options when certain conditions are met, allowing executives to replenish their stock options. This is a retention and motivation tool (Lovett et al., 2022).

2. Cash Bonus

- **Annual Performance Bonus:** This variable represents the annual cash bonus for achieving specific performance targets. It aims to motivate executives to achieve short-term goals (Cumming, Meoli & Vismara, 2019).
- **Profit-Sharing Bonus:** This variable reflects the distribution of a portion of the company's profits among executives, encouraging them to work towards overall profitability (Cumming et al., 2019).
- **Retention Bonus:** This variable incentivises executives to stay with the company for a specified period and is often used to retain key talent (Cumming et al., 2019).
- **Customer Satisfaction Bonus:** This variable ties bonuses to customer satisfaction metrics, aligning executive efforts with customer-centric goals (Cumming et al., 2019).

3. Control Variables

Control variables are intentionally held constant to separate the influence of a specific variable under investigation. This study's control variables encompass the firm's age (REIT), size (REIT), leverage and asset portfolio composition. Incorporating these controls enabled this study to better understand the relationship between LTI and the financial performance within REITs registered with JSE.

- **Age of the firm:** According to Jahmane and Gaies (2020), the firm's age refers to the number of years since the establishment or incorporation of a particular company. It measures the company's operational history and tenure in the business environment. It concerns issues like the length of time a company has existed, which may influence various aspects of its performance, strategies and behaviour. For example, the firm's age can be relevant in understanding factors such as its stability, experience, adaptability to market changes and potential impacts on financial outcomes (Jahmane & Gaies, 2020).

- **Leverage:** Leverage, as applied in financial terms, refers to using various financial instruments or borrowed capital to increase the potential return on investment (Towo, 2023). It involves using borrowed funds to amplify an investment's potential profit or loss. Leverage is often expressed as a ratio representing the proportion of debt finance as an asset. While leverage can enhance returns when investments perform well, it also magnifies losses when they do not. Common forms of leverage include loans, margin trading and financial derivatives and it is widely utilised in various financial contexts, such as real estate, trading and corporate finance (Towo, 2023).
- **Asset Portfolio Composition:** According to Orichom and Omeke (2021), this refers to the breakdown or distribution of a firm's assets across different categories or classes. In the context of investment and finance, an organisation's assets can include various types, such as stocks, bonds, real estate and other financial instruments offered on the JSE. The composition of the asset portfolio reflects the allocation of resources and investments in different asset classes. Management makes strategic decisions to balance risk and return, considering factors like market conditions, economic trends and the organisation's financial goals (Orichom & Omeke, 2021). The purpose of managing asset portfolio composition is to optimise the overall performance and achieve a desirable risk-return profile for the organisation's investments (Bawa, 2019).

The conceptual framework posits that these independent variables collectively influence the Financial Performance (ROCE) of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange. The presence and structure of stock options and cash bonuses are expected to impact the executives' behaviour and decisions, affecting the REITs' financial performance.

2.7 SUMMARY

This chapter presented the theoretical literature review, empirical review of literature and conceptual framework underpinning the theoretical framework. The next chapter focuses on the research methodology.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter describes the methodology and the analytical framework used in this study. It defines the research design, the data used in this study, and how it is collected and analysed. It also explains the variables and how they are used in the study. It describes the empirical model, analysis and diagnostic approaches to meet the study's objectives. It also explains the ethics and limitations of this study.

3.2 RESEARCH DESIGN

Kothari (2004) defines research design as a master plan that specifies methods and procedures for collecting and analysing the needed information. According to Creswell and Poth (2018), the research design is a plan and structure of investigation conceived to obtain answers to research questions and test the hypothesis. Since the study's key variables include stock options, cash bonuses and financial performance (ROCE), which are measurable in quantitative terms, the study adopts a positivist or positivistic worldview, which assumes that reality is objective and can be measured and studied using quantitative methods (Saunders, Philip & Thornhill, 2019). Positivism aligns with the idea that these variables can be precisely measured and analysed through quantitative methods, making it the most suitable philosophical approach (Armstrong, Kotler, Saunders & Wong, 2014).

The study is deductive and explanatory because the research commences with a theoretical framework proposing a relationship between long-term incentives and financial performance, specifically ROCE, within the Real Estate Investment Trust (REITs) context (Rezigalla, 2020). The study aims to substantiate these theoretical propositions by conducting data analysis. Simultaneously, it strives to elucidate the mechanisms at play and the fundamental factors that underlie the observed phenomena, delving into the intricacies of how long-term incentives impact financial performance (Adam & Kamuzora, 2018).

This study employs statistical methods, specifically fixed effect and random effect models, to analyse the panel data collected from Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange (Sileyew, 2019). The panel data combines cross-sectional information from different REITs with time-series data spanning multiple years. While panel data offers a richer dataset for analysis, it introduces complexities, including temporal

correlation specific to each REIT (Edmans, Gabaix & Jenter, 2017). Fixed and random effect models have been chosen to address these complexities and control for within-group correlation, ensuring a robust analysis of the REITs' financial performance in relation to long-term incentives (Newman & Gough, 2020). Further, descriptive statistics are used to understand the trends and behaviour of some variables in the listed Real Estate Investments Trust. Cohen et al. (2020) argues that the quantitative approach is used to attain excellent knowledge, research understanding and accuracy of the findings. Therefore, a quantitative method is employed for this study.

3.2 DATA COLLECTION

Similar to the study of Blessing and Promise (2023), this research also employs a secondary data collection approach, utilising data collected from the publications of financial statements on the IRESS database, similar to a study by Blázquez-García, Conde, Mori and Lozan (2021). Specifically, the study focused on 37 Real Estate Companies listed on the Johannesburg Stock Exchange (JSE) in South Africa from 2018 to 2022. Panel data, a combination of time series and cross-sectional data, is harnessed to enable a detailed examination of the dynamics over time for each company within the dataset (Anton & Nucu, 2020). One of the main advantages of panel data is its enhanced ability to analyse changes and trends over time, providing insights into how variables evolve and interact, which cross-sectional data or time-series data alone cannot fully capture (Blázquez et al., 2021).

The data for this study is obtained from the reputable IRESS database, renowned for its extensive financial and market-related information (Robbetze & Swanepoel, 2022). The dataset encompasses the period from 2018 to 2022, providing a substantial timeframe for assessing the relationship between LTIs, such as stock options (including restricted stock options and reload options), cash bonuses and the financial performance of the selected Real Estate Companies (Schaffer, Dobbins & Pearson, 2021). The primary focus is establishing the relationship between LTI and financial performance using the Return on Capital Employed (ROCE) metric.

3.3 SAMPLING STRATEGY

A sample depicts a population's characteristics (Collis & Hussey, 2014). To perform an in-depth study, researchers might choose individuals from a population in an organised way through sampling (Collis and Hussey, 2009). This study's sample is derived from the target population of JSE-listed REITs.

According to the Johannesburg Stock Exchange (2022), there are 37 property companies listed as Real Estate Investment Trusts (REITs) on the Johannesburg Stock Exchange (JSE) as of 2022. Therefore, the targeted population is represented by 37 property companies listed on the JSE.

One of the prerequisites for sampling is that the company should be listed as a REIT on the JSE without delisting for a period between 2018 and 2022. The following sampling criteria are used for this study:

- The companies should be listed as REITs on the JSE for at least five consecutive years (2018, 2019, 2020, 2021 and 2022) (Burns & Epley, 2022).
- Availability of complete sets of annual reports from 2018 to 2022 on company websites and the IRESS database (Burns & Epley, 2022)
- The companies offer long-term incentives (stock options and cash bonuses) to their executives (Burns & Epley, 2022)

The sampling criteria ensured that sampled companies had the secondary data required for this study. The selection criteria cover a period between 2018 and 2022 to get an in-depth view of three economic periods: pre-, during and after COVID-19. The period ends in 2022 since 2023 annual reports for certain REITs were unavailable during data collection. The sample for the study is 22 JSE-listed REITs who met the requirements of the sampling criteria. Table 3.1 below depicts the sampling.

Table 3.1 Study Sample

INDUSTRY	SELECTION CRITERIA	PANEL (REITs)	SAMPLE PERCENTAGE(%)
Real Estate	Total number of REITs listed on JSE (24 October 2023)	37	100
	Less		
	Inactive companies	5	
	Companies with more than one year of data missing	2	
	Companies that do not offer LTI (Cash & Stock Options)	8	40.50
	Total Companies excluded	15	
	Final Sample Selected	22	59.50

Source: JSE REITs Listing (2023)

The study is also prone to survivorship bias. Survivorship bias, also known as survivor bias, is a cognitive error in which you ignore a group (including the "non-survivors") in favour of focusing exclusively on instances of successful people (the "survivors") in the selection process (MasterClass, 2022). As stated in the table above, the study circumvents sampling bias by including all REITs listed on the JSE as part of the population.

3.4 DEFINITION OF VARIABLES

The study has several variables that are used to meet the study's objectives. In simple terms, a variable is anything which can change. In statistical analyses, a variable is defined as an attribute of an object in the study (Mugenda & Mugenda, 2014). This research has independent variables and dependent variables.

3.4.1 DEPENDENT VARIABLE

The dependent variable, often referred to as the response or outcome variable, is the variable that changes in response to manipulations of the independent variables within a study (Saunders et al., 2009). In this research, the dependent variable under investigation is financial performance. The study aims to ascertain whether the financial performance of companies listed on the Johannesburg Stock Exchange is influenced by factors related to long-term incentives. To quantify this, the study employs the Return on Capital Employed (ROCE) metric, which measures the profitability and efficiency of these companies (Shrotriya, 2019).

Similar to Martínez-Ferrero and Frias-Aceituno (2022), whose study explored the relationship between long-term incentives and financial performance, this study uses ROCE to measure financial performance. Furthermore, this study takes a cue from the study of Kirsten and Du Toit (2018), which used ROCE as a performance proxy to explore the relationship between directors' emoluments and the financial performance of companies listed on the Johannesburg Stock Exchange.

Data for the ROCE was collected from 2018 to 2022 for each Real Estate Investment Trust, providing a comprehensive assessment of financial performance. ROCE helped identify whether the REITs create value for their investors and whether long-term incentives, such as stock options and cash bonuses, positively impact this critical financial metric (Mpofu et al., 2023).

3.4.2 INDEPENDENT VARIABLES

In the context of this study, independent variables are those variables that are believed to wield an influence or demonstrate a causal relationship with the dependent variable, following

the definition provided by Saunders et al. (2009). Within the scope of this research, the independent variables under scrutiny, which is LTI, comprise stock options and cash bonuses originating from Real Estate Investment Trusts (REITs) publicly listed on the Johannesburg Stock Exchange. These variables are integral components of the broader category known as Long-Term Incentives (LTI). The primary objective is to subject these independent variables to rigorous examination to assess their impact on the financial performance of each REIT that forms part of the Johannesburg Stock Exchange (Lovett et al., 2022). This analysis seeks to uncover whether stock options and cash bonuses, as constituents of LTI, play a discernible role in shaping the financial performance outcomes of REITs within the Johannesburg Stock Exchange (Aggarwal & Samwick, 2020).

Stock Options

The stock options issued to executive directors are streamlined to contribute to the financial performance of REITs. Similar to the studies of Tripathi, Kashiramka and Jain (2018), which used the stock option as an independent variable, this variable is expected to positively impact the financial performance of REITs listed on the Johannesburg Stock Exchange (Ntim, Lindop, Thomas, & Abdou, 2019). The variable is measured based on the average score of stock options granted to executives, which considers the effectiveness and efficiency of integrating stock options within the REIT compensation structures cited (Aggarwal & Samwick, 2020). The score is obtained from comprehensive assessments and reports on stock option utilisation within the real estate industry, with a scoring range from 0 to 100, where 0 indicates minimal integration and 100 signifies optimal integration, resulting in enhanced financial performance (Aggarwal & Samwick, 2020).

Cash Bonuses

As a component of the LTI, cash bonuses play a significant role in a company's financial performance as they motivate executive directors, according to Van-Wyk and Wesson (2021). The study aims to investigate whether the provision of cash bonuses in REITs influences financial performance, with an anticipated positive effect. Cash bonuses are assessed using established business metrics, incorporating factors like ease, time, and total costs associated with awarding bonuses, providing a comprehensive measure of regulatory compliance. Scores are assigned on a scale from 0 to 100, signifying the spectrum from the least favourable to the most favourable financial performance (Hampsink, 2020). These are sourced from various financial reports, ensuring a robust evaluation of the impact of cash bonuses on the financial performance of the respective countries.

Control Variables

These variables exert an influence on the dependent variable. However, the study did not focus on them. They were regulated to ensure that their influence on the findings and analysis of the study was minimised. The variables being controlled in this research include the firm's age, leverage, and asset portfolio composition.

Similar to studies conducted by Abdi, Li and Càmarà-Turull (2022) and Coad, Holm, Krafft and Quattraro (2018), this study identified firm age, often measured in years since establishment, as a crucial component as it can influence various aspects of a company's operations and performance. Older firms may possess accumulated experience, established reputations and more extensive networks, potentially impacting their financial performance differently than younger counterparts. By incorporating firm age as a control variable, this study aimed to account for these potential effects and enhance the robustness of its findings.

Ramzan, Amin, and Abbas (2021) and Nasution (2021) identify leverage as a significant variable in the financial performance of an organisation. Leverage, often measured as the ratio of a company's debt to its equity, is pivotal in shaping a firm's financial structure and risk profile. Understanding the impact of leverage is crucial as it can influence a company's ability to undertake investments, manage financial obligations and navigate economic fluctuations. By including leverage as a control variable, this study seeks to discern its potential effects on the relationship between stock options, cash bonuses and the financial performance of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange.

Asset portfolio composition, akin to the approach employed in studies by Ngumo, Collins and David (2020), is recognised as the composition of a firm's asset portfolio, encompassing the distribution of assets across various categories such as equities, bonds and real estate. It can significantly influence the firm's risk exposure and financial performance. They examined how the asset portfolio composition affects a company's financial performance. Their studies found that the company's asset composition positively influences its financial performance. Incorporating asset portfolio composition as a control variable enables a better understanding of its potential impact on the relationship between long-term incentives and financial performance for REITs listed on the Johannesburg Stock Exchange.

3.5 EMPIRICAL MODEL

The empirical model offers insight into the anticipated connection between the independent and dependent variables (Iwana & Uchida, 2021). The underlying concept is that by observing a specific outcome resulting from particular circumstances, the study can establish a dependable basis for predicting similar outcomes in the future. The study estimates the panel

regression for 22 companies from 2018 to 2022. This study uses the following regression model:

$$Y_{it} = \alpha_i + \beta X_{it} + u_{it}$$

(1) where Y_{it} is the net ROCE, α represents the intercept, X represents the explanatory variables vector, and β is a vector of corresponding slope coefficients. In contrast, it represents the error term (De-Brouwer, Simm, Arany & Moreau, 2019). Since the panel data combines time series and cross-sectional dimensions, each variable has i cross-section and t for time series.

X_1 = Stock options in Company i and in year t

X_2 = Cash Bonus in Company i and in year t

The panel data regression analysis uses two models: Fixed Effect Model (FEM) and Random Effect Model (REM) (Amaliah, Darnah & Sifriyan, 2020). Incorporating both models allows the study to comprehensively analyse the relationship between long-term incentives (stock options and cash bonuses) and ROCE in the REITs while addressing potential issues related to heterogeneity and correlation within the dataset. This approach increases the reliability and robustness of the study's findings (Yusra & Mulfitia, 2019).

The fixed effect model is also known as the least squares dummy variables (LSDV) estimator because it includes the dummy variables for each group to allow for different constants for each group (Halder & Malikov, 2020). FEM regression vector notation becomes:

$$Y_{it} = D\alpha + \beta'X_{it} + u_{it} \quad (2)$$

Where the dummy variable is the one that enables the study to take different group-specific estimates for each constant for every section (Gebregziabher, Egede, Gilbert & Hunt, 2012). In contrast, the Random Effect Model (REM) assumes that the constants of each section are not fixed but have a random component, as indicated in Equation 3 below (Gebregziabher et al., 2012). Therefore, the variability of each section becomes:

$$\alpha_i = \alpha + v_i \quad (3)$$

where v_i is a random effect component with zero mean, and V_1 is the variance component which contributes a random effect to the variability of the dependent variable (Gebregziabher et al., 2012). This can be used to compare the relative size of different sources' variation in the data. The REM takes the following structure:

$$Y_{it} = \beta'X_{it} + V_i + u_{it} \quad (4)$$

The Hausman test determines which model is appropriate between the FEM and REM given panel data to use in this study.

3.6 ANALYSIS AND DIAGNOSTICS

Data analysis and diagnostics encompass examining, refining, converting and shaping data to derive valuable insights, forming conclusions and facilitating informed decision-making (Fleuren, Klausch, Zwager & Schoonmade, 2020). This undertaking may encompass diverse statistical and machine-learning methodologies to recognise trends, associations and irregularities within datasets. Data analysis and diagnostics aim to enhance decision-making processes and enable effective problem-solving by offering valuable insights into intricate datasets (Adam & Kamuzora, 2018).

Data diagnostics, specifically, refer to identifying and fixing data issues, such as errors, outliers, or missing values, to improve the accuracy and reliability of the data for analysis (Gebregziabher et al., 2012). This may involve cleaning, transforming, and pre-processing the data and conducting exploratory data analysis to understand the underlying structure and relationships within the data (Kothari, 2011).

3.6.1 ANALYSIS METHOD

This study employs an Expert Modeller in SPSS to estimate an appropriate ARIMA model based on the data for each index (Schaffer, Dobbins & Pearson, 2021). The process of identifying an appropriate model involves several sequential processes, which encompass appropriate transformation and differencing, identification of ARIMA patterns, estimation of the parameters, and diagnostic evaluation of the residuals using the Ljung-Box statistic. Based on the Expert Modeller procedure, suggested models are considered the best-fitted models for the data. For pattern detection, the correlograms of the ACF and PACF with a 95% confidence interval are used (Kaytez, 2020).

To test if the models fulfil the requirements of the third step of the Box-Jenkins methodology, the Ljung-Box statistic is used (Gebregziabher et al., 2012). The five percent significance level is used for the test, and the critical value is extracted from the chi-squared distribution table. After an appropriate model is located, an additional model with a worse fit is estimated for each index (Kaytez, 2020). The estimated ARIMA model is used to forecast five years of the index for periods that have already occurred, namely 2018, 2019, 2020, 2021 and 2022.

Analysing ARIMA modelling with an Expert Modeller in SPSS is chosen due to its statistical rigour and suitability for time-dependent data, such as financial or economic indices (Schaffer et al., 2021). The choice is validated by Krishna (2021), who used a predictive and ARIMA model on Dubai real estate investment. According to Al-Matari, Mgammal, Alosaimi and Alruwaili (2022), this approach involves a systematic model selection process, proper

transformation and diagnostic checking, ensuring that the chosen models accurately represent the data's underlying patterns. The use of correlograms, ACF and PACF for pattern detection, along with the Ljung-Box statistic for model validation, enhances the model's accuracy and reliability (Berry, 2022). Additionally, estimating an additional model with a worse fit allows for sensitivity assessment and a more comprehensive understanding of potential forecasting errors (Noguera, 2023). Ultimately, this methodology offers a robust foundation for making informed decisions and forecasts based on historical data patterns (Noguera, 2023).

3.7 DIAGNOSTIC TEST

3.7.1 HAUSMAN TEST

The Hausman test is a statistical test used to determine the appropriate model for analysing panel data. In the context of long-term incentives and financial performance, the Hausman test compares the results of fixed and random effects models (Gebregziabher et al., 2012). In this study, the Hausman test was conducted to test for FEM, which assumes that the intercept of individual observation is time-invariant (Gebregziabher et al., 2012). The slope of the coefficients of the regressors does not vary across individuals or over time. It is suitable over REM, which assumes that the intercept for individuals is time-variant. The slope of the coefficients of the regressors could vary across individuals or over time (Adam & Kamuzora, 2018).

3.7.2 MULTICOLLINEARITY TEST

Multicollinearity arises when there is a correlation between the independent variables in the regression model. This indicates a significant correlation between the independent variables, which contradicts the estimation of the regression model. High correlation between variables might lead to difficulties in model fitting and result interpretation (Adam & Kamuzora, 2018).

In this study, testing multicollinearity is done using the Variance Inflation Factors (VIF). This assesses multicollinearity in a regression model. It identifies the correlation between the independent variables and the strength of the correlation.

3.7.3 HETEROSCEDASTICITY TEST

The study also conducted a test on heteroscedasticity. This happened due to the availability of outliers in the sample. The outliers in the heteroscedasticity test show that the observations that are either small or large concerning other observations are present in the data (Adam & Kamuzora, 2018). This is mainly encountered in cross-sectional data, where data is collected

by observed outcomes simultaneously (Uyanto, 2022). When heteroscedasticity is available, estimators; for example, b_1 , b_2 , are still unbiased and consistent but no longer efficient. The loss of efficiency is due to the standard error and confidence interval becoming too narrow, giving a false sense of precision and the findings obtained in the study are deemed inaccurate (Rice, Wirjanto & Zhao, 2020).

The study used the Breusch-Pagan Test to detect the heteroscedasticity in the data (Hardman & Hart, 2022). This involves using a variance factor and using the X^2 -test to test the null hypothesis, which is homoscedastic and the alternative hypothesis, which represents the presence of heteroscedastic in the data (Mondal, Sattler & Kumar, 2023).

Autocorrelation Test

Autocorrelation is the degree of similarity between a given time series and a lagged version of itself over successive time intervals. Autocorrelation results range from -1 (which is a perfectly negative correlation) to +1, which is a perfectly positive correlation (Burt, Helmer, Shinn & Anticevic, 2022). The Wooldridge serial correlation test is conducted to test autocorrelation in the panel data. This test works with fewer assumptions on the behaviour of the heterogeneous individual effects (Liebhold & Sharov, 2020). The importance is associated with the correlation between independent variable X and the error term U , and when the correlation is zero, the best method to be used is REM, while if X and U are correlated, FEM is the right option (Wahyuni, Fahada & Atmaja 2019).

Function Misspecification

This is when the model does not account for some critical non-linearities (Golden, Henley & White, 2019). It is important to note that missing crucial variables results in function misspecification, leading to bias and inconsistent coefficients in the remaining estimators. The study uses the Ramsey Regression Specification Error Test to assess the model's potential presence of functional misspecification (Golden et al., 2019).

Normal Distribution

A normal distribution, also known as a Gaussian distribution or bell curve, represents a particular type of probability distribution characterised by its symmetry and bell-shaped curve (Khumalo & Guse, 2022). In this distribution, most data values tend to cluster around the mean or average. It is typically employed to model datasets that exhibit a natural or approximate

regular distribution pattern, such as those related to height, weight, test scores and similar phenomena (Mackenzie, 2021).

The normality of the panel data in this study is assessed using Kolmogorov-Smirnov, Shapiro-Wilk, and Anderson-Darling tests to ensure that the data follows a normal distribution (Gwala & Mashau, 2023). Additionally, the Jarque-Bera test is employed to examine normality by comparing the skewness and kurtosis of the sample data with the expected values of a normal distribution, which are zero and three, respectively (Adam & Kamuzora, 2018). The test statistic of the Jarque-Bera test follows a chi-squared distribution with two degrees of freedom under the null hypothesis, which posits that the data conforms to a normal distribution (Amaliah, Darnah & Sifriyani, 2020). A significant deviation in the test statistic from the expected values indicates a rejection of the null hypothesis.

3.8 ETHICS

Research ethics encompass a set of moral standards that serve as guiding principles for the conduct of research, with the primary objective of ensuring the well-being of research participants, preserving the integrity of institutions and researchers and upholding the integrity of the study itself (Alderson & Morrow, 2020). In the context of this study's research approach, confidentiality is not a primary concern, as the study relies on publicly available annual reports sourced from company websites and the IRESS database.

Integrity is a foundational element in research and honesty plays a central role in maintaining it (Alderson & Morrow, 2020). The data extracted from annual reports is meticulously captured to ensure accuracy, with multiple reviews conducted to identify and rectify any potential errors in data entry. As supported by previous literature, publicly accessible annual reports of JSE-listed firms are considered suitable and reliable sources for research purposes.

This study leverages secondary data from reports and records from various real estate companies listed on the Johannesburg Stock Exchange, initially collected for diverse purposes (Corvino Doni & Bianchi, 2020). The organisations which own the original data are duly acknowledged for their contributions. Prior to utilisation, a comprehensive assessment was undertaken to verify the accuracy of the data, ascertain the period over which it was collected, understand its intended purpose and evaluate its content for relevance to the research objectives (Padhan & Prabheesh, 2021).

3.9 LIMITATIONS

The utilisation of secondary data presents particular challenges related to its relevance, as the objectives and data collection methods employed in their original context may not align perfectly with the specific objectives of this study (Adam & Kamuzora, 2018). Furthermore, there may be concerns regarding the accuracy and comprehensiveness of the data. This is particularly pertinent as the data may be influenced by various factors, including the research design, sampling techniques, data collection procedures utilised during the initial compilation and audited financial statements. Nevertheless, audited financial statements ensure reliability since they follow accounting standards such as GAAP and GRAP.

These potential limitations necessitate a thorough examination and assessment of the secondary data to ensure its appropriateness and reliability for the current study's objectives and analytical framework. Additionally, the hypotheses are examined over five years, as it is typical for long-term incentive (LTI) plans to have a vesting period of three years before the expiration date (Lovett et al., 2022).

To mitigate the limitations related to secondary data utilisation and the period of the analysis, several strategies are employed:

3.9.1. DATA EVALUATION AND CLEANING

A rigorous data evaluation process is undertaken to assess the relevance of the secondary data for the study's specific objectives (Hodak, 2019). This includes a comprehensive review of the original data sources and methodologies employed in data collection. Data that does not align with the study's objectives is filtered out. Additionally, data-cleaning procedures are executed to address accuracy and comprehensiveness issues (Hodak, 2019).

3.9.2. METHODOLOGICAL ALIGNMENT

The research design, sampling techniques and data collection methods used in the original context are assessed to determine their compatibility with the study's research framework (Reed, 2022). Where misalignments are identified, appropriate adjustments are made to ensure the data's relevance and reliability for the study (Rice, Wirjanto & Zhao, 2020).

3.9.3. COMPREHENSIVE EXAMINATION OF LTI PLANS

To address the concern about the period of the analysis, the study includes a detailed examination of the long-term incentive (LTI) plans and their vesting periods within the REITs listed on the Johannesburg Stock Exchange (Makki & Alqahtani, 2022). This helps to ensure

that the hypotheses are evaluated with a complete understanding of the specific LTI structures in place, thus enhancing the study's relevance and reliability (Akhalumeh & Ogunkuade, 2021).

3.9.4. AUDITED FINANCIAL STATEMENTS

Financial statements of REITs listed on JSE adhere to rigorous standards such as IFRS and AC 500 Standards set by the South African Accounting Practices Board, ensuring a robust foundation for the study (Aggarwal & Samwick, 2020). By relying on independently verified financial data, the study bolsters the reliability and credibility of the information used for analysis. This meticulous approach not only mitigates concerns related to the accuracy and relevance of the data but also aligns with established best practices in financial research, fostering transparency and bolstering the overall robustness of the investigation into the impact of long-term incentives on Return on Capital Employed (ROCE) within the REITs listed on the Johannesburg Stock Exchange (Kirsten & Du Toit, 2018).

3.10 SUMMARY

This chapter presented the research methodology and ethical considerations. The next chapter focuses on results and discussion

CHAPTER FOUR

RESULTS PRESENTATION AND DISCUSSION

4.1 INTRODUCTION

This chapter presents the results of time series data analysis. The data was collected for five years, from 2018 to 2022. The study's main objective is to analyse the relationship between long-term incentives and the financial performance of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange. Specifically, this study sought to assess the effect of stock options (shares) on the financial performance of Real Estate Investment Trusts and the impact of cash bonuses on the financial performance of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange. The study begins with analysing the dependent variable, ROCE, before proceeding to forecast modelling.

4.2 DESCRIPTIVE SUMMARY OF DEPENDENT VARIABLE

A descriptive summary was conducted for the dependent variable (ROCE) to identify the outliers before analysis. The data set consists of 110 observations from 2018 to 2022 and was collected annually at the end of each calendar, which was December.

This study began with the analysis of the dependent variable. Figure 4.1 presents the line chart where ROCE is plotted against time. The line chart is similar to two random walks with drift as the mean and variance increase over time. That is, they are non-stationary. According to Gujarati and Porter (2008), non-stationary data points have a time-varying mean-variance. They further indicate that financial data usually follows a random walk, a non-stationary stochastic process. Therefore, the data points are interpreted as non-stationary based on the line chart in Figure 4.1 below. These findings also concur with previous studies, which found that the plotted dependent variable against time showed deterministic trends (the lines in the charts increased over time). Therefore, The findings support the prevailing notion that the stock market exhibits a consistent upward trend over time. Consequently, it is plausible to consider the time series as somewhat predictable, making an ARIMA model a potentially accurate tool for projecting stock market data points (Matemane, 2022). Figure 4.2 also presents autocorrelations of the data points whereby there is a decaying autocorrelation as lags increase, which further supports that the data points are non-stationary. Therefore, based on the line chart results and the autocorrelation charts, it can be interpreted that the data points are non-stationary.

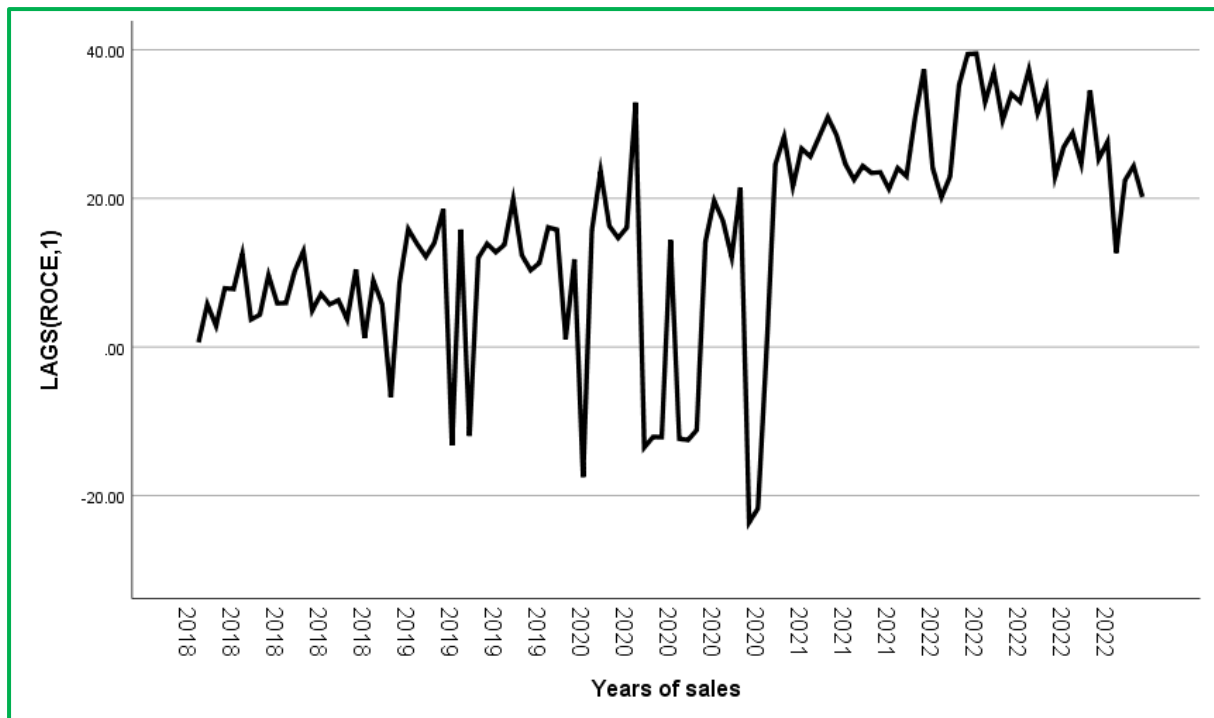


Figure 2.1: Line chart of ROCE plotted against time

Source: Author's own compilation (2023)

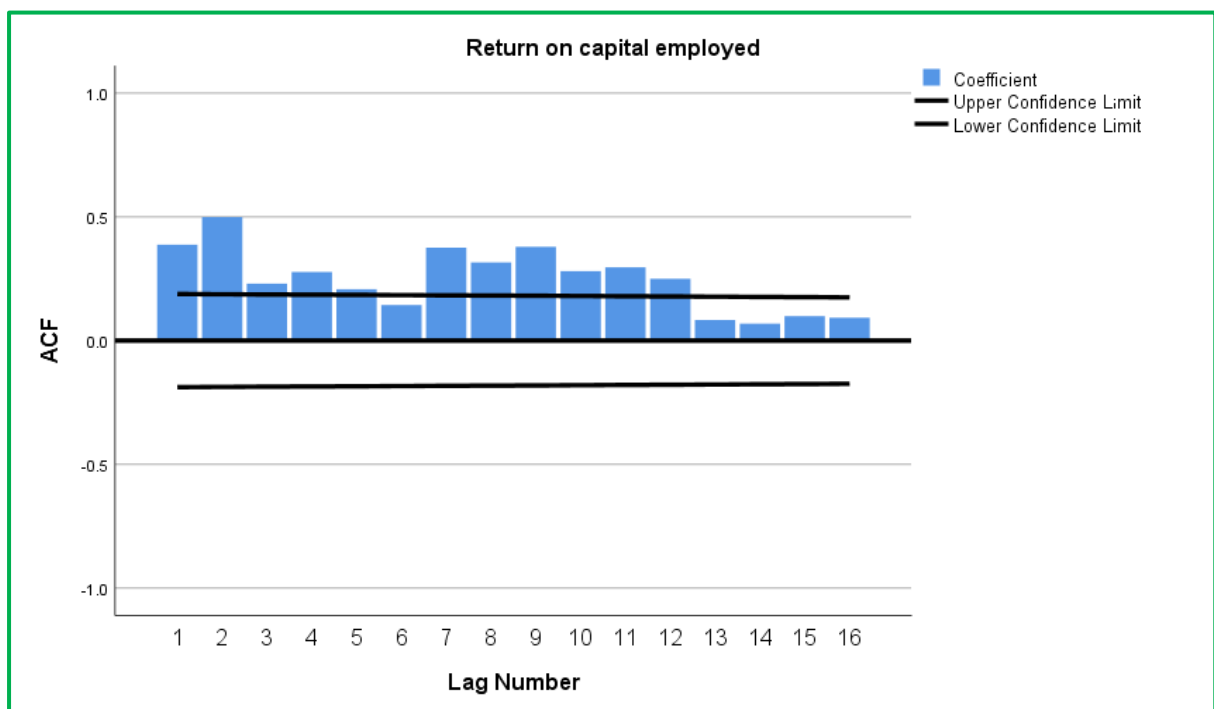


Figure 3.2: The ACF chart of ROCE with the 95% confidence interval

Source: Author's own compilation (2023)

a) Selection of ARIMA Model based on Expert Modeller

The process of identifying an appropriate model involved numerous steps, such as performing appropriate transformations and differencing, identifying the ARIMA pattern, estimating the parameters, and conducting diagnostic checks on the residuals using the Ljung-Box statistics. Therefore, based on the Expert Modeller procedure, the suggested model was considered the best-fitted model for the data points of the dependent variable (ROCE). According to the Expert Modeller, the natural logarithmic transformation of ROCE is stationary after the first difference. The natural logarithmic transformation aims to reduce the influence of outliers. Since the natural logarithmic transformation is applied to the data and the ARIMA model is integrated of the first order, the right side of the equation forecasts the rate of return between two periods. The previous period must be moved from the left to the right side of the equation to forecast a period. This is confirmed in Figure 4.3, where the natural log transformation of ROCE has been plotted against time. The line chart shows that the mean and variance are constant over time, and the covariance is time-invariant (variables may not change with time), which is one of the requirements for a time series to be considered stationary. The chart of the ACF for ROCE log transformed shown in Figure 4.5 further supports that the time series is stationary, since it resembles a white noise process. The choice of one moving average component can be motivated in Figure 4.4, Figure 4.5, and Figure 4.6, where the charts of the ACF and PACF are illustrated, respectively, for the stationary process of log transformation of ROCE. A significant spike at the first lag in the ACF, combined with the exponential decline as lags increase in the PACF, further suggests an MA(1) process. Therefore, according to Expert Modeller, the best-fitted ARIMA model for this data is an ARIMA (0, 1, 3). These results show that the Expert Modeller has dropped the seasonal autoregression term (P). This method looked at the previous relevant time point and used it to estimate the next time point based on a simple regression formula with no predictor variable.

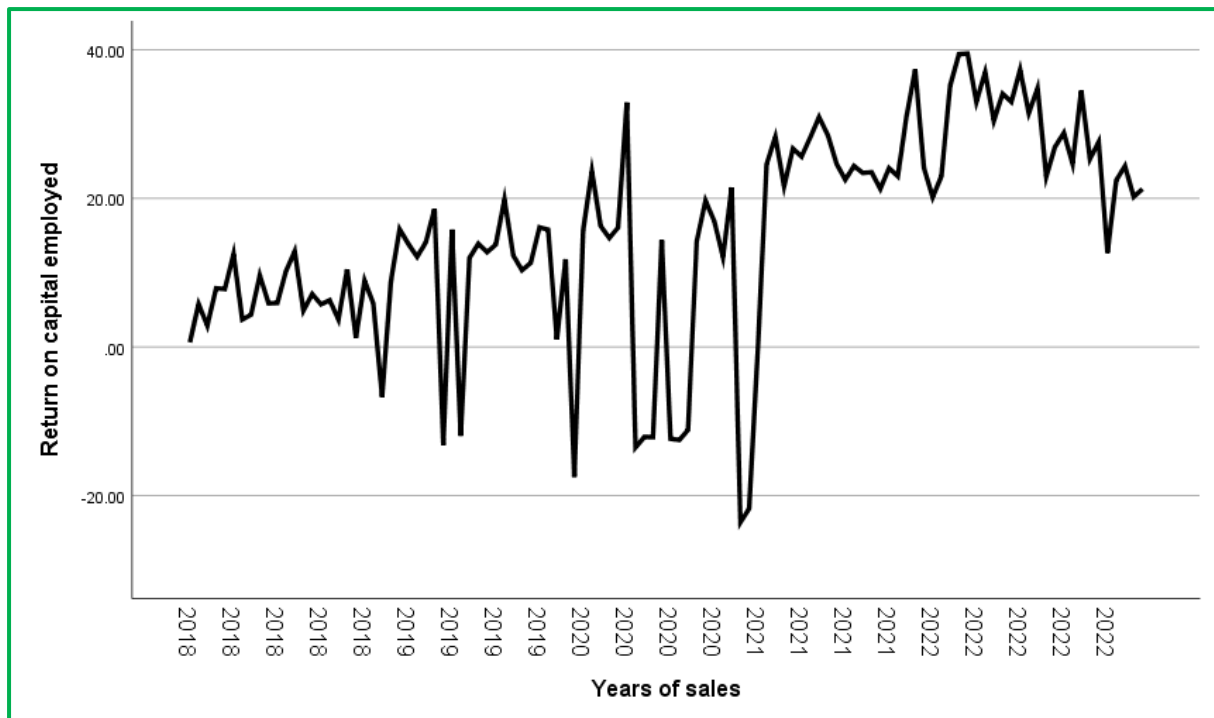


Figure 4.3: Line chart of In ROCE plotted against time

Source: Author's own compilation (2023)

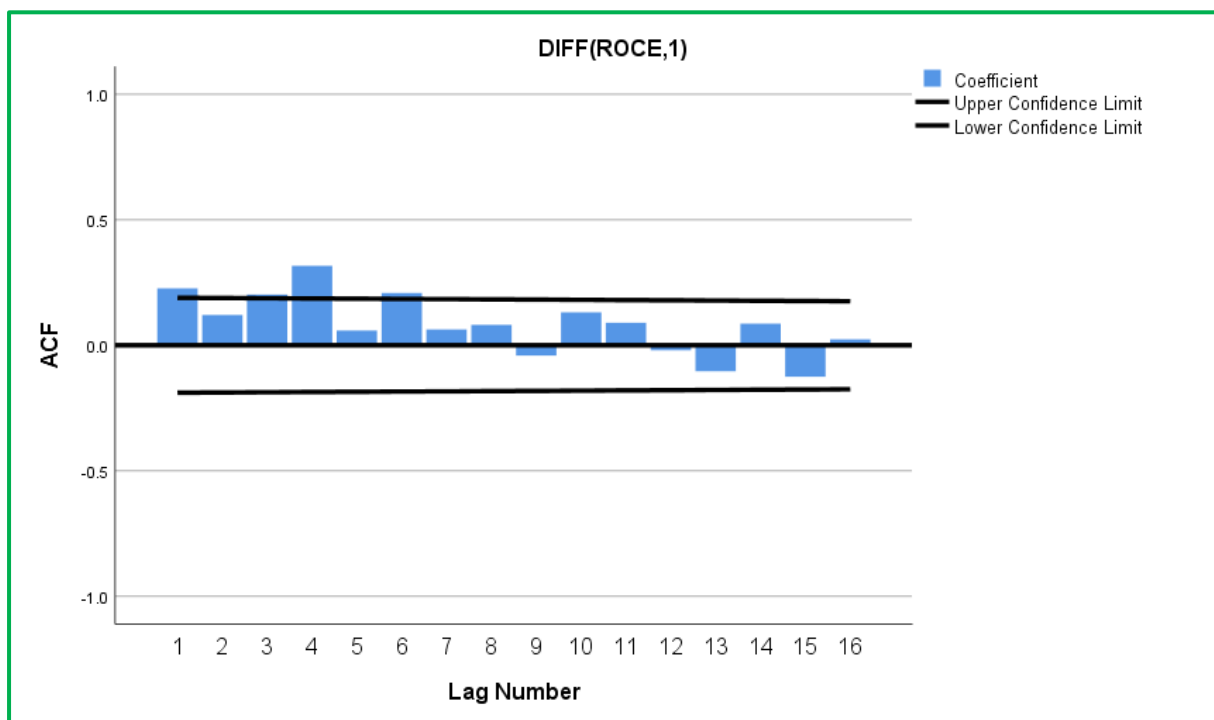


Figure 5.4: The ACF chart of In ROCE with the 95% confidence interval

Source: Author's own compilation (2023)

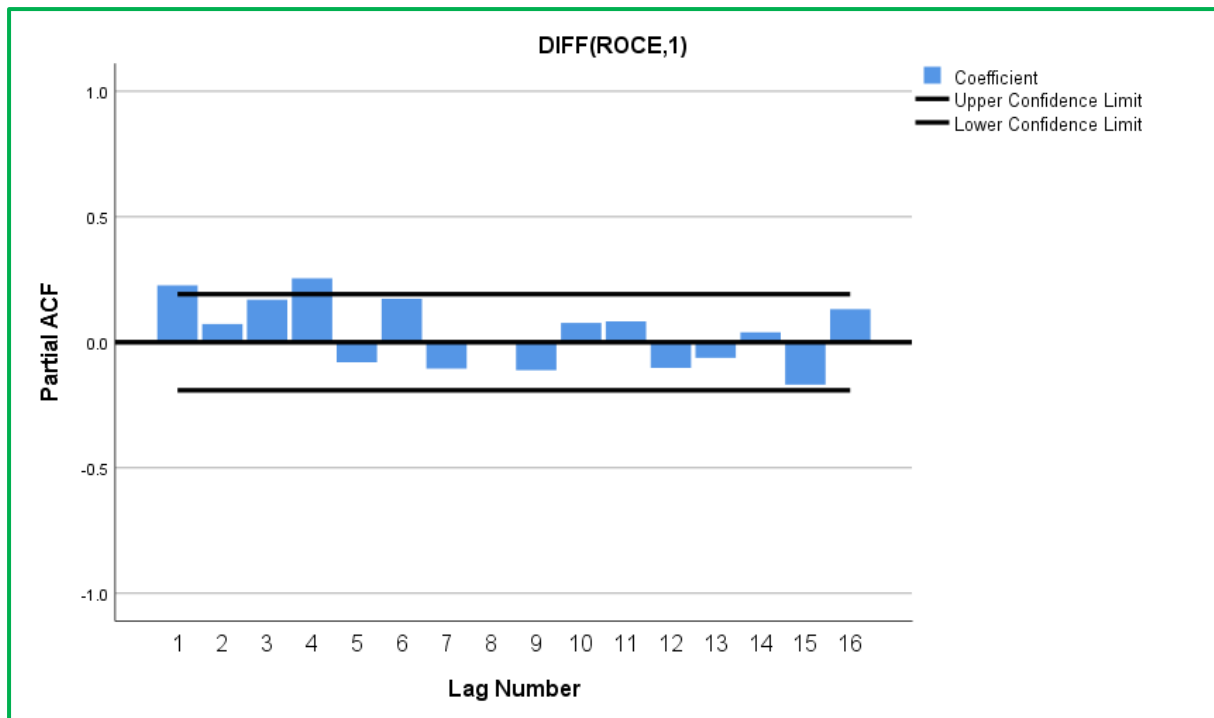


Figure 6.5: The PACF chart of In ROCE with the 95% confidence interval

Source: *Author's own compilation (2023)*

Furthermore, model 1 predicts the dependent variable without predictors (Garel & Petit-Romec, 2021). According to Table 4.1 below, the results from the model summary show the parameters compared to a model with fitted predictors. Additionally, in Table 4.2, the values in the significant column indicate that the model does not leave any significant correlations after the specified model (Githaiga et al., 2022). In other words, the insignificant correlation demonstrates that the overall model fits the data-point series well.

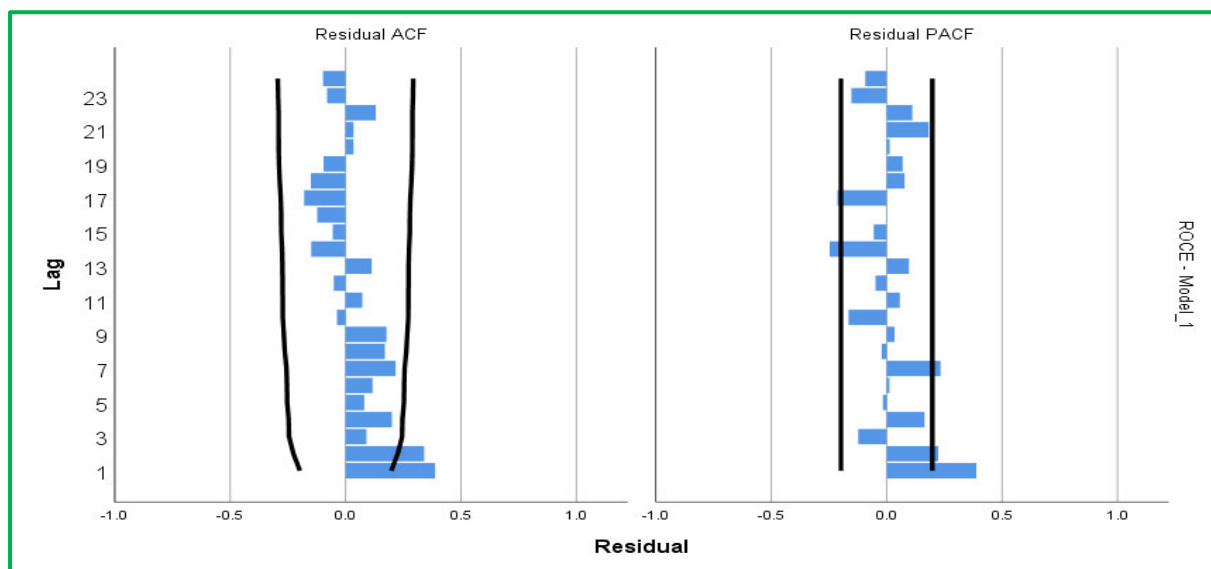
Table 4.1: Model Summary

Model 1 Without Predictors	Model Summary Statistics
Fit Statistic	Mean
Stationary R ²	.165
R ²	.404
RMSE	11.479
MAPE	108.488
MaxAPE	5011.168
MAE	9.362
MaxAE	46.779
Normalised BIC	5.785

Table 4.2 Model Fit Statistics with Parameter Estimate

Model	Ljung-Box Q(18)					# of outliers
	Number of predictors	Stationary R ²	Statistic	Df	Sig	
ROCE-Model_1	0	.065	28.622	17	.038	0
Parameter Estimates						
Variable	Estimate	Standard err	t	sign	N	
MA(1)	-.324	.092	-3.515	.001	110	

Furthermore, the ACF and PACF charts of the residuals for the ARIMA model, presented in Figure 4.6 and Figure 4.7, further confirm that the residuals follow a non-stationary trend since the first three lags show different variance which suggests that there is evidence of serial correlation and some lags are statistically significant.

**Figure 7.6: ACF and PACF Chart from Residual in ARIMA of ROCE with 95% CI**

Source: Author's own compilation (2023)

4.3 TESTING FOR HYPOTHESIS

As already alluded to in Chapter 1, the study sought to determine if there is a relationship between long-term incentives and financial performance and whether the relationship is positive or negative, or if there is simply no relationship. Consequently, the results are presented as per the following hypotheses:

- i. Stock options (Shares) positively influence the financial performance of REITs listed on the Johannesburg Stock Exchange
- ii. Stock options (Shares) have no influence on the financial performance of REITs listed on the Johannesburg Stock Exchange
- iii. Cash bonuses positively influence the financial performance of REITs listed on the Johannesburg Stock Exchange
- iv. Cash bonuses have no influence on the financial performance of REITs listed on the Johannesburg Stock Exchange

a) Test for multicollinearity

Before testing the hypothesis, a multicollinearity of independent variables was conducted through regression analysis. A correlation of 0.8 or above provides evidence of a strong relationship between the independent variables and causes problems in the analysis and interpretation of the results (Mugenda and Mugenda, 2003). However, the Pearson correlation coefficients in Table 4.3 below, show no statistically significant relationship between the independent variables.

Table 4.3: Correlation for Testing Multicollinearity

		Cash Bonuses
Stock Options	Pearson Correlation	-.073
	Sig. (2-tailed)	.020
	N	110

b) Test for homogeneity

The homogeneity test was conducted through a scatterplot of standardised predicted values versus standardised residuals and a histogram of standardised residuals. The scatterplot (Figure 4.7) below shows that the data met the assumptions of homogeneity of the variance and linearity, as there was no pattern in the scatter.

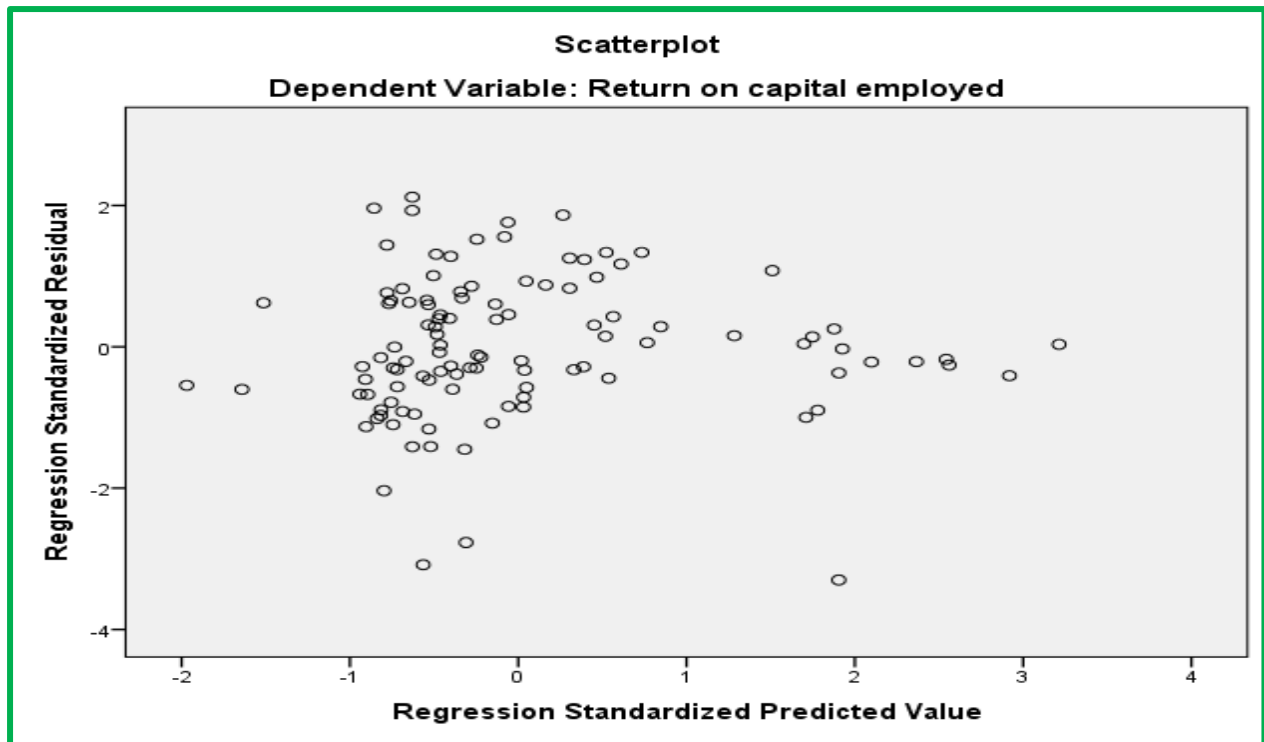


Figure 8.7: Test for Normality

Source: Author's own compilation (2023)

4.3.1 HYPOTHESIS 1 (EFFECTS OF STOCK OPTIONS ON FINANCIAL PERFORMANCE)

The study's first objective was to investigate whether stock options affect the financial performance of JSE-listed REITs. This forms the first hypothesis of the study. To establish the effect of stock options on a company's financial performance, a cross-correlation between the stock options and ROCE was carried out. Furthermore, regression was conducted using Expert Modeller in SPSS to estimate an appropriate ARIMA model based on the data points in the description summary of the dependent variable.

a) Cross-correlation between Stock Options and ROCE

The predictor (stock options) was transformed into lagged variables before entering the predictor variables into the ARIMA model. This helped to ensure that the value at time point 1 in the original variable is now the value at time point 2. According to Schroder and Dixona (2019), a single significant correlation at lag =0 indicates that the current value of the dependent variable is predicted only by the current value of an independent variable. They further indicate that a significant correlation that is NOT at 0 is a clue that there is a possible lagged relationship between the variables – which might indicate a cause-and-effect relationship. They further elaborate that a positive lag indicates the first variable (predictor)

precedes the second variable (explanatory), and a negative lag indicates the second variable precedes the first variable.

According to Figure 4.8 below, the results show a positive correlation in all years from 2018 to 2022, as represented by the number of lags (positive or negative, 1 to 5). In this case, the positive correlation implies that stock options precede the return on capital employed. Therefore, the Return On Capital Employed increases when directors are rewarded with more stock options. The findings concur with Ramgopal and Shevlin (2022), who explored executive stock option compensation and its influence on investment in risky projects, revealing a positive relationship with future risk-taking. Furthermore, similar findings were obtained by Visch (2022) on the relationship between executive compensation in the form of stock options and financial performance conducted during the COVID-19 pandemic. That study found a positive correlation between executive compensation and Return on Equity in Dutch-listed firms. The study further indicated the relationship between long-term incentives and firm performance before and during the COVID-19 pandemic. Therefore, it is not surprising that the current study found similar findings on the impact of stock options on the performance of REITs listed on the Johannesburg Stock Exchange. These results align with Hult's (2015) analysis, which rejected a hypothesis that LTI plans do not increase firm performance in Swedish-listed companies. However, Hult (2015) also found no significant relationship between the change in EBITDA and LTI plans in large-cap companies. Consequently, the initial null hypothesis could not be rejected. These findings are contradictory to the results of this study.

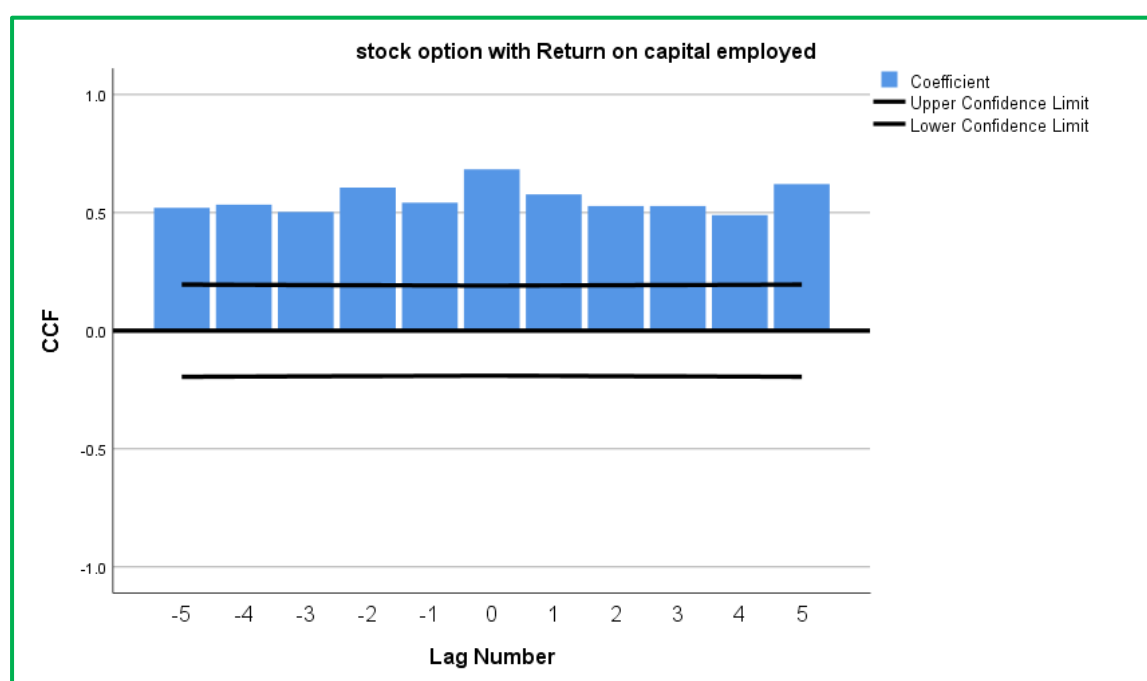


Figure 9.8: Cross-correlation between Stock Options and ROCE

b) Comparing single Model fit with Predictor Model

After conducting cross-correlations between stock options and ROCE, the regression [ARIMA (0, 1, 3)] model was used to predict the effect of stock options on the financial performance of JSE-listed REITs, which ROCE measured. According to Quinn (2021), a good model fit is one with the lower value of Root mean square error (RSME), Mean absolute percentage error (MAPE), Mean absolute error (MAE), Maximum absolute percentage error (MaxAPE), Maximum absolute error (MaxAE), Normalised BIC and a larger value of Stationary R squared and R squared. The findings in Table 4.4 below show that the value of stationary R squared increased from 0.165 to 0.284, and the value of R squared increased from 0.404 to 0.468 while all other parameters decreased. This means that 46.8% of the changes observed in ROCE were attributed to stock options. These findings concur with findings from a previous study by Idree, Afshar, Alam and Agarwal (2019) on the prediction approach for Stock Market Volatility Based on Time Series Data, which found that the ARIMA model improved from the previous model after entering the predictor variables. The parameter estimate from the stock options was found to be statistically significant. This also means that a unit increase in stock options for the company managers leads to a 0.918 unit increase in the financial performance of JSE-listed REITs. Based on these findings, the null hypothesis of no effect of stock options on financial performance is rejected. The findings contradict Nieman's (2018) study, which found no significant relationship between long-term incentives and financial performance. However, the study correlates with Hult's (2015) results, which rejected the hypothesis that stock options do not increase firm performance in Swedish-listed companies.

Table 4.4: Comparing Single and Predictor Models

Parameters	Summary statistics (model without Predictors)	Summary statistics (model with Predictors)
Fit Statistic	Mean	Mean
Stationary R ²	.165	.284
R ²	.404	.468
RMSE	11.479	10.545
MAPE	108.488	101.720
MaxAPE	5011.168	3941.880
MAE	9.362	7.192
MaxAE	46.779	38.625
Normalised BIC	5.785	4.970

Table 4.5: ARIMA Model Parameters

Model	Ljung-Box Q(18)					# of outliers
	Number of predictors	Stationary R ²	Statistic	Df	Sig	
ROCE-Model_1	1	.284	26.339	15	.035	0
Parameter Estimates						
Variable	Estimate	Standard err	t	sign	N	
Constant	.296	.603	.491	.024		
Stock Option	.918	.197	7.340	.000		

Entered Variables were natural log-transformed

Furthermore, the predicted value for the single model fit and predictor model were forecasted using Expert Modeller for the dependent model only and the predictor model. The results are presented below in Figure 4.9 and Figure 4.10. The results show that there is a slight difference in terms of the way the observed and predicted values (fit line) fit into the model. The predictive model with independent variables fits slightly better than the the single model.

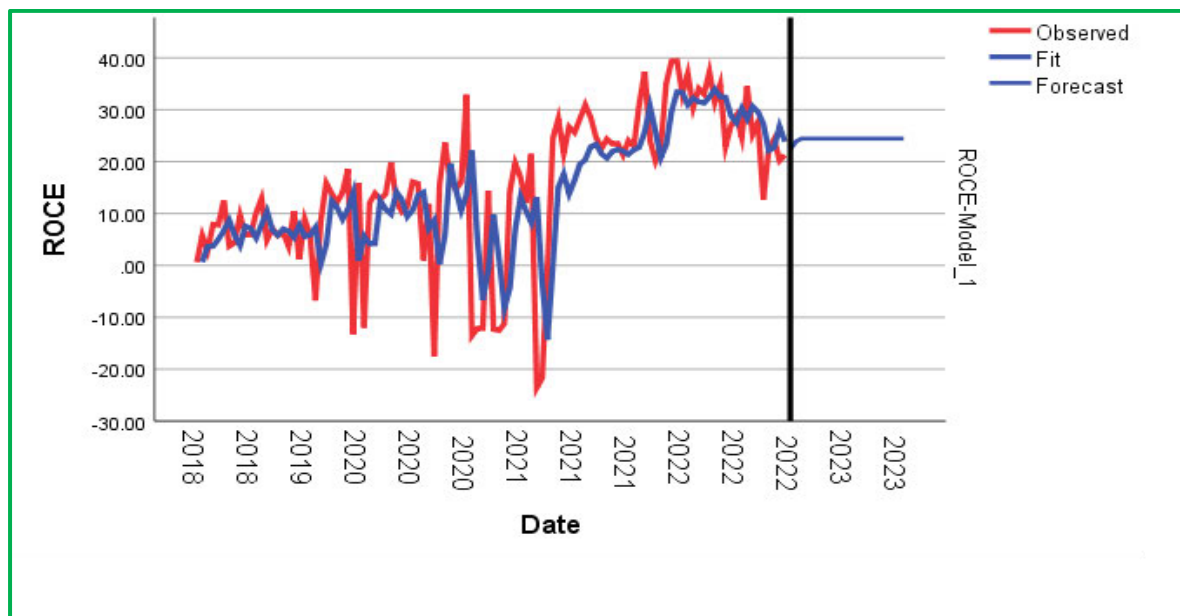


Figure 10.9: Line chart of ROCE, the fitted values of Expert Modeller

Source: Author's own compilation (2023)

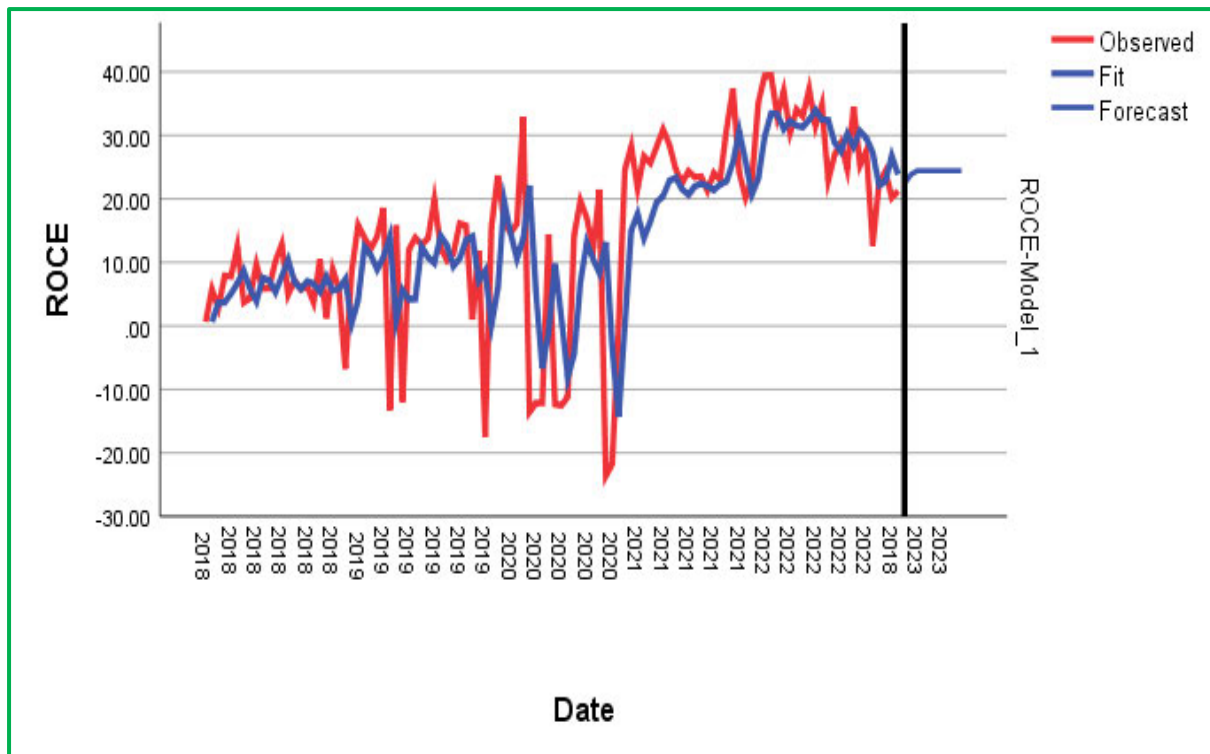


Figure 11.10: Line chart of ROCE, the fitted values of the ARIMA (0, 1, 3), and the forecasts

Source: Author's own compilation (2023)

4.3.2 HYPOTHESIS 2 (EFFECTS OF CASH BONUSES ON FINANCIAL PERFORMANCE)

This constituted the study's second objective. The study aimed to assess the influence of cash bonuses on the financial performance of REITs listed on the Johannesburg Stock Exchange. A cross-correlation was conducted before conducting a regression through the ARIMA model to evaluate whether cash bonuses affected financial performance.

a) Cross-correlation between Cash Bonuses and ROCE

Similarly, the findings from Figure 4.11 below show that a correlation happens in years 2 and 5, represented by a lag number (+2) and (+5), respectively. This also indicates a positive correlation between cash bonuses and ROCE in 2019 (year 2) and 2022 (year 5), whereby an increase in bonuses leads to a positive increase in return on capital employed by the Companies. Therefore, cash bonuses have a significant statistical effect on ROCE. Thus, the null hypothesis that cash bonuses have no impact on the financial performance of REITs listed on the Johannesburg Stock Exchange is rejected. These results concur with Bykova, Lobza, Gavrysh, Soroka & Karpenko (2022), who found a positive relationship between bonuses as

financial incentives and the ability of companies to achieve their targets through the work of top managers.

On the other hand, the findings disagree with Nieman (2018), who offers a contrasting perspective by demonstrating that heightened long-term incentives, encompassing cash bonuses, did not necessarily yield improved financial performance. He further argues that in light of this complexity and the normative inclusion of cash bonuses in executive compensation, the existing body of literature presents a discernible challenge, marked by inconsistent outcomes and the absence of a definitive consensus regarding the intricate relationship between these compensation elements and firm performance. However, the findings of this study consider the views of Meslec et al. (2020), who highlight that the effects of bonuses on a company's financial performance might depend on the size and structure of bonuses, which may influence managerial behaviour. They further indicate that significant bonuses may encourage more aggressive risk-taking behaviour, positively impacting financial performance. Therefore, the positive cross-correlation that this study has found may be attributed to the size of bonuses provided to the managers, which influenced their performance. These findings are supported by Hampsink's (2020) study, which found a positive relationship between long-term incentives and financial performance in Dutch-listed firms between 2012 and 2018. However, the null hypothesis stating that cash bonuses have no effect on the financial performance of REITs listed on the Johannesburg Stock Exchange is rejected. As mentioned above, a study by Nieman (2018) found no relationship between long-term incentives such as cash bonuses and financial performance, supporting the null hypothesis.

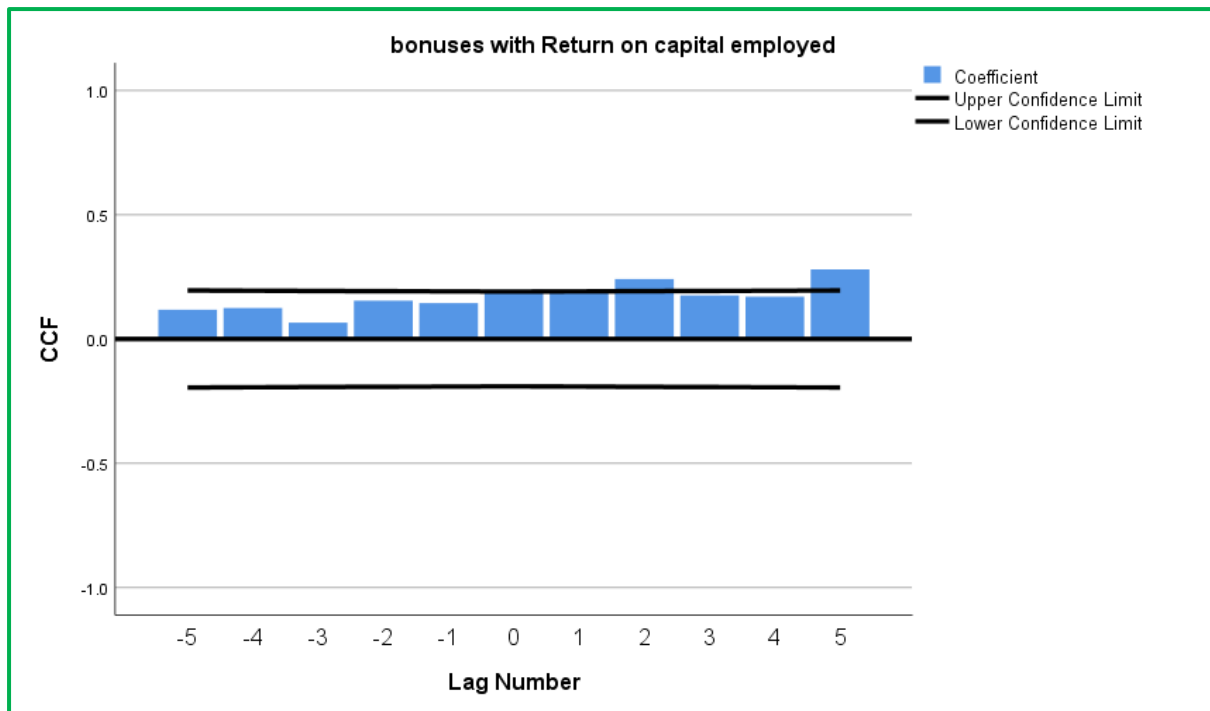


Figure 12.11: Cross-correlation between Bonuses and ROCE

Source: Author's own compilation (2023)

b) Comparing single Model fit with Predictor Model

Therefore, according to Table 4.6 and Table 4.7 below, the model fit seems not to have improved from the previous ARIMA model that did not include independent variables. Many of the statistics in the predictor model seem to indicate a slight improvement in the overall fit. The stationary R squared increased from 0.165 in the single model to 0.293 in the predictor model. Similarly, the R squared slightly increased from 0.404 to 0.474. This means that 47.4% of the variations observed in ROCE could be attributed to bonuses. Furthermore, the remaining parameter values of the single model are slightly higher than the parameter values of the predictor model, which shows an improvement in the model (Table ?). Additionally, the ARIMA parameter estimate for cash bonuses significantly affects ROCE. This means that with a unit increase in cash bonuses given to the executives or managers of the company, there is a 0.765 unit increase in the company's financial performance. These results show that cash bonuses positively affect the financial performance of REITs listed on the JSE. Hence, the null hypothesis is rejected. The findings align with Hult (2015) and Hampsink (2020), who found a positive relationship between long-term incentives and financial performance. Furthermore, the positive impact for the entire period supports agency theory and optimal contracting theory, which underscores the alignment of managers' interests with those of shareholders using mechanisms such as long-term incentives to improve financial performance.

Table 4.6: Comparing Single and Predictor Models

Parameters	Summary statistics (model without Predictors)	Summary statistics (model with Predictors)
Fit Statistic	Mean	Mean
Stationary R ²	.165	.293
R ²	.404	.474
RMSE	11.479	10.481
MAPE	108.488	93.498
MaxAPE	5011.168	2966.010
MAE	9.362	7.284
MaxAE	46.779	40.869
Normalised BIC	5.785	4.916

Table 4.7: ARIMA Model Parameters

Model Statistics						
Model	Number of Predictor s	Model Fit Statistics	Ljung-Box Q(18)			Numb er of Outlier s
		Stationar y R- squared	Statistic s	DF	Sig.	
LAGS(ROCE,1)- Model_1	1	.293	25.050	15	.049	0
ARIMA Model Parameter Estimates						
Model	Estimate	SE	t	Sig.		
Constants	-.221	.564	-.391	.696		
Cash Bonuses	.765	.207	4.798	.000		

Furthermore, the forecasts for single model fit and predictor model fit in Figures 4.12 and 4.13 below show that the predictor model fits better than the single model fit.

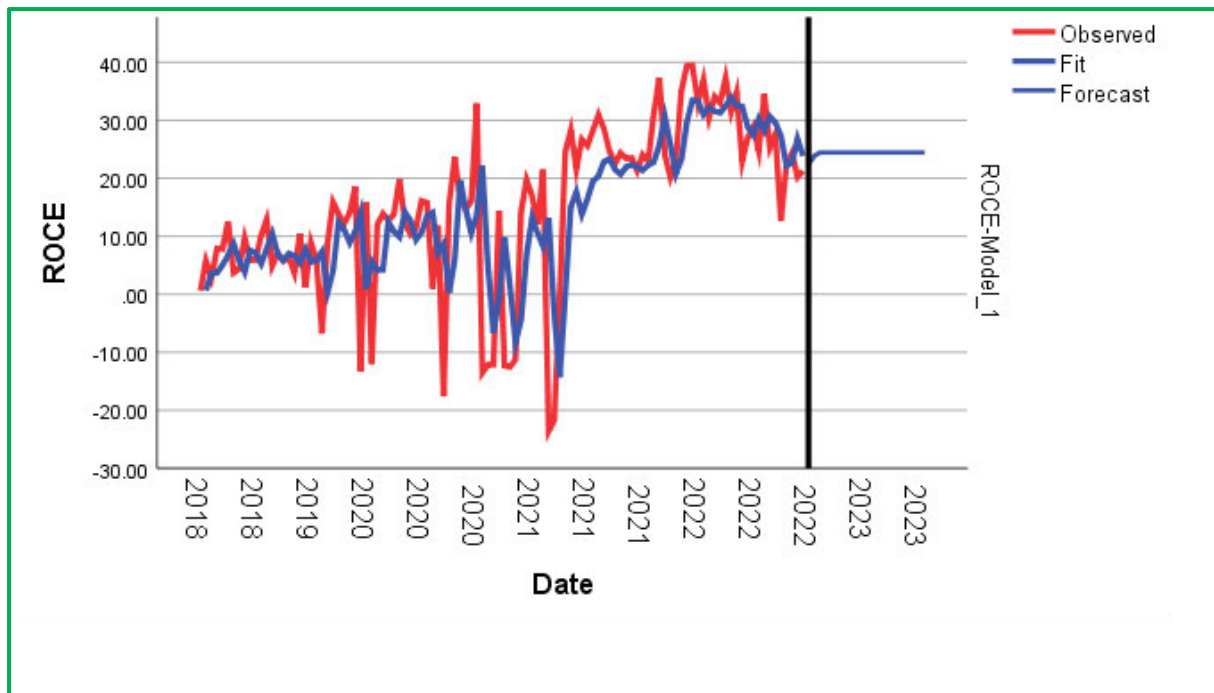


Figure 13.12: Line chart of ROCE, the fitted values of Expert Modeller

Source: Author's own compilation (2023)

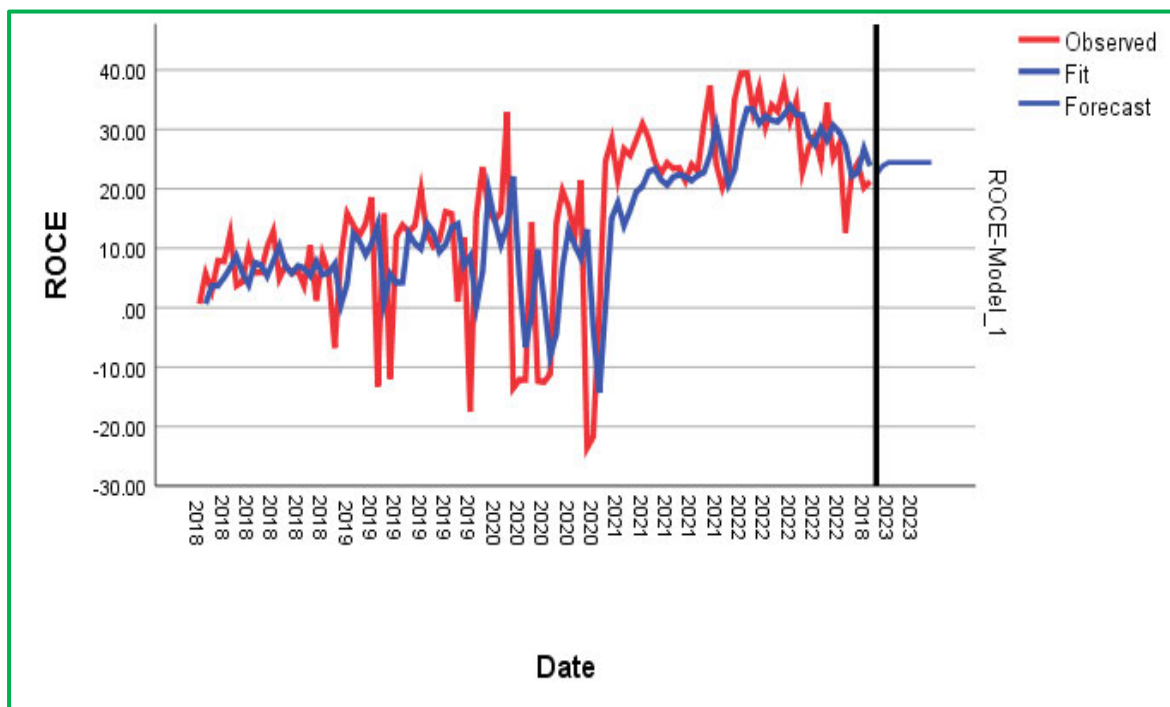


Figure 14.13: Line chart of ROCE, the fitted values of the ARIMA (0, 1, 3), and the forecasts

Source: Author's own compilation (2023)

Furthermore, table 4.8 presents the summary findings of the hypotheses.

Table 4.8: Hypothesis Summary

Hypothesis	Results	Conclusion	Relevance to Corporate Governance Theory
Stock options (Shares) positively influence the financial performance of REITs listed on the Johannesburg Stock Exchange	Accepted	There is a significant positive relationship between stock options and financial performance	• The positive relationship between stock options and financial performance supports agency theory. • The positive relationship between stock options and financial performance supports optimal contracting theory.
Cash bonuses positively influence the financial performance of REITs listed on the Johannesburg Stock Exchange	Accepted	There is a significant positive relationship between stock options and financial performance	• The positive relationship between cash bonuses and financial performance supports agency theory. • The positive relationship between cash bonuses and financial performance supports optimal contracting theory.

4.4. CHAPTER SUMMARY

This chapter presented the analysis of time series data and the results to answer the research questions and to test the formulated hypotheses. The chapter concluded that there is a positive relationship between stock options (Shares) and financial performance. The chapter further concluded that there is a positive relationship between cash bonuses and financial performance. The next chapter focuses on the conclusion and recommendations.

CHAPTER FIVE:

STUDY CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter presents the research problem and research objectives, summary of findings, limitations, implications and recommendations for future studies.

5.2 RESEARCH PROBLEM AND RESEARCH OBJECTIVES

The results of this study offer robust evidence in favour of the research problem, which is the utilisation of long-term incentives to mitigate agency problems. In attempting to address the research problem statement, the study's primary objective was to analyse the influence of long-term incentives on the financial performance of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange (JSE). Specifically, the specific objectives are:

- i. To assess the impact of stock options (shares) on the financial performance, specifically the ROCE of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange.
- ii. To evaluate the impact of cash bonuses on financial performance, specifically the ROCE of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange.

To achieve the specific objectives, the study answers the formulated research questions found in Section 1.5.2 by testing the following hypotheses:

- i. Stock options (Shares) positively influence the financial performance of REITs listed on the Johannesburg Stock Exchange.
- ii. Stock options (Shares) have no influence on the financial performance of REITs listed on the Johannesburg Stock Exchange.
- iii. Cash bonuses positively influence the financial performance of REITs listed on the Johannesburg Stock Exchange.
- iv. Cash bonuses have no influence on the financial performance of REITs listed on the Johannesburg Stock Exchange.

5.3 SUMMARY OF THE FINDINGS

This study's main objective is to analyse the influence of long-term incentives on the financial performance of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange. The study drew upon agency and optimal contracting theories to analyse the influence of long-term incentives on the financial performance of Real Estate Investment Trusts (REITs) listed on the Johannesburg Stock Exchange. The study further tested the formulated hypotheses during three economic periods, mainly pre-COVID-19, during COVID-19 and after COVID-19. By examining three economic periods, the study examined the influence of long-term incentives on financial performance amid the exogenic shock due to the 2019 to 2021 COVID-19 pandemic. Thus, by examining the effects of long-term incentives before, during and after the COVID-19 pandemic, the study effectively addressed the endogeneity concerns discussed in previous research.

The study utilised the past five years' dataset of Real Estate Investment Trusts listed on the Johannesburg Stock Exchange. The data used in this study was sourced from the IRESS database and annual reports of JSE-listed REITs. The study concluded with a sample size of 22 Real Estate Investment Trusts, focusing on a period between 2018 and 2022. The number of companies and the periods translated into 110 observations. The period between 2018 and 2022 was critical to the study because, during this period, the COVID-19 pandemic occurred, which led to lockdowns that affected companies' operations and financial performance.

To end this, the primary methodology employed was the utilisation of multiple regression panel data analysis, comparable to the approach taken by Hult (2015). The panel data regression analysis used two models: the Fixed Effect Model (FEM) and the Random Effect Model (REM). Incorporating both models allowed the study to analyse the relationship between long-term incentives (stock options and cash bonuses) and ROCE comprehensively. This approach increased the reliability and robustness of the study's findings (Yusra & Mulfita, 2019).

The variables were chosen based on similar studies. The independent variables were stock options (shares) and cash bonuses, similar to Hult's (2015) study. The dependent variable chosen was the Return on Capital Employed, similar to the study of Visch (2022).

In the main, the two main findings established from this study are as follows:

- i. Stock options (shares) positively influence the financial performance of JSE-listed REITs.
- ii. Cash bonuses positively influence the financial performance of JSE-listed REITs.

The following subsections provide insight into the findings of specific objectives which support the preceding main objective:

5.3.1 Effects of Stock Options on Financial Performance

The study's findings on the first objective concluded a positive relationship between stock options and the company's performance. This means that increasing stock options for the managers increases the company's financial performance. The results concur with previous studies on a similar topic (Chung, 2017; Hampsink, 2020; Hult, 2015; Naik et al., 2020; Ramgopal & Shevlin, 2022; Resnick, 2013; Visch, 2022; Weender, 2019; Zhandi et al., 2019;). In contrast, the studies conducted by Nieman (2018) and Kazan (2016) about the relationship between long-term incentives and financial performance concluded that there was no noteworthy association between stock options and financial performance.

5.3.2 Effects of Cash Bonuses on Financial Performance

Furthermore, the findings on the effects of cash bonuses on financial performance also show a positive relationship. The results concur with the Hult (2015) study that found a positive relationship between cash bonuses and financial performance. (Bykova, Andreeva, Garanina (2022) also found a positive relationship between cash bonuses and financial performance. However, different studies from previous research show no evidence of the influence of bonuses on ROCE (Nieman, 2018).

The following subsections provide insight into the findings of each hypothesis highlighted in Section 4.3 of the study:

5.3.3 Stock options (Shares) positively influence the financial performance of REITs listed on the Johannesburg Stock Exchange

Based on the findings, the study concludes that stock options (Shares) positively influence the financial performance of Real Estate Trusts listed on the Johannesburg Stock Exchange. Therefore, this hypothesis is accepted by the study. The findings align with Hult's (2015) study, which found a positive relationship between stock options and financial performance. Subsequently, Hult's (2015) study accepted the hypothesis that stock options positively influence financial performance.

5.3.4 Cash bonuses positively influence on the financial performance of REITs listed on the Johannesburg Stock Exchange

Based on the findings, the study concludes that cash bonuses positively influence the financial performance of Real Estate Trusts listed on the Johannesburg Stock Exchange. Therefore, this hypothesis is accepted by the study. The findings align with Hult's (2015) study, which found a positive relationship between cash and financial performance. Subsequently, Hult's (2015) study accepted the hypothesis that cash bonuses have no influence on financial performance

In closing, the findings presented in this study conclude that stock options (shares) and cash bonuses positively influence the Return on Capital Employed of JSE-listed REITs. Empirically, the statistically positive relationship between long-term incentives and financial performance supports empirical results by Bykova et al. (2022), Chung (2017), Hampsink (2020), Hult (2015), Resnick (2022), and Zandi et al. (2019). These findings are consistent with the predictions of agency theory, which emphasises the importance of implementing effective governance mechanisms and long-term incentive structures to reduce potential conflicts of interest between shareholders and executives. Ultimately, this can improve the financial performance and value creation of REITs listed on the stock exchange (Bussin, 2022).

This study's findings are robust and support the agency and optimum contracting theories, emphasising the importance of implementing effective governance mechanisms and long-term incentive structures to align interests between shareholders and executives.

5.4 LIMITATIONS

Notwithstanding these findings, like any other study, this study had limitations. Firstly, the results of this study were based on South African REITs listed on the JSE. Of the 37 companies targeted, 22 companies, representing 59%, met the criteria. As a result, the findings of this study may not be generalised to the entire real estate sector due to survivorship bias.

Secondly, the study focused on accounting-based measures of financial performance, such as Return on Capital Employed, which may be vulnerable to distortion by human error, accounting policies and inconsistencies in the accounting systems (Tshipa et al., 2018). The study did not assess the influence of long-term incentives on market-based measures of financial performance.

Thirdly, the study focused on 'the long-term incentive plans component of executive compensation. Guaranteed pay and short-term incentives were not considered for the study. Thus, this study may not be associated with executive compensation as a whole.

Lastly, the study focuses on a five-year dataset between 2018 and 2022. Further studies should also consider extending the analysis period to comprehensively understand the correlation between long-term incentives across various economic periods.

Hence, the conclusions of this study should be interpreted in the context of the limitations mentioned above. Furthermore, these constraints may give rise to research gaps that can be resolved in future studies.

5.5 IMPLICATION OF THE STUDY FINDINGS AND RECOMMENDATION

The implications of the study's findings are multifaceted. REITs listed on the JSE must have remuneration policies by the JSE listing requirements. Finally, the study found a positive relationship between long-term incentives and financial performance, which has several implications.

Firstly, the study findings align with the fundamental tenets of agency theory, which emphasises the importance of aligning the interests of agents (executives) with those of principals (shareholders) to mitigate agency conflicts (Berle & Means, 1932; Naz et al., 2022). The study supports the notion that well-designed remuneration policies featuring long-term incentives can serve as mechanisms to bridge the principal-agent gap, fostering mutual satisfaction and collaboration. In the realm of agency theory, the study suggests that when structured effectively, remuneration policies act as tools for incentivising executives to make decisions that enhance shareholder value. By positively influencing financial performance, the observed impact of stock options and cash bonuses on REITs supports the idea that aligning managerial incentives with the interests of shareholders is crucial for achieving organisational goals. Therefore, the study underscores the strategic role of remuneration policies in shaping the dynamics of the principal-agent relationship within the context of agency theory. This influence is seen as contributing to improved corporate governance and organisational performance.

Secondly, the study findings highlight a positive relationship between long-term incentives, particularly stock options and cash bonuses and the enhanced financial performance of Real Estate Investment Trusts (REITs), underscoring the crucial impact that remuneration policies

can have on organisational success (Hampsink, 2020; Jeffers, 2018). Beyond merely meeting regulatory requirements, JSE-listed companies are strongly advised to recognise remuneration policies as strategic instruments that can significantly contribute to both effective corporate governance and organisational performance optimisation. This study amplifies the broader implications of remuneration policies, positioning them as tools for regulatory compliance and as integral components of comprehensive corporate governance strategies tailored for the unique context of JSE-listed entities. Emphasising the strategic nature of these policies encourages organisations to view them as dynamic instruments that, when aligned with organisational goals, can foster positive outcomes, including enhanced financial performance, strengthened stakeholder trust and increased attractiveness to potential investors.

5.6 RECOMMENDATION FOR FUTURE STUDIES

Based on the results and limitations of the study, future studies are recommended. Firstly, the study focused on Real Estate Investment Trusts listed on the Johannesburg Stock Exchange. Future studies can focus on all companies listed on the Johannesburg Stock Exchange to give better insight into the impact of long-term incentives on JSE-listed companies. Future studies can further explore other African countries, which will contribute to the body of knowledge in the context of African corporate governance.

Secondly, the study focused on accounting-based measurements of financial performance. The study focused on the Return on Capital Employed. Therefore, future studies should focus on other accounting-based and market-based performance measures to validate findings.

Thirdly, this study focused on long-term incentives as a component of executive compensation. Future studies should examine other elements of executive compensation, such as guaranteed pay and short-term incentives.

Finally, this study focused on five years between 2018 and 2022. Further studies should also consider extending the analysis period to comprehensively understand the relationship between long-term incentives across various economic periods.

Finally, other models, regression also has limitations that may affect the interpretation of the results. This study recommends that further research should focus on comparing the forecasting performances of models such as GARCH and exponential smoothing on forecasting performance.

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APPENDICES

APPENDIX 1 - DATA COLLECTION INSTRUMENT

				INDEPENDENT VARIABLES		DEPENDENT VARIABLES	CONTROL VARIABLES	
				Long-Term Incentives		1	1	2
TICKER NO.	INDUSTRY	Company	Year	Stock Options	Cash Bonus	ROCE	Board Size	Company Size (Turnover) '000
1	Real Estate	ACCELERATE	2018	2 000	588	0,63	11	856 476
			2019	502	638	-6,74	11	1 008 402
			2020	0	438	-7,5	11	742 665
			2021	1 422	577	4,6	11	1 085 621
			2022	2489	874	9,41	11	1 234 326
2		ATTACQ	2018	0	562	5,76	14	2 521 573
			2019	8 444	1 208	8,73	14	2 390 241
			2020	12 508	1 441	15,67	14	2 192 386
			2021	10 156	994	8,29	14	2 283 244
			2022	11 725	1 345	9,48	14	2 138 961
3		COLLINS	2018	5 021	941	2,86	12	1 147 008
			2019	7 065	1300	5,85	12	79 239
			2020	59	320	0,65	12	74 274
			2021	4 069	880	1,64	12	94 608
			2022	75	390	2,99	12	96 438
4		EMIRA	2018	12 434	1 129	7,91	12	1 295 944
			2019	9 869	954	3,87	12	1 456 950
			2020	11 812	730	6,3	12	1 476 324
			2021	5 743	838	6,7	12	1 501 114
			2022	0	670	6,96	12	1 686 962
5		EQUITES	2018	10 533	1 439	7,8	14	3 212 750
			2019	6 326	1 234	2,14	14	1 687 571
			2020	8 764	874	4,66	14	1 185 380

			2021	5 489	1 043	5,62	14	993 699
			2022	13 176	1 089	10,47	14	766 158
6		EXEMPLAR	2018	15488	333	12,51	8	1 047 495
			2019	5 051	286	4,08	8	884 606
			2020	7 515	256	6,07	8	789 206
			2021	10 202	246	8,24	8	727 690
			2022	5 051	266	4,08	8	517 431
7		HAMMERSON	2018	1 112	122	3,7	5	131 400
			2019	2 574	123	8,56	5	146 800
			2020	9 895	69	32,91	5	182 900
			2021	3 289	96	10,94	5	246 200
			2022	896	143	2,98	5	292 400
8		HYPROP	2018	4 400	802	4,34	14	131 400
			2019	4 884	523	-3,24	14	146 800
			2020	5 172	560	-3,52	14	182 900
			2021	8 628	742	8,51	14	246 200
			2022	7 411	629	7,31	14	292 400
9		MAS	2018	227	50	9,67	9	3 120 763
			2019	584	49	5,81	9	2 781 339
			2020	714	40	-2,12	9	3 102 342
			2021	422	66	4,66	9	3 217 848
			2022	-411	20,574	1,48	9	3 113 713
10		OCTODEC	2018	37 716	7 135	5,88	14	1 939 072
			2019	38 913	8 143	-1,97	14	1 834 313
			2020	38 710	7 911	-2,14	14	1 880 496
			2021	36 925	5 941	2,51	14	1 982 695
			2022	33 322	7 058	4,84	14	1 895 288
11		PUTPROP	2018	7 772	192	5,91	7	111 325
			2019	7 676	181	2	7	73 075
			2020	6 436	172	0,38	7	73 890
			2021	5 882	153	4,37	7	76 091
			2022	0	133	0,92	7	72 971
12		REDEFINE	2018	5 918	1 479	10,21	9	8 238 807

			2019	4 640	874	3,9	9	7 156 530
			2020	21 509	1 464	-2,35	9	8 714 924
			2021	33 674	2 610	3,42	9	8 637 504
			2022	27 560	1 733	6,95	9	8 133 099
13		RESILIENT	2018	56 009	1 410	12,88	12	3 398 082
			2019	45 742	1 321	0,75	12	2 879 821
			2020	37 072	1 567	-2,53	12	3 009 617
			2021	33 410	1 398	13,52	12	2 902 247
			2022	39 636	1 446	8,82	12	2 661 787
14		SA CORP	2018	6 755	892	4,9	11	2 042 494
			2019	1 419	463	3,77	11	2 121 452
			2020	3 265	459	-1,19	11	2 062 186
			2021	4 024	559	1,28	11	2 283 947
			2022	4 642	511	4,68	11	2 309 524
15		SAFARI	2018	25	309	7,13	7	456 899
			2019	22	279	9,85	7	416 068
			2020	21	269	4,25	7	342 712
			2021	26	328	4,07	7	345 444
			2022	19	231	4,5	7	299 427
16		SCHRODER	2018	22	70	5,74	5	18 153
			2019	24	60	2,33	5	16 921
			2020	15	50	9,69	5	19 235
			2021	15	50	2,98	5	18 667
			2022	15	40	5,3	5	19 900
17		SIRIUS	2018	10 804	5 402	6,3	9	270 100
			2019	10 509	4 204	10,33	9	210 182
			2020	8 268	3 307	6,97	9	165 361
			2021	7 501	3 000	10,99	9	150 014
			2022	7 003	2 801	7,61	9	140 063
18		SPEAR	2018	3 165	726	3,7	10	581 232
			2019	3 073	667	1,3	10	574 862
			2020	17	210	2,1	10	531 237
			2021	832	10 394	7,34	10	519 710

			2022	20	249	12,67	10	426 122
19		STOR-AGE	2018	9 027	1 056	10,43	10	1 070 788
			2019	5 823	685	16,1	10	910 682
			2020	0	317	1,47	10	800 222
			2021	0	249	4,07	10	698 822
			2022	0	193	12,43	10	524 351
20		TEXTON	2018	376	272	1,22	8	333 206
			2019	393	234	5,78	8	441 693
			2020	398	344	-3,61	8	519 185
			2021	889	11 113	20,15	8	555 665
			2022	18	224	-4,35	8	588 913
21		TRANSCEND	2018	7 824	364	8,9	15	391 219
			2019		200		15	
			2020	6 106	242	-1,73	15	305 323
			2021	6 873	297	2,99	15	343 626
			2022	6 718	1 093	10,2	15	335 893
22		VUKILE	2018	7 824	1 369	5,81	10	391 219
			2019	0	1 090	1,81	10	
			2020	131	1 088	-0,28	10	305 323
			2021	6 873	1 773	5,18	10	343 626
			2022	6 718	1 506	11,26	10	335 893

Our Ref: M. 370623
Enquiries: research@iie.ac.za

23 June 2023



Outcome of Ethics Clearance Application for Master of Business Administration

Student Name: Lunghile Mbhokota
Student number: [REDACTED]
Brand and campus: IIEMSA

Dear Lunghile,

Thank you for submitting the ethics clearance application for the study:
Long-term incentives and financial performance: **A study of Real Estate Investment Trusts listed on the Johannesburg Stock Exchange.**

We are pleased to inform you that the IIE's Higher Degrees Committee considered and granted ethics clearance. This means that you may proceed with data collection. If you are collecting data from a specific organisation, ensure that you have a gatekeeper's letter that confirms their approval of the data collection being done.

You are reminded that any changes made to the research methodology or title of the research study must be signed off by the IIE's Higher Degrees Committee. Kindly ensure that all ethical considerations are duly applied whilst collecting, analysing and interpreting the data for the completion of your research.

If you have any questions, please feel free to contact your programme team or supervisor directly.

All the best with your research.



Dr WH Engelbrecht
Chair: Higher Degrees Committee